Annual Groundwater Monitoring Report

Southwestern Electric Power Company

Flint Creek Power Plant

Landfill CCR Unit

Gentry, Arkansas

January 2025

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SOUTHWESTERN ELECTRIC POWER COMPANY

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BOUNDLESS ENERGY

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I. Overview

This *Annual Groundwater Monitoring Report* (Report) has been prepared to report the status of activities for the preceding year for an existing CCR unit at Southwestern Electric Power Company's, a wholly owned subsidiary of American Electric Power Company (AEP), Flint Creek Power Plant. The USEPA's CCR rules require that the Annual Groundwater Monitoring Report be posted to the operating record for the preceding year no later than January 31.

In general, the following activities were completed:

- The CCR unit was in Assessment monitoring at the beginning and at the end of 2024. The CCR unit has been in assessment monitoring since 2018;
- Groundwater samples were collected on March 4-5, 2024 in accordance with 40 CFR 257.95(b) and analyzed for all Appendix IV constituents. Groundwater samples were collected on April 15-16, 2024 in accordance with 40 CFR 257.95(d)(1), and analyzed for all Appendix III constituents and those Appendix IV constituents that were detected during the previous sampling (in March 2024) in accordance with 40 CFR 257.95(b). Groundwater samples were collected on August 19-20 and August 26, 2024 in accordance with 40 CFR 257.95(d)(1), and analyzed for all Appendix III constituents and those Appendix IV constituents that were detected during the March 2024 sampling in accordance with 40 CFR 257.95(b). Two glass sample bottles from the August 19-20, 2024 sampling (for mercury analyses at Monitoring Wells B-02 and B-11) were found to be broken upon arrival at the laboratory. These samples were collected again on August 26, 2024 and analyzed at the laboratory without incident. All sampling was performed in accordance with 40 CFR 257.95 *et seq.*, and AEP's *Groundwater Sampling and Analysis Plan (2016)*;
- Groundwater data underwent various validation tests, including tests for completeness, valid values, transcription errors, and consistent units;
- Statistical analysis of assessment monitoring samples collected in September 2023 was completed on January 16, 2024. Statistical analysis of assessment monitoring samples collected in March and April 2024 was completed on August 23, 2024. Statistical analysis of assessment monitoring samples collected in August 2024 was completed on December 12, 2024.
- Statistical analysis of the assessment monitoring events of September 2023, March and April 2024, and August 2024 determined that no statistically significant levels (SSLs) above groundwater protection standards were detected. Statistical analysis of data conducted to determine whether or not one or more Appendix III constituents were detected at statistically significant increases (SSIs) above background was also performed in the three reports. The statistical evaluation of data collected during the September 2023 sampling event concluded that boron concentrations were above the interwell upper prediction limit (UPL)

of 0.107 milligrams per liter (mg/L) at B-2 (0.292 mg/L) and at B-11 (0.364 mg/L), calcium concentrations were above the intrawell UPL of 19.8 mg/L at B-11 (22.4 mg/L), and chloride concentrations were above the intrawell UPL of 9.82 mg/L at B-11 (19.5 mg/L). The statistical evaluation of data collected during the April 2024 sampling event concluded that boron concentrations were above the interwell UPL of 0.107 milligrams per liter (mg/L) at B-2 (0.205 mg/L) and at B-11 (0.334 mg/L), and sulfate concentrations were above the intrawell UPL of 44.5 mg/L at B-9 (46.8 mg/L) and the intrawell UPL of 35.8 mg/L at B-10 (41.2 mg/L). The statistical evaluation of data collected during the August 2024 sampling event concluded that boron concentrations were above the interwell UPL of 0.107 milligrams per liter (mg/L) at B-2 (0.349 mg/L) and at B-11 (0.331 mg/L), and chloride concentrations were above the intrawell UPL of 7.78 mg/L at B-9 (8.44 mg/L) and the intrawell UPL of 9.82 mg/L at B-11 (20.0 mg/L).

- No alternative source demonstrations (ASDs) relative to the Appendix IV SSLs above the groundwater protection standard were conducted. Based on the results of statistical analysis of data from the September 2023, the April 2024, and the August 2024 sampling events, data concentrations of Appendix III constituents appeared to be above background levels and the unit remained in assessment monitoring.

The major components of this annual report, to the extent applicable at this time, are presented in sections that follow:

- A map, aerial photograph or a drawing showing the CCR unit(s), all groundwater monitoring wells and monitoring well identification numbers;
- All of the monitoring data collected, including the rate and direction of groundwater flow, plus a summary showing the number of samples collected per monitoring well, the dates the samples were collected and whether the sample was collected as part of detection monitoring or assessment monitoring programs is included in Appendix 1;
- Statistical comparison of monitoring data to determine if there have been SSLs above the groundwater protection standards (attached as Appendix 2, where applicable);
- A discussion of whether any alternate source demonstrations were performed, and the conclusions (Attached as Appendix 3, where applicable);
- A summary of any transition between monitoring programs, for example the date and circumstances for transitioning from detection monitoring to assessment monitoring (notices attached as Appendix 4, where applicable);
- Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a statement regarding the rationale for the installation/decommission (Attached as Appendix 5, where applicable); and
- Other information required to be included in the annual report such as an alternate monitoring frequency or assessment of corrective measures, if applicable.

In addition, this report summarizes key actions completed, and where applicable, describes any problems encountered and actions taken to resolve those problems. The report includes a projection of key activities for the upcoming year.

II. Groundwater Monitoring Well Locations and Identification Numbers

The figure that follows depicts the PE-certified groundwater monitoring network, the monitoring well locations and their corresponding identification numbers.

Landfill Monitoring Wells	
Upgradient	Downgradient
B-1B	B-2
B-4	B-6
B-5	B-9

B-7A	B-10
B-12	B-11
B-13	

III. Monitoring Wells Installed or Decommissioned

There were no monitoring wells installed or decommissioned in 2024. The network design, as summarized in the *Groundwater Monitoring Network Design Report* (2017) posted at the CCR web site for the Flint Creek Plant, did not change. That design report, viewable on the AEP CCR web site, discusses the facility location, the hydrogeological setting, the hydrostratigraphic units, the uppermost aquifer, downgradient monitoring well locations and the upgradient monitoring well locations.

IV. Groundwater Quality Data and Static Water Elevation Data, With Flow Rate and Direction and Discussion

Appendix 1 contains tables showing the groundwater quality data collected during the establishment of background quality, detection monitoring, and assessment monitoring. Static water elevation data from each monitoring event also are shown in Appendix 1, along with the groundwater velocities, groundwater flow direction, and potentiometric maps developed after each sampling event.

V. Groundwater Quality Data Statistical Analysis

Statistical analysis of assessment monitoring samples collected in September 2023 was completed on January 16, 2024. Statistical analysis of assessment monitoring samples collected in March and April 2024 was completed on August 23, 2024. Statistical analysis of samples collected during the August 2024 sampling event was completed on December 12, 2024. No SSLs above the groundwater protection standards were identified during the January 2024, August 2024, or December 2024 statistical analyses. Statistical analysis of data conducted to determine whether or not one or more Appendix III constituents were detected at SSIs above background was also performed in the three statistical analysis reports. Several SSIs were concluded for Appendix III parameters as detailed in the overview section of this report. The results of these statistical analyses are documented in the corresponding statistical analysis summary report, both of which are provided in Appendix 2.

VI. Alternate Source Demonstration

ASDs relative to Appendix IV SSLs above the groundwater protection standard were not necessary because no SSLs above the groundwater protection standards were identified from the completed sampling events required by 40 CFR 257.95(d)(1). A statement to this effect is provided in Appendix 3.

VII. Discussion About Transition Between Monitoring Requirements or Alternate Monitoring Frequency

No transition between monitoring requirements occurred in 2024; the CCR unit was in assessment monitoring at the beginning and at the end of 2024. A statement to this effect is provided in Appendix 4.

The Flint Creek landfill monitoring program would return to detection monitoring if all Appendix III and IV constituents are below background values for two consecutive monitoring events. If one or more Appendix IV constituents exceed the corresponding groundwater protection standard due to a release from the landfill, and are not demonstrated to be caused by a source other than the CCR unit or resulting from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality by means of an ASD, an assessment of corrective measures will be undertaken as required by 40 CFR 257.96.

Regarding defining an alternate monitoring frequency, the groundwater velocity and monitoring well production is high enough at this facility that no modification of the assessment monitoring schedule is necessary.

VIII. Other Information Required

The Flint Creek landfill has progressed from detection monitoring to its current status in assessment monitoring. All required information has been included in this annual groundwater monitoring report.

IX. Description of Any Problems Encountered in 2024 and Actions Taken

No significant problems were encountered. Through the use of low-flow purging and sampling methodology, samples representative of uppermost aquifer groundwater were obtained and the schedule was met to support this annual groundwater report preparation.

X. A Projection of Key Activities for the Upcoming Year

Key activities for 2025 include:

- Assessment monitoring on a semiannual schedule;
- Statistical evaluation of the assessment monitoring results to determine any statistically significant increases (or decreases with respect to pH) over an established groundwater protection standard, or whether the concentrations have returned below background concentrations;
- Responding to any new data received in light of CCR rule requirements;
- Preparation of the next annual groundwater report.

APPENDIX 1 - Groundwater Data Tables and Figures

Tables follow showing the groundwater monitoring data collected, the rate of groundwater flow each time groundwater was sampled, the number of samples collected per monitoring well, dates that the samples were collected, and whether each sample was collected as part of a detection monitoring or an assessment monitoring program. Figures follow showing the PE-certified groundwater monitoring network with the corresponding well identifications along with static water elevation data and groundwater flow directions each time groundwater was sampled in the form of annotated satellite images.

Table 1. Groundwater Data Summary: B-1B
Flint Creek - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/24/2016	Background	0.02	90.8	3	0.5955 J1	8.1	22	296
7/19/2016	Background	0.02	92.4	4	0.4424 J1	7.1	25	281
9/14/2016	Background	0.02	96.3	3	0.4087 J1	7.0	24	296
10/5/2016	Background	0.02	89.3	5	0.4557 J1	7.5	25	294
11/7/2016	Background	0.02	86.5	4	< 0.083 U1	7.2	24	270
1/24/2017	Background	0.02	85.9	2	< 0.083 U1	7.7	22	276
3/6/2017	Background	0.02	88.7	2	< 0.083 U1	7.4	23	272
4/25/2017	Background	0.02041	88.1	4	0.53 J1	6.5	23	268
5/15/2017	Background	0.01982	85.5	3	0.4551 J1	6.8	20	240
6/12/2017	Background	0.02962	85.1	4	< 0.083 U1	6.3	21	276
8/29/2017	Detection	0.0579	83.3	3	0.416 J1	7.9	20	264
3/26/2018	Assessment	0.01493	89.6	2	0.098 J1	7.5	22	268
8/28/2018	Assessment	0.026	87.6	--	--	7.3	--	288
10/23/2018	Assessment	--	--	5.53	0.489 J1	--	14.8	--
3/12/2019	Assessment	0.02 J1	93.1	2.31	0.41	7.6	17.5	228
6/10/2019	Assessment	0.05 J1	92.4	2.31	0.49	6.6	20.7	266
8/27/2019	Assessment	< 0.02 U1	86.5	2	0.275 J1	7.4	20	312
3/23/2020	Assessment	--	--	--	--	7.1	--	--
3/24/2020	Assessment	--	--	2.39	0.40	--	21.8	258
6/23/2020	Assessment	--	--	--	--	7.4	--	--
6/24/2020	Assessment	< 0.02 U1	87.0	2.22	0.36	--	23.7	272
10/19/2020	Assessment	--	--	--	--	7.7	--	--
10/20/2020	Assessment	0.03 J1	85.5	2.23	0.37	--	24.5	293
3/1/2021	Assessment	--	--	--	--	7.0	--	--
3/2/2021	Assessment	--	--	--	0.42	--	--	--
6/21/2021	Assessment	0.014 J1	84.8	2.20	0.39	7.2	18.7	290
9/20/2021	Assessment	--	--	--	--	7.7	--	--
9/21/2021	Assessment	0.010 J1	86.1	2.23	0.37	--	19.2	290
3/14/2022	Assessment	--	--	--	--	7.1	--	--
3/15/2022	Assessment	--	--	--	0.39	--	--	--
6/13/2022	Assessment	--	--	--	--	7.0	--	--
6/14/2022	Assessment	< 0.009 U1	73.4 M1, P3	2.10	0.38	--	15.4	310
9/20/2022	Assessment	--	--	--	--	7.0	--	--
9/21/2022	Assessment	0.011 J1	80.3 M1, P3	2.18	0.37	--	15.5	280
3/6/2023	Assessment	--	--	--	--	7.1	--	--
3/7/2023	Assessment	--	--	--	0.35	--	--	--
6/19/2023	Assessment	--	--	--	--	7.1	--	--
6/20/2023	Assessment	0.012 J1	82.4	2.58	0.36	--	20.2	290
9/18/2023	Assessment	--	--	--	--	7.4	--	--
9/19/2023	Assessment	0.012 J1	84.2	2.18	0.34	--	21.1	280
3/4/2024	Assessment	--	--	--	--	7.1	--	--
3/5/2024	Assessment	--	--	--	0.35	--	--	--
4/15/2024	Assessment	--	--	--	--	7.2	--	--
4/16/2024	Assessment	0.011 J1	81.7	2.17	0.24	--	10.7	290
8/19/2024	Assessment	--	--	--	--	7.3	--	--
8/20/2024	Assessment	0.013 J1	84.8	2.07	0.33	--	9.7	270

Table 1. Groundwater Data Summary: B-1B
Flint Creek - LF
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/24/2016	Background	< 0.93 U1	< 1.05 U1	112	0.0480724 J1	< 0.07 U1	0.801049 J1	0.441945 J1	3.583	0.5955 J1	< 0.68 U1	0.028	0.02301 J1	2.01197 J1	< 0.99 U1	< 0.86 U1
7/19/2016	Background	< 0.93 U1	< 1.05 U1	118	0.0361035 J1	< 0.07 U1	0.611765 J1	0.527203 J1	--	0.4424 J1	1.03545 J1	0.028	0.01793 J1	0.869973 J1	< 0.99 U1	< 0.86 U1
9/14/2016	Background	< 0.93 U1	< 1.05 U1	125	< 0.02 U1	< 0.07 U1	1	0.454131 J1	8.375	0.4087 J1	0.999779 J1	0.028	< 0.005 U1	0.612698 J1	< 0.99 U1	< 0.86 U1
10/5/2016	Background	< 0.93 U1	< 1.05 U1	122	0.0372394 J1	< 0.07 U1	0.984649 J1	0.750457 J1	8.79	0.4557 J1	1.03454 J1	0.041	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
11/7/2016	Background	< 0.93 U1	< 1.05 U1	131	0.033331 J1	0.0774505 J1	2	0.917319 J1	4.63	< 0.083 U1	1.03555 J1	0.027	0.00589 J1	0.297867 J1	< 0.99 U1	< 0.86 U1
1/24/2017	Background	< 0.93 U1	1.26762 J1	97	0.0223085 J1	< 0.07 U1	1	0.385362 J1	3.178	< 0.083 U1	< 0.68 U1	0.026	0.00757 J1	0.6452 J1	< 0.99 U1	< 0.86 U1
3/6/2017	Background	< 0.93 U1	< 1.05 U1	123	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.325089 J1	3.604	< 0.083 U1	< 0.68 U1	0.034	< 0.005 U1	0.561767 J1	< 0.99 U1	< 0.86 U1
4/25/2017	Background	1.27 J1	< 1.05 U1	112	0.04 J1	< 0.07 U1	0.85 J1	0.49 J1	3.841	0.53 J1	< 0.68 U1	0.02658	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
5/15/2017	Background	< 0.93 U1	< 1.05 U1	118	0.03 J1	< 0.07 U1	0.3 J1	0.49 J1	1.448	0.4551 J1	< 0.68 U1	0.02701	0.009 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
6/12/2017	Background	< 0.93 U1	1.43 J1	123	< 0.02 U1	< 0.07 U1	0.33 J1	0.47 J1	5.15	< 0.083 U1	< 0.68 U1	0.02717	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
3/26/2018	Assessment	< 0.93 U1	< 1.05 U1	108	< 0.02 U1	< 0.07 U1	1.22	0.21 J1	4.485	0.098 J1	0.8 J1	0.0266	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
8/28/2018	Assessment	0.08	0.33	112	0.02 J1	0.07	0.263	0.102	6.51	--	0.247	0.0278	< 0.005 U1	1.17	0.04 J1	0.01 J1
10/23/2018	Assessment	--	--	--	--	--	--	--	--	0.489 J1	--	--	--	--	--	--
3/12/2019	Assessment	< 0.1 U1	0.4 J1	112	< 0.1 U1	< 0.05 U1	< 0.2 U1	< 0.1 U1	3.924	0.41	1.25	0.0264	< 0.005 U1	< 2 U1	< 0.2 U1	< 0.5 U1
6/10/2019	Assessment	0.03 J1	0.62	112	0.02 J1	0.02 J1	0.368	0.051	5.96	0.49	0.530	< 0.02 U1	< 0.005 U1	0.8 J1	< 0.03 U1	< 0.1 U1
8/27/2019	Assessment	0.11	0.57	114	< 0.02 U1	0.06	0.278	0.05 J1	4.73	0.275 J1	0.395	0.0231	< 0.005 U1	1 J1	< 0.03 U1	< 0.1 U1
3/24/2020	Assessment	0.12	0.34	116	< 0.02 U1	0.04 J1	0.07 J1	0.02 J1	5.38	0.40	0.06 J1	0.0242	< 0.002 U1	1 J1	0.08 J1	< 0.1 U1
6/24/2020	Assessment	0.03 J1	0.77	113	< 0.02 U1	0.02 J1	0.273	0.05 J1	4.558	0.36	0.07 J1	0.0243	< 0.002 U1	1 J1	0.04 J1	< 0.1 U1
10/20/2020	Assessment	0.04 J1	0.63	108	< 0.02 U1	0.01 J1	< 0.04 U1	0.072	5.16	0.37	0.07 J1	0.0229	< 0.002 U1	2.29	0.05 J1	0.1 J1
3/2/2021	Assessment	0.02 J1	0.67	102	0.03 J1	< 0.01 U1	0.1 J1	0.04 J1	4.629	0.42	< 0.05 U1	0.0247	< 0.002 U1	< 0.4 U1	< 0.03 U1	< 0.1 U1
6/21/2021	Assessment	< 0.02 U1	0.23	102	0.013 J1	0.007 J1	0.43	0.057	3.94	0.39	0.06 J1	0.0231	< 0.002 U1	0.3 J1	< 0.09 U1	< 0.04 U1
9/21/2021	Assessment	< 0.02 U1	0.28	111	0.008 P2, J1	< 0.004 U1	0.22	0.015 J1	5.07	0.37	< 0.05 U1	0.0243 P2	< 0.002 U1	1.0	< 0.09 U1	< 0.04 U1
3/15/2022	Assessment	0.02 J1	0.41	113	0.022 J1	0.019 J1	0.35	0.044	7.14	0.39	0.42	0.0254	< 0.002 U1	0.9	< 0.09 U1	< 0.04 U1
6/14/2022	Assessment	< 0.02 U1	0.13	109 M1, P3	0.015 J1	< 0.004 U1	0.38	0.018 J1	4.41	0.38	0.05 J1	0.0247	< 0.002 U1	0.2 J1	< 0.09 U1	< 0.04 U1
9/21/2022	Assessment	< 0.02 U1	0.17	108 P3	0.016 J1	0.007 J1	0.28	0.015 B1, J1	7.95	0.37	< 0.05 U1	0.0241	< 0.002 U1	0.5	< 0.09 U1	< 0.04 U1
3/7/2023	Assessment	< 0.02 U1	0.22	108	0.042 J1	0.012 J1	0.30	0.021	3.32	0.35	0.11 J1	0.0249	< 0.002 U1	0.9	< 0.09 U1	< 0.04 U1
6/20/2023	Assessment	0.034 J1	0.42	108	0.028 J1	0.016 J1	0.42	0.165	7.83	0.36	0.35	0.0246	< 0.002 U1	1.3	< 0.04 U1	< 0.02 U1
9/19/2023	Assessment	0.013 J1	0.26	101	0.019 J1	0.015 J1	0.35	0.040	6.82	0.34	0.07 J1	0.0244	< 0.002 U1	0.7	< 0.04 U1	< 0.02 U1
3/5/2024	Assessment	< 0.008 U1	0.13	105	0.016 J1	< 0.004 U1	0.35	0.299	5.34	0.35	< 0.05 U1	0.0255	< 0.002 U1	0.5	< 0.04 U1	< 0.02 U1
4/16/2024	Assessment	0.013 J1	0.09 J1	106	0.021 J1	0.006 J1	0.35	0.016 J1	6.25	0.24	0.06 J1	0.0244	< 0.002 U1	0.2 J1	< 0.04 U1	< 0.02 U1
8/20/2024	Assessment	< 0.008 U1	0.09 J1	114	0.016 J1	< 0.004 U1	0.21 J1	0.010 J1	5.73	0.33	0.38	0.0244	< 0.002 U1	0.3 J1	< 0.04 U1	< 0.02 U1

Table 1. Groundwater Data Summary: B-2
Flint Creek - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/24/2016	Background	1.13	91.9	6	< 0.083 U1	7.0	619	1,212
7/19/2016	Background	1.33	59.9	7	0.3361 J1	6.7	464	936
9/14/2016	Background	1.19	62.6	7	< 0.083 U1	6.6	560	1,124
10/5/2016	Background	1.32	45.3	7	< 0.083 U1	5.9	339	741
11/8/2016	Background	1.82	27.5	6	< 0.083 U1	6.0	145	365
1/23/2017	Background	1.56	24	5	< 0.083 U1	5.8	119	296
3/7/2017	Background	1.04	32.1	5	< 0.083 U1	5.9	105	260
4/25/2017	Background	1.44	23.1	6	< 0.083 U1	6.3	179	400
5/15/2017	Background	1.33	20.7	6	< 0.083 U1	5.5	153	328
6/12/2017	Background	0.936	39.6	6	< 0.083 U1	5.9	109	278
8/29/2017	Detection	1.07	18	6	< 0.083 U1	6.0	116	270
12/21/2017	Detection	0.7	--	--	--	5.9	--	--
3/26/2018	Assessment	0.851	15.3	4	< 0.083 U1	6.7	138	324
8/27/2018	Assessment	0.702	56.3	--	--	6.7	--	532
10/23/2018	Assessment	--	--	10.8	< 0.083 U1	--	198	--
3/12/2019	Assessment	0.634	34.5	5.88	0.1 J1	6.9	129	376
6/11/2019	Assessment	0.697	14.2	4.16	0.06 J1	6.4	80.9	246
8/27/2019	Assessment	0.735	15.4	3	< 0.083 U1	5.9	65	230
12/9/2019	Assessment	--	--	--	--	6.6	--	--
3/24/2020	Assessment	--	--	2.81	0.07	5.7	68.1	168
6/24/2020	Assessment	0.355	30.7	5.36	0.09	6.2	84.9	252
10/19/2020	Assessment	0.504	33.9	4.10	0.07	5.5	110	304
3/1/2021	Assessment	--	--	--	0.11	6.1	--	--
6/21/2021	Assessment	0.480	23.0	3.68	0.11	5.7	60.9	230 P1
9/20/2021	Assessment	0.488	32.8	3.11	0.11	5.5	70.5	240
3/14/2022	Assessment	--	--	--	0.08	5.8	--	--
6/13/2022	Assessment	0.390	22.9	2.80	0.09	5.6	49.4	220
9/20/2022	Assessment	0.419	29.3	3.57	0.10	6.0	67.9	220
3/6/2023	Assessment	--	--	--	0.08	5.7	--	--
6/19/2023	Assessment	0.205	32.7	5.88	0.06	5.4	292	560
9/18/2023	Assessment	0.292	26.8	3.21	0.07	5.6	45.3	190
3/4/2024	Assessment	--	--	--	0.08	5.6	--	--
4/15/2024	Assessment	0.406	25.3	4.22	0.08	5.4	70.7	190
8/19/2024	Assessment	0.349	40.3	4.11	0.09	5.5	75.9	270

Table 1. Groundwater Data Summary: B-2
Flint Creek - LF
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/24/2016	Background	< 0.93 U1	< 1.05 U1	94	0.131152 J1	< 0.07 U1	4	0.952324 J1	1.06	< 0.083 U1	< 0.68 U1	0.009	0.02106 J1	6	82	< 0.86 U1
7/19/2016	Background	< 0.93 U1	< 1.05 U1	114	0.297284 J1	< 0.07 U1	6	2.18888 J1	--	0.3361 J1	1.98005 J1	0.005	0.00946 J1	2.74335 J1	50	< 0.86 U1
9/14/2016	Background	1.81571 J1	8	226	1	0.348046 J1	26	15	1.752	< 0.083 U1	13	0.021	0.027	2.59675 J1	49	0.98925 J1
10/5/2016	Background	< 0.93 U1	< 1.05 U1	73	0.168987 J1	< 0.07 U1	5	1.57645 J1	4.10	< 0.083 U1	1.52736 J1	0.016	< 0.005 U1	0.783837 J1	35	< 0.86 U1
11/8/2016	Background	1.15186 J1	17	543	3	0.870406 J1	37	31	3.87	< 0.083 U1	26	0.027	0.05	2.69221 J1	13	< 0.86 U1
1/23/2017	Background	1.32054 J1	2.57288 J1	214	0.763757 J1	< 0.07 U1	10	6	1.408	< 0.083 U1	4.36086 J1	0.007	0.01252 J1	0.832511 J1	9	< 0.86 U1
3/7/2017	Background	6	< 1.05 U1	70	0.157872 J1	< 0.07 U1	2	0.632449 J1	1.372	< 0.083 U1	< 0.68 U1	0.005	< 0.005 U1	0.478127 J1	20	< 0.86 U1
4/25/2017	Background	< 0.93 U1	1.39 J1	97.47	0.22 J1	0.08 J1	3.44	1.24 J1	1.881	< 0.083 U1	1.32 J1	0.00242	< 0.005 U1	0.77 J1	9.94	< 0.86 U1
5/15/2017	Background	1.17 J1	1.77 J1	51.22	0.17 J1	< 0.07 U1	2.49	0.47 J1	1.429	< 0.083 U1	0.8 J1	0.00161	< 0.005 U1	0.34 J1	9.52	< 0.86 U1
6/12/2017	Background	< 0.93 U1	1.08 J1	79.45	0.17 J1	0.09 J1	3.76	1.67 J1	1.839	< 0.083 U1	0.8 J1	0.00287	< 0.005 U1	2.1 J1	20.57	< 0.86 U1
3/26/2018	Assessment	1.6 J1	1.44 J1	62.23	0.15 J1	< 0.07 U1	2.15	0.62 J1	2.018	< 0.083 U1	< 0.68 U1	0.0023	< 0.005 U1	< 0.29 U1	8.63	0.88 J1
8/27/2018	Assessment	0.02 J1	0.67	62.7	0.062	0.05	2.17	0.371	2.403	--	0.332	0.00172	0.005 J1	4.42	27.3	0.066
10/23/2018	Assessment	--	--	--	--	--	--	--	--	< 0.083 U1	--	--	--	--	--	--
3/12/2019	Assessment	< 0.1 U1	0.4 J1	63.9	0.1 J1	0.06 J1	2.83	0.2 J1	1.93	0.1 J1	0.2 J1	0.00188	< 0.005 U1	< 2 U1	14.3	< 0.5 U1
6/11/2019	Assessment	< 0.02 U1	0.18	38.5	0.208	0.04 J1	1.57	0.069	0.959	0.06 J1	< 0.05 U1	< 0.02 U1	< 0.005 U1	0.4 J1	6.7	< 0.1 U1
8/27/2019	Assessment	< 0.02 U1	0.22	41.3	0.149	0.03 J1	1.75	0.105	0.888	< 0.083 U1	0.08 J1	0.00128	< 0.005 U1	0.5 J1	6.8	< 0.1 U1
3/24/2020	Assessment	0.02 J1	0.16	36.0	0.130	0.03 J1	1.37	0.053	1.077	0.07	< 0.05 U1	0.00109	< 0.002 U1	0.8 J1	5.2	< 0.1 U1
6/24/2020	Assessment	< 0.02 U1	0.21	71.6	0.07 J1	0.03 J1	1.74	0.055	1.974	0.09	< 0.05 U1	0.00132	< 0.002 U1	2 J1	8.4	< 0.1 U1
10/19/2020	Assessment	0.02 J1	0.26	73.0	0.08 J1	0.04 J1	1.56	0.131	1.715	0.07	0.1 J1	0.00126	< 0.002 U1	1 J1	12.3	< 0.1 U1
3/1/2021	Assessment	0.04 J1	0.24	46.6	0.08 J1	0.02 J1	1.35	0.136	1.498	0.11	0.1 J1	0.000946	< 0.002 U1	1 J1	5.7	< 0.1 U1
6/21/2021	Assessment	0.02 J1	0.17	51.0	0.090	0.022	1.35	0.092	0.57	0.11	0.08 J1	0.0010	< 0.002 U1	1.2	5.81	0.04 J1
9/20/2021	Assessment	0.02 J1	0.23	61.1	0.052 P2	0.014 J1	1.45	0.108	1.37	0.11	0.07 J1	0.00090 P2	< 0.002 U1	1.9	8.37	< 0.04 U1
3/14/2022	Assessment	0.02 J1	0.22	45.4	0.083	0.019 J1	1.38	0.095	1.83	0.08	0.06 J1	0.00095	< 0.002 U1	1.1	5.88	< 0.04 U1
6/13/2022	Assessment	< 0.02 U1	0.20	49.3	0.069	0.019 J1	1.31	0.074	0.60	0.09	< 0.05 U1	0.00090	< 0.002 U1	1.3	5.20	0.05 J1
9/20/2022	Assessment	< 0.02 U1	0.23	58.6	0.059	0.024	1.57	0.079 B1	2.53	0.10	< 0.05 U1	0.00102	< 0.002 U1	1.5	7.32	0.05 J1
3/6/2023	Assessment	0.05 J1	0.28	46.9	0.106	0.029	1.54	0.295	1.60	0.08	0.29	0.00103	< 0.002 U1	1.4	4.20	< 0.04 U1
6/19/2023	Assessment	0.028 J1	0.42	208	0.155	0.046	1.52	0.291	1.59	0.06	0.33	0.00208	0.002 J1	0.6	11.3	0.03 J1
9/18/2023	Assessment	0.018 J1	0.15	63.7	0.057	0.021	1.47	0.082	2.09	0.07	0.08 J1	0.00132	< 0.002 U1	0.6	3.60	0.02 J1
3/4/2024	Assessment	0.048 J1	0.47	57.8	0.133	0.037	2.00	0.420	3.03	0.08	0.51	0.00142	< 0.002 U1	0.7	6.34	0.06 J1
4/15/2024	Assessment	0.029 J1	0.35	51.1	0.099	0.029	1.49	0.224	0.68	0.08	0.23	0.00102	< 0.002 U1	0.7	5.87	0.04 J1
8/19/2024	Assessment	0.014 J1	0.25	69.8	0.045 J1	0.028	1.61	0.063	1.51	0.09	< 0.05 U1	0.00105	--	1.4	7.42	0.05 J1
8/26/2024	Assessment	--	--	--	--	--	--	--	--	--	--	--	< 0.002 U1	--	--	--

Table 1. Groundwater Data Summary: B-4
Flint Creek - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/24/2016	Background	0.03	8.23	8	< 0.083 U1	7.0	14	92
7/19/2016	Background	0.03	8.86	9	< 0.083 U1	6.7	12	75
9/14/2016	Background	0.03	19.4	8	< 0.083 U1	6.8	8	128
10/5/2016	Background	0.02	8.22	10	< 0.083 U1	6.2	13	78
11/7/2016	Background	0.04	13.3	9	< 0.083 U1	6.7	10	72
1/24/2017	Background	0.04	23.6	8	< 0.083 U1	6.8	5	84
3/7/2017	Background	0.02	22.8	8	< 0.083 U1	7.1	5	52
4/25/2017	Background	0.0382	32.4	9	< 0.083 U1	6.9	8	86
5/15/2017	Background	0.03844	15.5	8	< 0.083 U1	7.2	10	88
6/13/2017	Background	0.0588	7.13	9	< 0.083 U1	7.4	11	76
8/29/2017	Detection	0.04762	5.5	8	< 0.083 U1	7.2	8	60
3/26/2018	Assessment	0.03141	6.06	5	< 0.083 U1	7.4	10	72
8/28/2018	Assessment	0.030	8.23	--	--	7.6	--	44
10/23/2018	Assessment	--	--	9.61	< 0.083 U1	--	13.6	--
3/12/2019	Assessment	0.036	3.37	4.58	0.02 J1	7.5	12.1	68
6/11/2019	Assessment	0.07 J1	3.50	3.74	0.02 J1	7.5	13.4	60
8/28/2019	Assessment	0.056	2.92	3	< 0.083 U1	6.0	11	66
3/23/2020	Assessment	--	--	2.14	0.02 J1	6.7	15.4	58
6/24/2020	Assessment	0.107	2.93	1.92	0.02 J1	6.6	15.3	57
10/19/2020	Assessment	0.070	2.61	2.33	0.02 J1	6.2	11.2	64
3/1/2021	Assessment	--	--	--	0.03 J1	6.0	--	--
6/22/2021	Assessment	0.10	3.2	2.38	0.02 J1	5.6	12.4	70
9/20/2021	Assessment	0.030 J1	49.8	4.50	0.03 J1	6.3	5.88	110
3/14/2022	Assessment	--	--	--	0.02 J1	6.5	--	--
6/13/2022	Assessment	0.092	5.81	2.42	0.02 J1	6.1	11.3	80
9/20/2022	Assessment	0.078	15.1	3.05	0.02 J1	6.2	9.48	80
3/6/2023	Assessment	--	--	--	< 0.02 U1	6.4	--	--
6/19/2023	Assessment	0.019 J1	38.1	5.29	< 0.02 U1	6.2	5.0	140
9/18/2023	Assessment	0.030 J1	29.9	4.79	0.03 J1	6.2	4.4	120
3/5/2024	Assessment	--	--	--	0.03 J1	6.7	--	--
4/15/2024	Assessment	0.042 J1	24.4	4.52	0.03 J1	6.3	5.8	100
8/19/2024	Assessment	0.032 J1	24.6	4.88	< 0.02 U1	6.8	4.7	110

Table 1. Groundwater Data Summary: B-4
Flint Creek - LF
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/24/2016	Background	< 0.93 U1	< 1.05 U1	49	0.205178 J1	< 0.07 U1	1	0.36974 J1	0.734	< 0.083 U1	< 0.68 U1	< 0.00013 U1	0.01529 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
7/19/2016	Background	< 0.93 U1	< 1.05 U1	49	0.211526 J1	< 0.07 U1	1	0.15016 J1	--	< 0.083 U1	< 0.68 U1	0.002	0.00738 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
9/14/2016	Background	< 0.93 U1	< 1.05 U1	65	0.037683 J1	< 0.07 U1	2	0.4142 J1	8.344	< 0.083 U1	1.16564 J1	0.001	< 0.005 U1	< 0.29 U1	< 0.99 U1	0.918935 J1
10/5/2016	Background	< 0.93 U1	< 1.05 U1	71	0.439546 J1	< 0.07 U1	5	2.34157 J1	3.969	< 0.083 U1	1.65693 J1	0.009	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
11/7/2016	Background	< 0.93 U1	1.75787 J1	62	0.382027 J1	0.130549 J1	4	1.2283 J1	0.351	< 0.083 U1	0.943091 J1	0.003	0.00809 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
1/24/2017	Background	2.63622 J1	< 1.05 U1	60	0.210311 J1	< 0.07 U1	2	0.749001 J1	0.945	< 0.083 U1	< 0.68 U1	0.001	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
3/7/2017	Background	1.09461 J1	< 1.05 U1	51	0.24192 J1	< 0.07 U1	1	0.605358 J1	1.588	< 0.083 U1	< 0.68 U1	0.003	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
4/25/2017	Background	< 0.93 U1	< 1.05 U1	63.66	0.08 J1	< 0.07 U1	0.91 J1	0.28 J1	0.679	< 0.083 U1	0.87 J1	0.00083 J1	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
5/15/2017	Background	< 0.93 U1	< 1.05 U1	70.02	0.09 J1	< 0.07 U1	0.99 J1	< 0.14 U1	2.89	< 0.083 U1	< 0.68 U1	0.00077 J1	0.005 J1	< 0.29 U1	1.11 J1	< 0.86 U1
6/13/2017	Background	4.52 J1	1.18 J1	49.29	0.22 J1	0.08 J1	0.82 J1	0.19 J1	3.373	< 0.083 U1	< 0.68 U1	0.00119	< 0.005 U1	< 0.29 U1	< 0.99 U1	0.9 J1
3/26/2018	Assessment	2.1 J1	< 1.05 U1	46.33	0.09 J1	< 0.07 U1	0.99 J1	0.18 J1	2.309	< 0.083 U1	< 0.68 U1	0.00114	< 0.005 U1	< 0.29 U1	1.94 J1	< 0.86 U1
8/28/2018	Assessment	0.01 J1	0.17	40.5	0.208	0.13	1.03	0.184	0.3669	--	0.184	0.00110	< 0.005 U1	0.07 J1	0.8	0.03 J1
10/23/2018	Assessment	--	--	--	--	--	--	--	--	< 0.083 U1	--	--	--	--	--	--
3/12/2019	Assessment	< 0.1 U1	< 0.2 U1	34.3	0.2 J1	0.1 J1	1.26	< 0.1 U1	0.2946	0.02 J1	< 0.1 U1	0.00123	< 0.005 U1	< 2 U1	0.6 J1	< 0.5 U1
6/11/2019	Assessment	< 0.02 U1	0.06 J1	31.2	0.215	0.05 J1	1.03	0.04 J1	0.68	0.02 J1	< 0.05 U1	< 0.02 U1	< 0.005 U1	< 0.4 U1	0.7	< 0.1 U1
8/28/2019	Assessment	< 0.02 U1	0.06 J1	31.1	0.204	0.04 J1	1.11	0.084	1.053	< 0.083 U1	< 0.05 U1	0.000925	< 0.005 U1	< 0.4 U1	0.8	< 0.1 U1
3/23/2020	Assessment	0.03 J1	0.25	35.7	0.198	0.14	0.724	0.133	0.404	0.02 J1	0.396	0.000877	< 0.002 U1	< 0.4 U1	0.5	< 0.1 U1
6/24/2020	Assessment	< 0.02 U1	0.06 J1	38.7	0.169	0.04 J1	0.805	0.059	0.646	0.02 J1	< 0.05 U1	0.000964	0.002 J1	< 0.4 U1	0.5	< 0.1 U1
10/19/2020	Assessment	< 0.02 U1	0.05 J1	28.7	0.204	0.03 J1	0.847	0.04 J1	1.898	0.02 J1	< 0.05 U1	0.000934	< 0.002 U1	< 0.4 U1	0.5	< 0.1 U1
3/1/2021	Assessment	< 0.02 U1	0.09 J1	43.9	0.101	0.03 J1	0.744	0.04 J1	0.887	0.03 J1	< 0.05 U1	0.000761	< 0.002 U1	< 0.4 U1	0.4	< 0.1 U1
6/22/2021	Assessment	< 0.02 U1	0.09 J1	37.2	0.176	0.038	1.03	0.094	1.05	0.02 J1	0.23	0.00083	< 0.002 U1	< 0.1 U1	0.53	< 0.04 U1
9/20/2021	Assessment	0.61	0.14	42.2	0.074 P2	0.052	1.14	0.091	0.67	0.03 J1	3.89	0.00056 P2	< 0.002 U1	< 0.1 U1	0.40 J1	< 0.04 U1
3/14/2022	Assessment	< 0.02 U1	0.08 J1	51.5	0.113	0.030	0.96	0.043	1.02	0.02 J1	< 0.05 U1	0.00076	< 0.002 U1	< 0.1 U1	0.40 J1	< 0.04 U1
6/13/2022	Assessment	< 0.02 U1	0.04 J1	50.8	0.176	0.036	0.84	0.044	0.81	0.02 J1	< 0.05 U1	0.00084	< 0.002 U1	2.8	0.37 J1	< 0.04 U1
9/20/2022	Assessment	< 0.02 U1	0.07 J1	56.3	0.172	0.032	0.82	0.048 B1	1.23	0.02 J1	< 0.05 U1	0.00089	< 0.002 U1	< 0.1 U1	0.38 J1	< 0.04 U1
3/6/2023	Assessment	< 0.02 U1	0.03 J1	41.1	0.246	0.030	1.0	0.041	1.85	< 0.02 U1	< 0.05 U1	0.00106	< 0.002 U1	< 0.1 U1	0.40 J1	< 0.04 U1
6/19/2023	Assessment	0.013 J1	0.12	49.8	0.081	0.028	0.91	0.10	0.75	< 0.02 U1	0.14 J1	0.00070	< 0.002 U1	< 0.1 U1	0.50	0.02 J1
9/18/2023	Assessment	0.010 J1	0.06 J1	45.2	0.107	0.022	0.86	0.040	0.87	0.03 J1	< 0.05 U1	0.00084	< 0.002 U1	< 0.1 U1	0.32 J1	< 0.02 U1
3/5/2024	Assessment	< 0.008 U1	0.07 J1	48.5	0.128	0.032	0.98	0.043	1.65	0.03 J1	< 0.05 U1	0.00091	< 0.002 U1	< 0.1 U1	0.27 J1	0.02 J1
4/15/2024	Assessment	< 0.008 U1	0.06 J1	46.7	0.138	0.031	0.93	0.037	1.17	0.03 J1	< 0.05 U1	0.00085	< 0.002 U1	< 0.1 U1	0.30 J1	< 0.02 U1
8/19/2024	Assessment	< 0.008 U1	0.05 J1	50.2	0.114	0.034	0.83	0.024	0.60	< 0.02 U1	< 0.05 U1	0.00086	< 0.002 U1	< 0.1 U1	0.32 J1	< 0.02 U1

Table 1. Groundwater Data Summary: B-5
Flint Creek - LF
Appendix III Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/24/2016	Background	0.01	17.4	6	< 0.083 U1	5.1	189	424
7/19/2016	Background	0.01	16.2	7	< 0.083 U1	5.2	205	424
9/14/2016	Background	0.01	17.6	7	< 0.083 U1	6.4	187	372
10/4/2016	Background	0.01	18.7	12	0.2728 J1	6.5	197	404
11/8/2016	Background	0.02	15.9	9	< 0.083 U1	6.6	160	352.94
1/23/2017	Background	0.02	18	6	< 0.083 U1	5.6	212	404
3/7/2017	Background	0.02	16.9	6	< 0.083 U1	5.1	200	392
4/25/2017	Background	0.02255	17.6	7	< 0.083 U1	5.9	226	422
5/16/2017	Background	0.01833	18.3	7	< 0.083 U1	4.9	229	416
6/13/2017	Background	0.03663	17	8	< 0.083 U1	5.0	206	410
8/29/2017	Detection	0.03455	16.4	8	< 0.083 U1	5.4	199	376
3/28/2018	Assessment	0.01591	15.5	6	< 0.083 U1	5.4	169	372
8/28/2018	Assessment	0.014	16.5	--	--	5.5	--	396
10/23/2018	Assessment	--	--	10	< 0.083 U1	--	216	--
3/12/2019	Assessment	0.01 J1	16.2	8.30	0.07 J1	5.3	205	372
6/11/2019	Assessment	< 0.04 U1	17.9	7.02	0.08	5.7	271	438
8/28/2019	Assessment	< 0.02 U1	15.9	6	< 0.083 U1	5.0	219	402
3/23/2020	Assessment	--	--	7.75	0.07	4.7	255	418
6/24/2020	Assessment	< 0.02 U1	16.1	8.12	0.05 J1	5.5	249	406
10/19/2020	Assessment	< 0.02 U1	17.3	8.00	0.06	4.6	258	445
3/2/2021	Assessment	--	--	--	0.08	4.8	--	--
6/22/2021	Assessment	< 0.009 U1	15.6	9.16	0.07	4.9	248	410
9/21/2021	Assessment	< 0.009 U1	15.8	9.07	0.07	5.5	254	420
3/15/2022	Assessment	--	--	--	0.06	5.1	--	--
6/13/2022	Assessment	< 0.009 U1	15.5	9.65	0.07	5.4	248	430
9/21/2022	Assessment	< 0.009 U1	15.1	9.93	0.07	5.8	255	410
3/7/2023	Assessment	--	--	--	0.05 J1	5.7	--	--
6/20/2023	Assessment	0.007 J1	15.2	9.66	0.05 J1	5.3	257	430
9/19/2023	Assessment	0.009 J1	14.2	9.40	0.06	5.6	250	430
3/5/2024	Assessment	--	--	--	0.06	5.0	--	--
4/16/2024	Assessment	0.010 J1	13.5	9.08	0.06	5.0	241	390
8/20/2024	Assessment	0.011 J1	14.6	9.04	0.05 J1	5.2	239	400

Table 1. Groundwater Data Summary: B-5
Flint Creek - LF
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/24/2016	Background	< 0.93 U1	< 1.05 U1	49	0.538281 J1	0.130546 J1	3	0.63546 J1	0.70	< 0.083 U1	< 0.68 U1	0003225069333	0.035	< 0.29 U1	36	1.07783 J1
7/19/2016	Background	< 0.93 U1	1.09501 J1	53	0.578371 J1	< 0.07 U1	2	0.670288 J1	--	< 0.083 U1	0.951208 J1	0.003	0.01341 J1	< 0.29 U1	37	< 0.86 U1
9/14/2016	Background	< 0.93 U1	< 1.05 U1	59	0.421905 J1	0.107531 J1	3	0.632453 J1	0.7219	< 0.083 U1	< 0.68 U1	0.003	0.01083 J1	< 0.29 U1	37	< 0.86 U1
10/4/2016	Background	< 0.93 U1	< 1.05 U1	70	0.70802 J1	0.0937694 J1	6	2.24689 J1	4.38	0.2728 J1	2.22182 J1	0.014	0.049	< 0.29 U1	39	< 0.86 U1
11/8/2016	Background	< 0.93 U1	< 1.05 U1	64	0.556725 J1	1	4	0.96226 J1	0.673	< 0.083 U1	< 0.68 U1	0.003	0.02149 J1	< 0.29 U1	33	< 0.86 U1
1/23/2017	Background	< 0.93 U1	< 1.05 U1	60	0.634776 J1	0.136621 J1	5	1.12636 J1	1.222	< 0.083 U1	< 0.68 U1	0.003	0.053	< 0.29 U1	38	1.02071 J1
3/7/2017	Background	< 0.93 U1	< 1.05 U1	42	0.548248 J1	< 0.07 U1	3	0.601941 J1	0.557	< 0.083 U1	< 0.68 U1	0.002	0.0138 J1	< 0.29 U1	36	< 0.86 U1
4/25/2017	Background	1.24 J1	1.87 J1	36.3	0.56 J1	0.15 J1	3.27	0.92 J1	0.698	< 0.083 U1	< 0.68 U1	0.003	0.013 J1	< 0.29 U1	37.33	< 0.86 U1
5/16/2017	Background	< 0.93 U1	1.16 J1	38.38	0.65 J1	0.08 J1	3.63	0.84 J1	4.934	< 0.083 U1	< 0.68 U1	0.00348	0.013 J1	< 0.29 U1	39.1	< 0.86 U1
6/13/2017	Background	< 0.93 U1	< 1.05 U1	37.52	0.6 J1	0.07 J1	3.33	0.63 J1	8.709	< 0.083 U1	< 0.68 U1	0.00323	0.008 J1	< 0.29 U1	36.88	< 0.86 U1
3/28/2018	Assessment	4.41 J1	< 1.05 U1	42.4	0.46 J1	0.27 J1	2.38	0.63 J1	0.721	< 0.083 U1	0.74 J1	0.00263	0.015 J1	< 0.29 U1	35.97	1.16 J1
8/28/2018	Assessment	0.04 J1	0.88	45.0	0.525	0.19	3.01	0.414	1.501	--	0.482	0.00223	0.096	0.06 J1	38.7	0.070
10/23/2018	Assessment	--	--	--	--	--	--	--	--	< 0.083 U1	--	--	--	--	--	--
3/12/2019	Assessment	0.2 J1	0.62	80.5	0.638	0.56	2.89	0.477	0.969	0.07 J1	0.833	0.00274	0.028	< 2 U1	39.2	< 0.5 U1
6/11/2019	Assessment	< 0.02 U1	0.67	26.0	0.376	0.18	3.00	0.349	1.27	0.08	0.203	< 0.02 U1	0.007 J1	< 0.4 U1	39.0	< 0.1 U1
8/28/2019	Assessment	< 0.02 U1	0.44	33.7	0.487	0.18	2.40	0.331	0.717	< 0.083 U1	0.1 J1	0.00215	0.006 J1	< 0.4 U1	37.5	< 0.1 U1
3/23/2020	Assessment	< 0.02 U1	0.33	22.4	0.491	0.16	2.35	0.271	0.6329	0.07	0.1 J1	0.00235	0.003 J1	< 0.4 U1	35.0	< 0.1 U1
6/24/2020	Assessment	< 0.02 U1	0.38	20.1	0.473	0.15	2.42	0.259	0.821	0.05 J1	0.1 J1	0.00232	0.004 J1	< 0.4 U1	35.0	< 0.1 U1
10/19/2020	Assessment	0.02 J1	0.43	19.1	0.502	0.16	2.41	0.291	2.622	0.06	0.2 J1	0.00226	0.005	< 0.4 U1	37.4	< 0.1 U1
3/2/2021	Assessment	< 0.02 U1	0.43	18.3	0.477	0.16	2.50	0.284	0.714	0.08	0.2 J1	0.00227	0.004 J1	< 0.4 U1	36.2	< 0.1 U1
6/22/2021	Assessment	< 0.02 U1	0.33	20.0	0.482	0.174	2.45	0.259	1.10	0.07	0.20	0.00232	0.004 J1	< 0.1 U1	38.6	< 0.04 U1
9/21/2021	Assessment	< 0.02 U1	0.40	18.7	0.480 P2	0.149	2.53	0.260	0.88	0.07	0.18 J1	0.00226 P2	0.006	< 0.1 U1	36.4	< 0.04 U1
3/15/2022	Assessment	0.04 J1	0.54	23.2	0.485	0.171	2.75	0.280	2.62	0.06	0.18 J1	0.00230	0.008	< 0.1 U1	37.1	< 0.04 U1
6/13/2022	Assessment	0.05 J1	0.72	42.6	0.467	0.169	2.99	0.390	1.46	0.07	0.57	0.00242	0.080	1.1	36.0	0.04 J1
9/21/2022	Assessment	< 0.02 U1	0.47	18.6	0.478	0.159	2.61	0.247 B1	2.33	0.07	0.11 J1	0.00227	0.004 J1	< 0.1 U1	36.3	< 0.04 U1
3/7/2023	Assessment	< 0.02 U1	0.26	17.6	0.434	0.162	2.41	0.220	1.38	0.05 J1	0.52	0.00214	0.004 J1	< 0.1 U1	34.6	< 0.04 U1
6/20/2023	Assessment	0.059 J1	0.36	21.4	0.514	0.223	2.38	0.244	5.48	0.05 J1	0.20	0.00224	0.013	< 0.1 U1	35.0	0.03 J1
9/19/2023	Assessment	0.014 J1	0.38	18.0	0.469	0.152	2.44	0.216	0.56	0.06	0.17 J1	0.00226	0.006	< 0.1 U1	33.0	0.04 J1
3/5/2024	Assessment	0.008 J1	0.34	17.8	0.457	0.146	2.58	0.207	1.36	0.06	0.17 J1	0.00234	0.005	< 0.1 U1	34.7	0.04 J1
4/16/2024	Assessment	0.009 J1	0.42	21.1	0.427	0.145	2.40	0.209	1.12	0.06	0.15 J1	0.00217	0.006	< 0.1 U1	31.4	0.03 J1
8/20/2024	Assessment	0.009 J1	0.43	18.9	0.439	0.153	2.46	0.222	2.33	0.05 J1	0.14 J1	0.00227	0.004 J1	< 0.1 U1	34.1	0.04 J1

Table 1. Groundwater Data Summary: B-6
Flint Creek - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/24/2016	Background	0.05	36.9	6	< 0.083 U1	6.7	19	180
7/19/2016	Background	0.06	49.5	8	< 0.083 U1	7.2	24	208
9/14/2016	Background	0.06	52.3	8	< 0.083 U1	6.6	38	232
10/5/2016	Background	0.06	44.7	8	< 0.083 U1	7.0	29	220
11/8/2016	Background	0.06	40	7	< 0.083 U1	6.9	29	208
1/24/2017	Background	0.08	51.9	7	< 0.083 U1	7.0	34	244
3/6/2017	Background	0.06	43	6	< 0.083 U1	7.0	24	178
4/25/2017	Background	0.05207	56.5	8	< 0.083 U1	6.2	37	238
5/15/2017	Background	0.04277	48.6	7	< 0.083 U1	6.5	24	206
6/12/2017	Background	0.05859	53.8	8	< 0.083 U1	6.6	26	252
8/28/2017	Detection	0.06251	37	8	0.2066 J1	7.0	16	162
12/21/2017	Detection	0.06498	--	--	--	7.0	--	--
3/26/2018	Assessment	0.04773	34	6	< 0.083 U1	6.4	13	156
8/28/2018	Assessment	0.050	34.6	--	--	6.4	--	144
10/23/2018	Assessment	--	--	12.2	< 0.083 U1	--	24.6	--
3/12/2019	Assessment	0.037	41.9	8.16	< 0.04 U1	6.9	17.1	100
6/10/2019	Assessment	0.05 J1	49.7	7.78	0.03 J1	6.8	21.7	188
8/27/2019	Assessment	0.03 J1	44.8	6	< 0.083 U1	6.6	36	250
3/24/2020	Assessment	--	--	7.31	0.02 J1	6.6	16.9	202
6/23/2020	Assessment	0.02 J1	37.8	7.25	0.02 J1	6.8	10.8	140
10/19/2020	Assessment	0.03 J1	43.8	7.52	0.02 J1	6.3	16.5	201
3/1/2021	Assessment	--	--	--	0.03 J1	6.6	--	--
6/21/2021	Assessment	0.029 J1	34.0	6.95	0.03 J1	6.1	9.93	150
9/20/2021	Assessment	0.027 J1	37.2	6.55	0.02 J1	5.8	13.3	160
3/14/2022	Assessment	--	--	--	< 0.02 U1	6.3	--	--
6/13/2022	Assessment	0.019 J1	41.8	7.23	0.02 J1	6.2	14.9	180 S7
9/20/2022	Assessment	0.024 J1	36.7 M1, P3	6.66	0.02 J1	6.1	15.1	170
3/6/2023	Assessment	--	--	--	< 0.02 U1	6.3	--	--
6/19/2023	Assessment	0.034 J1	56.2	6.23	< 0.02 U1	6.2	47.5	230
9/18/2023	Assessment	0.044 J1	50.5	7.83	0.03 J1	6.1	25.1	230
3/4/2024	Assessment	--	--	--	0.03 J1	6.4	--	--
4/15/2024	Assessment	0.027 J1	42.5	6.45	0.03 J1	6.0	18.9	210
8/19/2024	Assessment	0.026 J1	34.1	6.38	< 0.02 U1	6.1	11.8	160

Table 1. Groundwater Data Summary: B-6
Flint Creek - LF
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/24/2016	Background	< 0.93 U1	< 1.05 U1	42	0.0329713 J1	< 0.07 U1	2	0.5336 J1	0.625	< 0.083 U1	< 0.68 U1	0.000846322 J1	0.0121 J1	< 0.29 U1	1.38371 J1	< 0.86 U1
7/19/2016	Background	< 0.93 U1	< 1.05 U1	60	0.169224 J1	< 0.07 U1	3	1.23508 J1	--	< 0.083 U1	0.848543 J1	0.002	0.00953 J1	0.863908 J1	3.30254 J1	< 0.86 U1
9/14/2016	Background	< 0.93 U1	< 1.05 U1	65	< 0.02 U1	< 0.07 U1	4	1.26649 J1	1.556	< 0.083 U1	1.53065 J1	0.002	< 0.005 U1	< 0.29 U1	3.35098 J1	< 0.86 U1
10/5/2016	Background	< 0.93 U1	3.63583 J1	87	0.559451 J1	0.268209 J1	11	4.75063 J1	7.58	< 0.083 U1	4.70003 J1	0.016	0.01261 J1	0.732328 J1	3.04012 J1	< 0.86 U1
11/8/2016	Background	< 0.93 U1	< 1.05 U1	58	0.134729 J1	0.116659 J1	5	1.68272 J1	0.846	< 0.083 U1	1.07347 J1	0.002	0.01235 J1	< 0.29 U1	2.02161 J1	< 0.86 U1
1/24/2017	Background	< 0.93 U1	< 1.05 U1	76	0.216535 J1	< 0.07 U1	6	2.57434 J1	1.415	< 0.083 U1	1.31013 J1	0.003	0.00759 J1	0.868445 J1	1.16358 J1	< 0.86 U1
3/6/2017	Background	< 0.93 U1	< 1.05 U1	55	0.140509 J1	< 0.07 U1	4	1.95733 J1	0.705	< 0.083 U1	2.18218 J1	0.004	0.00738 J1	0.328653 J1	1.0391 J1	< 0.86 U1
4/25/2017	Background	< 0.93 U1	1.89 J1	75.05	0.26 J1	0.16 J1	6.35	2.74 J1	0.671	< 0.083 U1	2.44 J1	0.0038	0.008 J1	0.62 J1	4.5 J1	< 0.86 U1
5/15/2017	Background	< 0.93 U1	1.49 J1	59.86	0.12 J1	< 0.07 U1	3.12	1.16 J1	13.943	< 0.083 U1	1.16 J1	0.00182	< 0.005 U1	0.43 J1	1.04 J1	< 0.86 U1
6/12/2017	Background	< 0.93 U1	1.5 J1	65.93	0.16 J1	< 0.07 U1	4.2	1.58 J1	1.14	< 0.083 U1	1.03 J1	0.00238	< 0.005 U1	0.5 J1	< 0.99 U1	1.16 J1
3/26/2018	Assessment	1.45 J1	1.46 J1	56.88	0.1 J1	0.27 J1	4.42	1.8 J1	1.055	< 0.083 U1	2.42 J1	0.00281	0.005 J1	0.58 J1	2.87 J1	1.32 J1
8/28/2018	Assessment	0.01 J1	0.14	41.3	0.007 J1	0.02 J1	1.73	0.022	0.567	--	0.005 J1	0.000415	0.007 J1	0.54	1.7	0.03 J1
10/23/2018	Assessment	--	--	--	--	--	--	--	--	< 0.083 U1	--	--	--	--	--	--
3/12/2019	Assessment	< 0.1 U1	0.61	48.3	< 0.1 U1	< 0.05 U1	2.32	0.597	0.571	< 0.04 U1	0.748	0.0009 J1	< 0.005 U1	< 2 U1	2.2	< 0.5 U1
6/10/2019	Assessment	0.08 J1	0.51	49.8	0.08 J1	0.08 J1	2.18	0.537	0.8101	0.03 J1	0.697	< 0.02 U1	< 0.005 U1	< 0.8 U1	2.4	< 0.2 U1
8/27/2019	Assessment	0.05 J1	0.36	48.6	0.04 J1	0.04 J1	1.96	0.387	0.347	< 0.083 U1	0.509	0.000518	< 0.005 U1	< 0.4 U1	2.4	< 0.1 U1
3/24/2020	Assessment	0.03 J1	0.37	47.3	0.04 J1	0.02 J1	1.53	0.291	3.448	0.02 J1	0.403	0.000636	0.002 J1	< 0.4 U1	1.6	< 0.1 U1
6/23/2020	Assessment	< 0.02 U1	0.15	41.6	< 0.02 U1	0.01 J1	1.19	0.053	0.457	0.02 J1	0.06 J1	0.000456	< 0.002 U1	< 0.4 U1	0.9	< 0.1 U1
10/19/2020	Assessment	< 0.02 U1	0.16	45.4	< 0.02 U1	0.01 J1	1.60	0.054	1.203	0.02 J1	0.06 J1	0.000407	< 0.002 U1	< 0.4 U1	1.6	< 0.1 U1
3/1/2021	Assessment	< 0.02 U1	0.20	41.6	< 0.02 U1	0.01 J1	1.66	0.123	0.147	0.03 J1	0.1 J1	0.000390	< 0.002 U1	< 0.4 U1	1.5	< 0.1 U1
6/21/2021	Assessment	< 0.02 U1	0.19	40.7	0.022 J1	0.018 J1	1.52	0.125	0.63	0.03 J1	0.15 J1	0.00055	< 0.002 U1	0.2 J1	1.07	< 0.04 U1
9/20/2021	Assessment	< 0.02 U1	0.17	37.9	0.009 P2, J1	< 0.004 U1	1.91	0.079	0.81	0.02 J1	0.07 J1	0.00037 P2	< 0.002 U1	0.2 J1	1.51	< 0.04 U1
3/14/2022	Assessment	< 0.02 U1	0.25	40.5	0.016 J1	0.011 J1	2.22	0.155	1.81	< 0.02 U1	0.14 J1	0.00038	< 0.002 U1	0.2 J1	1.94	< 0.04 U1
6/13/2022	Assessment	< 0.02 U1	0.18	42.7	0.010 J1	0.01 J1	1.48	0.081	1.08	0.02 J1	0.08 J1	0.00037	< 0.002 U1	0.2 J1	1.29	< 0.04 U1
9/20/2022	Assessment	< 0.02 U1	0.16	37.8 P3	0.010 J1	0.011 J1	1.95	0.081 B1	1.05	0.02 J1	0.06 J1	0.00034	< 0.002 U1	0.2 J1	1.53	< 0.04 U1
3/6/2023	Assessment	0.04 J1	0.19	48.4	0.042 J1	0.011 J1	1.66	0.114	1.30	< 0.02 U1	0.28	0.00032	< 0.002 U1	0.2 J1	3.39	< 0.04 U1
6/19/2023	Assessment	0.022 J1	0.29	50.4	0.038 J1	0.019 J1	2.17	0.253	1.16	< 0.02 U1	0.31	0.00044	< 0.002 U1	0.2 J1	4.39	< 0.02 U1
9/18/2023	Assessment	0.021 J1	0.25	59.3	0.030 J1	0.015 J1	1.63	0.195	0.47	0.03 J1	0.25	0.00063	< 0.002 U1	0.4 J1	2.04	< 0.02 U1
3/4/2024	Assessment	0.020 J1	0.29	45.4	0.032 J1	0.014 J1	2.36	0.217	1.36	0.03 J1	0.32	0.00059	< 0.002 U1	0.2 J1	1.77	< 0.02 U1
4/15/2024	Assessment	0.037 J1	0.60	45.3	0.088	0.021	3.23	0.606	0.95	0.03 J1	0.86	0.00076	0.004 J1	0.2 J1	2.19	0.02 J1
8/19/2024	Assessment	0.015 J1	0.19	38.3	0.018 J1	0.011 J1	2.06	0.129	2.36	< 0.02 U1	0.17 J1	0.00045	< 0.002 U1	0.2 J1	1.14	< 0.02 U1

Table 1. Groundwater Data Summary: B-7A
Flint Creek - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/24/2016	Background	0.02	95.1	3	< 0.083 U1	6.7	29	320
7/19/2016	Background	0.02	98.1	4	0.3892 J1	7.2	34	314
9/14/2016	Background	0.02	100	4	< 0.083 U1	7.2	33	304
10/5/2016	Background	0.02	97.1	5	0.3235 J1	7.6	33	312
11/8/2016	Background	0.02	100	4	< 0.083 U1	7.5	32	332
1/24/2017	Background	0.02	102	3	< 0.083 U1	7.3	34	314
3/6/2017	Background	0.02	105	3	< 0.083 U1	7.1	33	296
4/25/2017	Background	0.01786	101	5	< 0.083 U1	7.0	34	298
5/15/2017	Background	0.01605	107	4	< 0.083 U1	6.9	35	306
6/12/2017	Background	0.03032	106	5	< 0.083 U1	6.8	35	320
8/28/2017	Detection	0.03116	102	5	0.274 J1	--	33	304
3/26/2018	Assessment	0.01576	100	3	< 0.083 U1	7.1	33	300
8/28/2018	Assessment	0.018	105	--	--	7.7	--	314
10/23/2018	Assessment	--	--	7.28	< 0.083 U1	--	35.6	--
3/11/2019	Assessment	0.02 J1	99.6	3.43	0.24	7.5	30.7	336
6/10/2019	Assessment	< 0.04 U1	105	3.12	0.24	7.1	35.4	312
8/27/2019	Assessment	< 0.02 U1	102	2	0.144 J1	8.3	36	378
3/24/2020	Assessment	--	--	3.17	0.22	8.4	34.8	304
6/23/2020	Assessment	< 0.02 U1	93.4	3.13	0.19	8.2	35.5	286
10/19/2020	Assessment	< 0.02 U1	97.0	3.03	0.21	8.5	33.9	320
3/1/2021	Assessment	--	--	--	0.25	7.3	--	--
6/21/2021	Assessment	0.015 J1	93.0	3.23	0.25	7.4	33.5	320
9/21/2021	Assessment	0.011 J1	100	3.02	0.20	7.8	33.0	300
3/14/2022	Assessment	--	--	--	0.20	7.4	--	--
6/13/2022	Assessment	< 0.009 U1	78.7 M1	3.09	0.21	7.5	33.8	320
9/20/2022	Assessment	0.013 J1	88.0	3.12	0.19	7.2	34.8	300
3/6/2023	Assessment	--	--	--	0.17	7.1	--	--
6/19/2023	Assessment	0.011 J1	85.3 M1	3.18	0.18	7.4	33.2	310
9/19/2023	Assessment	0.014 J1	92.4	2.98	0.17	7.4	33.1	300
3/5/2024	Assessment	--	--	--	0.17	7.2	--	--
4/15/2024	Assessment	0.011 J1	90.9	3.11	0.18	7.4	32.1	310
8/19/2024	Assessment	0.012 J1	99.2	2.90	0.15	7.5	31.9	310

Table 1. Groundwater Data Summary: B-7A
Flint Creek - LF
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/24/2016	Background	< 0.93 U1	< 1.05 U1	60	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.648714 J1	2.556	< 0.083 U1	< 0.68 U1	0.021	0.033	0.838425 J1	< 0.99 U1	< 0.86 U1
7/19/2016	Background	< 0.93 U1	1.33211 J1	60	0.0763658 J1	< 0.07 U1	0.240969 J1	0.345176 J1	--	0.3892 J1	0.791157 J1	0.022	0.034	0.619545 J1	< 0.99 U1	1.98498 J1
9/14/2016	Background	< 0.93 U1	< 1.05 U1	69	< 0.02 U1	< 0.07 U1	0.354374 J1	0.39525 J1	3.54	< 0.083 U1	< 0.68 U1	0.021	0.00796 J1	0.476503 J1	< 0.99 U1	< 0.86 U1
10/5/2016	Background	< 0.93 U1	< 1.05 U1	66	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.842911 J1	7.97	0.3235 J1	< 0.68 U1	0.034	< 0.005 U1	0.68021 J1	< 0.99 U1	< 0.86 U1
11/8/2016	Background	< 0.93 U1	1.1401 J1	65	< 0.02 U1	< 0.07 U1	0.28162 J1	0.667484 J1	2.247	< 0.083 U1	< 0.68 U1	0.017	0.00705 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
1/24/2017	Background	< 0.93 U1	< 1.05 U1	65	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.352624 J1	2.311	< 0.083 U1	< 0.68 U1	0.015	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
3/6/2017	Background	< 0.93 U1	< 1.05 U1	62	< 0.02 U1	< 0.07 U1	0.432618 J1	0.458003 J1	3.154	< 0.083 U1	< 0.68 U1	0.022	0.00621 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
4/25/2017	Background	< 0.93 U1	< 1.05 U1	68.64	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.64 J1	1.934	< 0.083 U1	< 0.68 U1	0.01501	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
5/15/2017	Background	< 0.93 U1	1.25 J1	59.92	< 0.02 U1	< 0.07 U1	0.24 J1	0.56 J1	2.714	< 0.083 U1	< 0.68 U1	0.01509	0.008 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
6/12/2017	Background	< 0.93 U1	< 1.05 U1	56.32	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.43 J1	3.072	< 0.083 U1	1.74 J1	0.01452	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
3/26/2018	Assessment	1.28 J1	1.85 J1	51.94	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.24 J1	3.93	< 0.083 U1	< 0.68 U1	0.0191	< 0.005 U1	0.29 J1	< 0.99 U1	< 0.86 U1
8/28/2018	Assessment	0.02 J1	1.59	52.4	0.01 J1	0.03	0.071	0.400	2.861	--	0.156	0.0158	< 0.005 U1	0.63	0.04 J1	0.03 J1
10/23/2018	Assessment	--	--	--	--	--	--	--	--	< 0.083 U1	--	--	--	--	--	--
3/11/2019	Assessment	< 0.1 U1	3.15	74.8	< 0.1 U1	0.05 J1	1.95	0.351	1.962	0.24	0.2 J1	0.0200	< 0.005 U1	< 2 U1	< 0.2 U1	< 0.5 U1
6/10/2019	Assessment	0.06 J1	2.35	42.9	< 0.02 U1	0.02 J1	< 0.04 U1	0.074	2.561	0.24	0.1 J1	< 0.02 U1	< 0.005 U1	0.5 J1	< 0.03 U1	< 0.1 U1
8/27/2019	Assessment	0.15	2.93	49.0	< 0.02 U1	0.03 J1	0.2 J1	0.134	1.853	0.144 J1	0.1 J1	0.0164	< 0.005 U1	0.6 J1	0.04 J1	< 0.1 U1
3/24/2020	Assessment	0.07 J1	2.13	50.1	< 0.02 U1	0.17	0.09 J1	0.237	2.876	0.22	0.1 J1	0.0181	< 0.002 U1	0.7 J1	0.1 J1	< 0.1 U1
6/23/2020	Assessment	0.09 J1	3.75	48.5	< 0.02 U1	0.03 J1	0.1 J1	0.057	1.706	0.19	< 0.05 U1	0.0186	0.013	0.7 J1	0.07 J1	< 0.1 U1
10/19/2020	Assessment	0.08 J1	3.45	48.4	< 0.02 U1	0.05	0.1 J1	0.445	3.281	0.21	0.426	0.0180	0.004 J1	0.6 J1	< 0.03 U1	< 0.1 U1
3/1/2021	Assessment	0.05 J1	3.28	48.7	< 0.02 U1	0.02 J1	< 0.04 U1	< 0.02 U1	2.15	0.25	< 0.05 U1	0.0188	< 0.002 U1	0.5 J1	< 0.03 U1	< 0.1 U1
6/21/2021	Assessment	0.03 J1	4.95	49.0	0.010 J1	0.015 J1	0.37	1.34	2.67	0.25	0.14 J1	0.0178 P3	0.003 J1	0.5	< 0.09 U1	< 0.04 U1
9/21/2021	Assessment	0.04 J1	5.28	51.0	0.009 P2, J1	0.018 J1	0.23	0.951	2.26	0.20	0.23	0.0152 P2	< 0.002 U1	0.3 J1	< 0.09 U1	< 0.04 U1
3/14/2022	Assessment	0.03 J1	4.80	50.8	< 0.007 U1	0.152	0.20	0.01 J1	4.77	0.20	< 0.05 U1	0.0174	< 0.002 U1	0.3 J1	< 0.09 U1	< 0.04 U1
6/13/2022	Assessment	0.03 J1	5.56	50.0	0.009 J1	0.011 J1	0.41	1.46	2.85	0.21	0.15 J1	0.0169	0.002 J1	0.2 J1	< 0.09 U1	< 0.04 U1
9/20/2022	Assessment	0.02 J1	5.21	62.4	0.016 J1	0.014 J1	0.40	0.863 B1	2.60	0.19	0.24	0.0174	0.004 J1	0.2 J1	< 0.09 U1	< 0.04 U1
3/6/2023	Assessment	< 0.02 U1	9.74	48.6	0.038 J1	0.017 J1	0.31	0.944	3.57	0.17	0.17 J1	0.0178	0.003 J1	0.3 J1	< 0.09 U1	< 0.04 U1
6/19/2023	Assessment	0.021 J1	9.44	51.6	0.012 J1	0.005 J1	0.38	0.704	2.72	0.18	0.07 J1	0.0171	0.002 J1	0.2 J1	< 0.04 U1	< 0.02 U1
9/19/2023	Assessment	0.027 J1	9.83	29.2	0.011 J1	0.007 J1	0.36	0.245	1.74	0.17	0.07 J1	0.0179	0.004 J1	0.1 J1	< 0.04 U1	< 0.02 U1
3/5/2024	Assessment	0.011 J1	8.83	64.7	0.011 J1	0.014 J1	0.26 J1	0.115	3.36	0.17	0.31	0.0180	0.003 J1	0.1 J1	< 0.04 U1	0.04 J1
4/15/2024	Assessment	< 0.008 U1	5.93	50.2	0.012 J1	0.014 J1	0.40	0.431	4.01	0.18	0.13 J1	0.0156	< 0.002 U1	0.6	< 0.04 U1	< 0.02 U1
8/19/2024	Assessment	0.012 J1	8.01	54.3	0.010 J1	0.007 J1	0.37	0.405	4.21	0.15	0.08 J1	0.0137	0.002 J1	0.4 J1	< 0.04 U1	< 0.02 U1

Table 1. Groundwater Data Summary: B-9
Flint Creek - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/24/2016	Background	0.01	81	5	< 0.083 U1	7.2	14	234
7/19/2016	Background	0.00947041 J1	83	5	0.3556 J1	7.4	14	204
9/14/2016	Background	0.00711941 J1	99.6	7	< 0.083 U1	7.6	18	239
10/4/2016	Background	0.00768136 J1	98.6	8	0.1884 J1	7.4	21	246
11/7/2016	Background	0.01	94.3	6	< 0.083 U1	7.9	25	240
1/23/2017	Background	0.02	99.8	5	< 0.083 U1	6.6	19	234
3/7/2017	Background	0.01	88.5	6	< 0.083 U1	6.4	21	228
4/26/2017	Background	0.01036	87.7	6	0.31 J1	6.8	19	224
5/16/2017	Background	0.009500 J1	98.5	6	< 0.083 U1	7.5	21	198
6/12/2017	Background	0.02369	124	6	< 0.083 U1	7.0	22	270
8/28/2017	Detection	0.02463	106	6	0.2389 J1	7.2	25	224
3/28/2018	Assessment	0.00998 J1	86.1	6	< 0.083 U1	7.9	28	260
8/27/2018	Assessment	0.010	144	--	--	7.7	--	272
10/23/2018	Assessment	--	--	7.22	< 0.083 U1	--	36.7	--
3/12/2019	Assessment	0.01 J1	97.3	3.68	0.1 J1	8.1	34.3	278
6/11/2019	Assessment	< 0.04 U1	99.7	3.69	0.13	7.7	37.6	248
8/27/2019	Assessment	< 0.02 U1	128	3	< 0.083 U1	7.2	37	310
3/24/2020	Assessment	--	--	3.70	0.09	6.9	29.8	264
6/24/2020	Assessment	< 0.02 U1	91.0	4.04	0.07	7.6	30.7	274
10/20/2020	Assessment	< 0.02 U1	88.7	5.39	0.07	6.9	26.2	279
3/2/2021	Assessment	--	--	--	0.09	7.0	--	--
6/21/2021	Assessment	0.01 J1	80.9	4.23	0.09	6.7	28.6	270
9/21/2021	Assessment	< 0.009 U1	86.4	5.20	0.07	6.6	25.7	260
3/15/2022	Assessment	--	--	--	0.07	7.5	--	--
6/13/2022	Assessment	< 0.009 U1	78.6	4.04	0.09	7.2	36.0	290
9/21/2022	Assessment	0.012 J1	83.7	5.37	0.07	6.7	34.2	290
3/7/2023	Assessment	--	--	--	0.07	6.7	--	--
6/20/2023	Assessment	0.013 J1	80.0	5.71	0.06	7.0	42.7	300
9/19/2023	Assessment	0.012 J1	91.2	6.85	0.07	7.0	38.5	280
3/5/2024	Assessment	--	--	--	0.07	7.4	--	--
4/16/2024	Assessment	0.014 J1	84.2	6.37	0.06	6.9	46.8	300
8/20/2024	Assessment	0.017 J1	88.2	8.44	0.06	6.9	41.8	300

Table 1. Groundwater Data Summary: B-9
Flint Creek - LF
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/24/2016	Background	< 0.93 U1	< 1.05 U1	128	0.0475927 J1	< 0.07 U1	2	0.648715 J1	0.25	< 0.083 U1	< 0.68 U1	0.005	0.01472 J1	0.871853 J1	< 0.99 U1	1.51586 J1
7/19/2016	Background	< 0.93 U1	< 1.05 U1	139	0.0706417 J1	< 0.07 U1	2	0.520418 J1	--	0.3556 J1	0.756023 J1	0.003	0.01407 J1	< 0.29 U1	< 0.99 U1	1.04447 J1
9/14/2016	Background	< 0.93 U1	< 1.05 U1	143	< 0.02 U1	< 0.07 U1	3	1.03431 J1	3.039	< 0.083 U1	< 0.68 U1	0.002	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
10/4/2016	Background	< 0.93 U1	< 1.05 U1	135	< 0.02 U1	< 0.07 U1	4	1.7825 J1	0.893	0.1884 J1	0.693028 J1	0.016	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
11/7/2016	Background	< 0.93 U1	< 1.05 U1	136	0.0202009 J1	< 0.07 U1	3	1.48231 J1	0.569	< 0.083 U1	< 0.68 U1	0.003	0.00774 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
1/23/2017	Background	< 0.93 U1	< 1.05 U1	154	0.03324 J1	< 0.07 U1	3	1.21896 J1	0.618	< 0.083 U1	< 0.68 U1	0.003	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
3/7/2017	Background	1.39106 J1	< 1.05 U1	142	< 0.02 U1	< 0.07 U1	2	0.886686 J1	2.009	< 0.083 U1	< 0.68 U1	0.009	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
4/26/2017	Background	< 0.93 U1	1.13 J1	144	< 0.02 U1	< 0.07 U1	2.52	0.93 J1	0.989	0.31 J1	0.79 J1	0.00316	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
5/16/2017	Background	< 0.93 U1	1.68 J1	142	0.03 J1	< 0.07 U1	2.56	0.83 J1	9.472	< 0.083 U1	< 0.68 U1	0.00311	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
6/12/2017	Background	< 0.93 U1	1.11 J1	150	0.04 J1	< 0.07 U1	4.01	1.32 J1	1.795	< 0.083 U1	< 0.68 U1	0.00343	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
3/28/2018	Assessment	< 0.93 U1	< 1.05 U1	177	< 0.02 U1	< 0.07 U1	0.91 J1	0.36 J1	2.06	< 0.083 U1	< 0.68 U1	0.0041	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
8/27/2018	Assessment	0.11	1.29	139	0.034	0.06	1.74	2.33	1.12	--	1.08	0.00241	< 0.005 U1	0.54	0.8	0.04 J1
10/23/2018	Assessment	--	--	--	--	--	--	--	--	< 0.083 U1	--	--	--	--	--	--
3/12/2019	Assessment	< 0.1 U1	0.85	175	< 0.1 U1	< 0.05 U1	0.6 J1	0.2 J1	0.629	0.1 J1	0.2 J1	0.00528	< 0.005 U1	< 2 U1	< 0.2 U1	< 0.5 U1
6/11/2019	Assessment	< 0.1 U1	0.90	166	< 0.1 U1	< 0.05 U1	1.11	0.2 J1	0.1572	0.13	< 0.2 U1	< 0.02 U1	< 0.005 U1	36.1	0.4 J1	< 0.5 U1
8/27/2019	Assessment	0.09 J1	1.67	188	0.02 J1	0.08	1.61	0.827	1.258	< 0.083 U1	0.509	0.00409	< 0.005 U1	0.4 J1	0.5	< 0.1 U1
3/24/2020	Assessment	0.03 J1	0.77	151	< 0.02 U1	0.01 J1	0.932	0.411	1.696	0.09	0.08 J1	0.00356	< 0.002 U1	< 0.4 U1	0.4	< 0.1 U1
6/24/2020	Assessment	0.05 J1	1.04	147	< 0.02 U1	0.01 J1	1.35	0.362	0.843	0.07	0.242	0.00264	< 0.002 U1	< 0.4 U1	0.5	< 0.1 U1
10/20/2020	Assessment	0.03 J1	0.56	154	< 0.02 U1	< 0.01 U1	0.436	0.133	1.204	0.07	0.06 J1	0.00257	< 0.002 U1	< 0.4 U1	0.4	< 0.1 U1
3/2/2021	Assessment	0.02 J1	0.50	157	< 0.02 U1	< 0.01 U1	0.539	0.074	0.703	0.09	< 0.05 U1	0.00280	< 0.002 U1	< 0.4 U1	0.3	< 0.1 U1
6/21/2021	Assessment	0.02 J1	0.46	148	< 0.007 U1	0.009 J1	0.71	0.123	1.24	0.09	< 0.05 U1	0.00272	< 0.002 U1	0.3 J1	0.34 J1	< 0.04 U1
9/21/2021	Assessment	0.03 J1	0.52	158 M1, P3	< 0.007 P2, U1	< 0.004 U1	0.66	0.100	0.96	0.07	< 0.05 U1	0.00264 P2	< 0.002 U1	0.3 J1	0.36 J1	< 0.04 U1
3/15/2022	Assessment	0.02 J1	0.47	166	< 0.007 U1	0.011 J1	0.77	0.122	2.96	0.07	< 0.05 U1	0.00315	< 0.002 U1	0.2 J1	0.38 J1	< 0.04 U1
6/13/2022	Assessment	0.04 J1	0.65	154	0.008 J1	0.025	1.02	0.580	0.99	0.09	0.22	0.00354	< 0.002 U1	3.8	0.40 J1	< 0.04 U1
9/21/2022	Assessment	0.03 J1	0.53	164	< 0.007 U1	0.008 J1	0.90	0.161 B1	0.50	0.07	0.08 J1	0.00279	< 0.002 U1	0.3 J1	0.39 J1	< 0.04 U1
3/7/2023	Assessment	0.03 J1	0.44	158	0.026 J1	0.009 J1	1.02	0.133	1.18	0.07	0.13 J1	0.00386	< 0.002 U1	0.2 J1	0.40 J1	< 0.04 U1
6/20/2023	Assessment	0.026 J1	0.43	154	0.020 J1	0.008 J1	0.95	0.086	0.77	0.06	0.11 J1	0.00285	< 0.002 U1	0.3 J1	0.49 J1	0.02 J1
9/19/2023	Assessment	0.035 J1	0.49	169	< 0.007 U1	0.009 J1	0.87	0.407	0.79	0.07	0.12 J1	0.00299	< 0.002 U1	0.3 J1	0.48 J1	< 0.02 U1
3/5/2024	Assessment	0.025 J1	0.39	192	< 0.007 U1	0.005 J1	0.61	0.045	1.49	0.07	< 0.05 U1	0.00326	< 0.002 U1	0.3 J1	0.55	0.02 J1
4/16/2024	Assessment	0.031 J1	0.44	171	< 0.007 U1	0.008 J1	0.68	0.183	1.09	0.06	0.09 J1	0.00283	< 0.002 U1	0.3 J1	0.40 J1	< 0.02 U1
8/20/2024	Assessment	0.024 J1	0.37	185	< 0.007 U1	< 0.004 U1	0.58	0.037	3.77	0.06	< 0.05 U1	0.00285	< 0.002 U1	0.3 J1	0.45 J1	< 0.02 U1

Table 1. Groundwater Data Summary: B-10
Flint Creek - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/24/2016	Background	0.02	77.6	7	< 0.083 U1	8.4	30	275
7/19/2016	Background	0.01	82.5	8	< 0.083 U1	7.4	30	252
9/14/2016	Background	0.02	104	8	< 0.083 U1	7.3	31	275
10/4/2016	Background	0.02	82.9	9	0.2319 J1	7.0	39	308
11/7/2016	Background	0.03	116	8	< 0.083 U1	8.0	30	268
1/23/2017	Background	0.03	77.1	7	< 0.083 U1	7.1	33	276
3/7/2017	Background	0.02	84.8	6	< 0.083 U1	6.6	29	268
4/25/2017	Background	0.01728	77.4	8	0.3 J1	6.6	26	266
5/15/2017	Background	0.03169	80.6	8	< 0.083 U1	6.8	35	284
6/12/2017	Background	0.04007	75.6	9	< 0.083 U1	6.5	31	296
8/28/2017	Detection	0.0448	72.8	9	0.3304 J1	7.4	28	256
3/26/2018	Assessment	0.00862 J1	76.6	6	< 0.083 U1	8.0	25	244
8/27/2018	Assessment	0.028	64.4	--	--	7.6	--	254
10/23/2018	Assessment	--	--	11.7	< 0.083 U1	--	26.4	--
3/12/2019	Assessment	0.028	72.4	9.68	0.1 J1	8.4	21.4	226
6/10/2019	Assessment	< 0.04 U1	80.4	9.24	0.11	7.4	26.1	260
8/27/2019	Assessment	< 0.02 U1	70.8	7	< 0.083 U1	7.3	26	268
3/24/2020	Assessment	--	--	9.41	0.10	7.2	26.1	252
6/23/2020	Assessment	--	--	--	--	7.8	--	--
6/24/2020	Assessment	< 0.02 U1	76.5	10.1	0.08	--	27.8	234
10/20/2020	Assessment	< 0.02 U1	86.0	10.3	0.08	6.6	26.8	257
3/2/2021	Assessment	--	--	--	0.09	7.1	--	--
6/22/2021	Assessment	< 0.009 U1	78.1	10.7	0.09	6.9	27.0	260
9/20/2021	Assessment	--	--	--	--	6.6	--	--
9/21/2021	Assessment	< 0.009 U1	80.5	10.4	0.1	--	28.9	250
3/14/2022	Assessment	--	--	--	--	6.7	--	--
3/15/2022	Assessment	--	--	--	0.07	--	--	--
6/13/2022	Assessment	--	--	--	--	6.7	--	--
6/14/2022	Assessment	< 0.009 U1	71.6	10.9	0.09	--	28.6	270
9/20/2022	Assessment	--	--	--	--	6.8	--	--
9/21/2022	Assessment	0.013 J1	75.1	11.4	0.11	--	28.5	270
3/6/2023	Assessment	--	--	--	--	6.7	--	--
3/7/2023	Assessment	--	--	--	0.07	--	--	--
6/19/2023	Assessment	--	--	--	--	6.7	--	--
6/20/2023	Assessment	0.016 J1	72.8	11.4	0.19	--	27.7	280
9/18/2023	Assessment	--	--	--	--	6.9	--	--
9/19/2023	Assessment	0.014 J1	81.2	11.3	0.15	--	33.7	290
3/4/2024	Assessment	--	--	--	--	6.5	--	--
3/5/2024	Assessment	--	--	--	0.09	--	--	--
4/15/2024	Assessment	--	--	--	--	6.7	--	--
4/16/2024	Assessment	0.008 J1	73.9	10.4	0.12	--	41.2	300
8/19/2024	Assessment	--	--	--	--	6.4	--	--
8/20/2024	Assessment	< 0.007 U1	76.1	10.9	0.08	--	27.0	270

Table 1. Groundwater Data Summary: B-10
Flint Creek - LF
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/24/2016	Background	< 0.93 U1	< 1.05 U1	77	0.0283721 J1	< 0.07 U1	2	0.567956 J1	0.3279	< 0.083 U1	< 0.68 U1	0.004	0.01767 J1	1.07659 J1	< 0.99 U1	< 0.86 U1
7/19/2016	Background	< 0.93 U1	< 1.05 U1	78	0.0513816 J1	< 0.07 U1	2	0.487304 J1	--	< 0.083 U1	< 0.68 U1	0.002	0.02255 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
9/14/2016	Background	< 0.93 U1	1.73638 J1	102	< 0.02 U1	< 0.07 U1	16	1.45899 J1	0.625	< 0.083 U1	1.5658 J1	0.003	< 0.005 U1	0.405665 J1	< 0.99 U1	< 0.86 U1
10/4/2016	Background	< 0.93 U1	< 1.05 U1	76	< 0.02 U1	< 0.07 U1	1	0.616894 J1	1.305	0.2319 J1	< 0.68 U1	0.016	< 0.005 U1	0.98229 J1	< 0.99 U1	< 0.86 U1
11/7/2016	Background	< 0.93 U1	6	103	0.350438 J1	0.413058 J1	37	5	1.066	< 0.083 U1	2.57815 J1	0.005	0.01543 J1	1.18188 J1	< 0.99 U1	< 0.86 U1
1/23/2017	Background	< 0.93 U1	< 1.05 U1	82	0.049146 J1	< 0.07 U1	1	1.02071 J1	0.618	< 0.083 U1	< 0.68 U1	0.003	< 0.005 U1	1.261 J1	< 0.99 U1	< 0.86 U1
3/7/2017	Background	< 0.93 U1	< 1.05 U1	77	< 0.02 U1	< 0.07 U1	2	0.814652 J1	1.119	< 0.083 U1	< 0.68 U1	0.01	< 0.005 U1	1.02218 J1	< 0.99 U1	< 0.86 U1
4/25/2017	Background	< 0.93 U1	1.5 J1	69.33	< 0.02 U1	< 0.07 U1	0.26 J1	0.65 J1	0.668	0.3 J1	< 0.68 U1	0.00287	< 0.005 U1	0.92 J1	< 0.99 U1	< 0.86 U1
5/15/2017	Background	< 0.93 U1	< 1.05 U1	82.92	< 0.02 U1	< 0.07 U1	0.59 J1	0.76 J1	1.294	< 0.083 U1	< 0.68 U1	0.00357	< 0.005 U1	1.55 J1	< 0.99 U1	< 0.86 U1
6/12/2017	Background	< 0.93 U1	< 1.05 U1	76.25	< 0.02 U1	< 0.07 U1	0.39 J1	1.17 J1	2.477	< 0.083 U1	< 0.68 U1	0.00358	< 0.005 U1	1.28 J1	< 0.99 U1	< 0.86 U1
3/26/2018	Assessment	< 0.93 U1	< 1.05 U1	81.96	< 0.02 U1	< 0.07 U1	1.37	0.44 J1	1.869	< 0.083 U1	1.12 J1	0.00156	< 0.005 U1	0.78 J1	< 0.99 U1	1.36 J1
8/27/2018	Assessment	0.10	2.80	74.8	0.02 J1	0.03	0.889	1.60	0.887	--	0.189	0.00308	0.005 J1	3.52	0.3	0.03 J1
10/23/2018	Assessment	--	--	--	--	--	--	--	--	< 0.083 U1	--	--	--	--	--	--
3/12/2019	Assessment	0.1 J1	0.67	79.1	< 0.1 U1	0.05 J1	0.9 J1	0.299	0.86	0.1 J1	0.3 J1	0.00167	< 0.005 U1	< 2 U1	0.3 J1	< 0.5 U1
6/10/2019	Assessment	0.2 J1	0.3 J1	78.3	< 0.1 U1	< 0.05 U1	0.3 J1	< 0.1 U1	1.128	0.11	< 0.2 U1	< 0.02 U1	< 0.005 U1	10 J1	0.5 J1	< 0.5 U1
8/27/2019	Assessment	0.11	0.46	79.1	< 0.02 U1	0.02 J1	0.385	0.128	1.344	< 0.083 U1	0.05 J1	0.00169	0.016 J1	1 J1	0.4	< 0.1 U1
3/24/2020	Assessment	0.05 J1	0.37	83.5	< 0.02 U1	0.02 J1	0.429	0.03 J1	1.05	0.10	< 0.05 U1	0.00133	< 0.002 U1	0.6 J1	0.4	< 0.1 U1
6/24/2020	Assessment	0.10	0.38	78.8	< 0.02 U1	0.02 J1	0.781	0.102	1.355	0.08	0.08 J1	0.00144	< 0.002 U1	0.8 J1	0.5	< 0.1 U1
10/20/2020	Assessment	0.18	0.80	82.2	0.04 J1	0.04 J1	2.07	1.18	1.748	0.08	0.641	0.00140	0.002 J1	0.7 J1	0.6	< 0.1 U1
3/2/2021	Assessment	0.08 J1	0.36	81.7	< 0.02 U1	0.03 J1	0.649	0.095	0.953	0.09	0.09 J1	0.00127	< 0.002 U1	0.5 J1	0.4	< 0.1 U1
6/22/2021	Assessment	0.11	0.31	82.3	< 0.007 U1	0.030	0.76	0.086	1.09	0.09	0.14 J1	0.00124	< 0.002 U1	0.5	0.44 J1	< 0.04 U1
9/21/2021	Assessment	0.18	0.57	79.8	0.021 P2, J1	0.024	2.30	0.654	1.68	0.1	0.32	0.00132 P2	< 0.002 U1	0.5	0.55	< 0.04 U1
3/15/2022	Assessment	0.16	0.45	87.1	< 0.007 U1	0.026	0.63	0.156	2.12	0.07	0.07 J1	0.00137	< 0.002 U1	1	0.44 J1	< 0.04 U1
6/14/2022	Assessment	0.17	0.26	83.1	< 0.007 U1	0.020	0.59	0.041	1.34	0.09	< 0.05 U1	0.00132	< 0.002 U1	0.9	0.41 J1	< 0.04 U1
9/21/2022	Assessment	0.18	0.92	90.1	0.039 J1	0.046	4.53	1.11 B1	2.24	0.11	0.60	0.00190	< 0.002 U1	1.8	0.54	< 0.04 U1
3/7/2023	Assessment	0.09 J1	0.30	86.2	0.018 J1	0.027	0.70	0.077	1.21	0.07	0.12 J1	0.00149	< 0.002 U1	0.7	0.41 J1	< 0.04 U1
6/20/2023	Assessment	0.108	6.81	85.1	0.047 J1	0.024	1.71	0.381	0.78	0.19	0.27	0.00219	< 0.002 U1	2.0	0.27 J1	0.02 J1
9/19/2023	Assessment	0.259	0.83	85.1	0.049 J1	0.052	3.44	1.51	0.68	0.15	0.73	0.00225	0.003 J1	1.8	0.61	0.04 J1
3/5/2024	Assessment	0.196	0.33	87.6	< 0.007 U1	0.031	0.79	0.132	1.69	0.09	0.16 J1	0.00158	< 0.002 U1	0.7	0.44 J1	< 0.02 U1
4/16/2024	Assessment	0.344	0.49	75.7	0.018 J1	0.030	1.18	0.500	0.97	0.12	0.25	0.00159	< 0.002 U1	1.5	0.50	0.02 J1
8/20/2024	Assessment	0.213	0.37	88.2	0.010 J1	0.030	1.29	0.284	1.91	0.08	0.27	0.00143	< 0.002 U1	0.7	0.57	< 0.02 U1

Table 1. Groundwater Data Summary: B-11
Flint Creek - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/24/2016	Background	0.171	10.5	4	< 0.083 U1	5.7	26	182
7/19/2016	Background	0.238	13.3	5	< 0.083 U1	6.2	41	144
9/14/2016	Background	0.207	14.7	6	< 0.083 U1	6.6	33	120
10/4/2016	Background	0.19	13	6	< 0.083 U1	6.4	36	156
11/7/2016	Background	0.188	11.3	5	< 0.083 U1	6.5	36	106
1/23/2017	Background	0.214	18.2	4	< 0.083 U1	6.1	39	128
3/7/2017	Background	0.199	12.6	3	< 0.083 U1	5.5	37	112
4/26/2017	Background	0.253	16.2	6	< 0.083 U1	5.9	45	130
5/16/2017	Background	0.453	13.6	6	< 0.083 U1	5.3	62	142
6/13/2017	Background	0.508	14.9	6	< 0.083 U1	5.4	60	184
8/28/2017	Detection	0.266	9.65	6	< 0.083 U1	5.3	43	108
12/21/2017	Detection	0.227	--	--	--	6.7	--	--
3/28/2018	Assessment	0.465	12.2	4	< 0.083 U1	5.4	53	136
8/27/2018	Assessment	0.281	10.8	--	--	5.9	--	100
10/23/2018	Assessment	--	--	6.93	< 0.083 U1	--	47.7	--
3/12/2019	Assessment	0.409	11.6	4.03	0.04 J1	5.8	44.9	104
6/10/2019	Assessment	0.548	17.0	3.73	0.04 J1	5.9	54.7	82
8/27/2019	Assessment	0.605	15.4	3	< 0.083 U1	5.8	59	138
3/24/2020	Assessment	--	--	3.27	0.04 J1	6.4	47.6	144
6/23/2020	Assessment	0.255	12.3	4.33	0.02 J1	6.0	32.7	104
10/20/2020	Assessment	0.327	14.1	3.39	0.03 J1	5.3	37.4	143
3/2/2021	Assessment	--	--	--	0.03 J1	5.3	--	--
6/21/2021	Assessment	0.277	11.4	7.00	0.03 J1	5.9	35.1	130
9/21/2021	Assessment	0.375	12.2	6.82	0.03 J1	5.1	41.6	120
3/15/2022	Assessment	--	--	--	< 0.02 U1	6.3	--	--
6/13/2022	Assessment	0.437	23.1	12.2	0.05 J1	6.8	47.8	200
9/21/2022	Assessment	0.337	11.9	8.38	< 0.02 U1	6.4	42.3	130
3/7/2023	Assessment	--	--	--	0.04 J1	6.3	--	--
9/19/2023	Assessment	0.364	22.4	19.5	0.04 J1	6.3	42.7	170
3/5/2024	Assessment	--	--	--	0.03 J1	5.4	--	--
4/16/2024	Assessment	0.334	14.6	16.3	0.03 J1	5.6	40.2	150
8/20/2024	Assessment	0.331	16.1	20.0	0.02 J1	5.6	38.3	130

Table 1. Groundwater Data Summary: B-11
Flint Creek - LF
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/24/2016	Background	< 0.93 U1	< 1.05 U1	139	0.899874 J1	1	13	3.28467 J1	1.311	< 0.083 U1	4.23401 J1	0.006	0.02458 J1	0.362121 J1	< 0.99 U1	< 0.86 U1
7/19/2016	Background	< 0.93 U1	7	187	2	2	22	6	--	< 0.083 U1	9	0.018	0.02442 J1	0.590003 J1	1.89587 J1	< 0.86 U1
9/14/2016	Background	< 0.93 U1	32	494	6	4	108	25	8.05	< 0.083 U1	49	0.079	0.097	3.32649 J1	< 0.99 U1	1.00112 J1
10/4/2016	Background	< 0.93 U1	3.13751 J1	163	1	1	16	4.44532 J1	2.161	< 0.083 U1	6	0.02	< 0.005 U1	0.370625 J1	1.95476 J1	< 0.86 U1
11/7/2016	Background	< 0.93 U1	< 1.05 U1	99	0.259911 J1	0.649573 J1	2	0.824023 J1	0.874	< 0.083 U1	< 0.68 U1	0.004	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
1/23/2017	Background	< 0.93 U1	< 1.05 U1	121	0.136215 J1	0.418062 J1	2	0.286943 J1	1	< 0.083 U1	< 0.68 U1	0.003	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
3/7/2017	Background	< 0.93 U1	< 1.05 U1	97	0.249082 J1	0.477646 J1	2	0.554259 J1	12.993	< 0.083 U1	< 0.68 U1	0.003	< 0.005 U1	< 0.29 U1	2.72028 J1	< 0.86 U1
4/26/2017	Background	< 0.93 U1	< 1.05 U1	138	0.38 J1	0.56 J1	5.16	1.24 J1	0.512	< 0.083 U1	0.83 J1	0.00566	< 0.005 U1	< 0.29 U1	1.52 J1	< 0.86 U1
5/16/2017	Background	< 0.93 U1	1.16 J1	129	0.39 J1	0.15 J1	3.27	0.97 J1	0.911	< 0.083 U1	< 0.68 U1	0.00329	< 0.005 U1	< 0.29 U1	2.68 J1	< 0.86 U1
6/13/2017	Background	< 0.93 U1	< 1.05 U1	127	0.41 J1	0.13 J1	3.67	1.08 J1	2.655	< 0.083 U1	1.23 J1	0.00334	< 0.005 U1	< 0.29 U1	1.15 J1	< 0.86 U1
3/28/2018	Assessment	4.89 J1	< 1.05 U1	124	0.34 J1	0.16 J1	0.99 J1	0.48 J1	1.183	< 0.083 U1	1 J1	0.00181	< 0.005 U1	< 0.29 U1	4.37 J1	< 0.86 U1
8/27/2018	Assessment	0.01 J1	0.25	94.9	0.365	0.15	1.36	0.159	1.551	--	0.097	0.00255	< 0.005 U1	0.08 J1	2.4	0.03 J1
10/23/2018	Assessment	--	--	--	--	--	--	--	--	< 0.083 U1	--	--	--	--	--	--
3/12/2019	Assessment	< 0.1 U1	0.90	119	0.622	0.1 J1	1.95	0.372	0.451	0.04 J1	0.935	0.00221	< 0.005 U1	< 2 U1	3.5	< 0.5 U1
6/10/2019	Assessment	< 0.04 U1	0.36	111	0.316	0.08 J1	0.884	0.162	1.121	0.04 J1	0.2 J1	0.03 J1	< 0.005 U1	< 0.8 U1	3.1	< 0.2 U1
8/27/2019	Assessment	< 0.02 U1	0.55	131	0.317	0.10	1.36	0.256	0.455	< 0.083 U1	0.416	0.00130	< 0.005 U1	< 0.4 U1	4.1	< 0.1 U1
3/24/2020	Assessment	< 0.02 U1	0.20	101	0.162	0.07	0.542	0.094	1.437	0.04 J1	< 0.05 U1	0.000878	< 0.002 U1	< 0.4 U1	3.0	< 0.1 U1
6/23/2020	Assessment	< 0.02 U1	0.13	91.1	0.275	0.07	0.763	0.084	0.835	0.02 J1	< 0.05 U1	0.00128	< 0.002 U1	< 0.4 U1	2.0	< 0.1 U1
10/20/2020	Assessment	< 0.02 U1	0.14	84.9	0.219	0.05	0.919	0.085	2.095	0.03 J1	< 0.05 U1	0.00151	< 0.002 U1	< 0.4 U1	2.3	< 0.1 U1
3/2/2021	Assessment	< 0.02 U1	0.14	103	0.333	0.09	1.08	0.121	0.968	0.03 J1	< 0.05 U1	0.00192	< 0.002 U1	< 0.4 U1	2.1	< 0.1 U1
6/21/2021	Assessment	< 0.02 U1	0.13	101	0.301	0.102	0.99	0.098	0.72	0.03 J1	0.05 J1	0.00112	< 0.002 U1	< 0.1 U1	2.00	< 0.04 U1
9/21/2021	Assessment	< 0.02 U1	0.13	90.5	0.270 P2	0.058	0.92	0.098	1.22	0.03 J1	< 0.05 U1	0.00168 P2	< 0.002 U1	< 0.1 U1	2.38	< 0.04 U1
3/15/2022	Assessment	< 0.02 U1	0.21	113	0.490	0.188	1.27	0.184	1.67	< 0.02 U1	0.07 J1	0.00297	< 0.002 U1	< 0.1 U1	2.48	< 0.04 U1
6/13/2022	Assessment	< 0.02 U1	0.25	99.4	0.075	0.029	0.66	0.096	0.76	0.05 J1	< 0.05 U1	0.00060	< 0.002 U1	1.8	3.33	< 0.04 U1
9/21/2022	Assessment	< 0.02 U1	0.17	96.0	0.287	0.076	1.15	0.115 B1	1.09	< 0.02 U1	< 0.05 U1	0.00161	< 0.002 U1	< 0.1 U1	2.37	< 0.04 U1
3/7/2023	Assessment	< 0.02 U1	0.17	135	0.110	0.042	0.67	0.094	0.95	0.04 J1	0.08 J1	0.00068	< 0.002 U1	< 0.1 U1	2.33	< 0.04 U1
9/19/2023	Assessment	0.019 J1	0.24	107	0.166	0.062	1.34	0.125	0.99	0.04 J1	0.16 J1	0.00141	< 0.002 U1	< 0.1 U1	2.35	0.02 J1
3/5/2024	Assessment	< 0.008 U1	0.14	123	0.301	0.100	1.27	0.107	1.27	0.03 J1	< 0.05 U1	0.00232	< 0.002 U1	< 0.1 U1	2.45	0.03 J1
4/16/2024	Assessment	0.028 J1	0.54	118	0.338	0.151	1.51	0.306	1.43	0.03 J1	0.59	0.00217	0.004 J1	< 0.1 U1	2.90	0.03 J1
8/20/2024	Assessment	< 0.008 U1	0.17	106	0.247	0.089	0.92	0.094	1.04	0.02 J1	0.06 J1	0.00169	--	< 0.1 U1	2.24	0.02 J1
8/26/2024	Assessment	--	--	--	--	--	--	--	--	--	--	--	< 0.002 U1	--	--	--

Table 1. Groundwater Data Summary: B-12
Flint Creek - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/24/2016	Background	0.02	63	10	< 0.083 U1	8.2	19	280
7/19/2016	Background	0.02	61.1	10	< 0.083 U1	7.6	15	216
9/14/2016	Background	0.02	70.5	11	< 0.083 U1	7.1	14	236
10/5/2016	Background	0.02	69.2	12	0.1908 J1	7.0	12	271
11/8/2016	Background	0.03	66.7	12	< 0.083 U1	6.9	14	308
1/24/2017	Background	0.02	67.1	9	< 0.083 U1	6.7	9	268
3/7/2017	Background	0.02	68.1	9	< 0.083 U1	6.3	11	248
4/25/2017	Background	0.02379	59.4	9	< 0.083 U1	6.4	10	282
5/15/2017	Background	0.023	61.5	10	< 0.083 U1	6.4	10	236
6/13/2017	Background	0.0347	59.4	10	< 0.083 U1	6.6	9	252
8/29/2017	Detection	0.03061	72	10	< 0.083 U1	7.2	12	248
3/26/2018	Assessment	0.02876	56.2	7	< 0.083 U1	7.8	6	176
8/28/2018	Assessment	0.016	56.4	--	--	7.9	--	258
10/23/2018	Assessment	--	--	13.2	< 0.083 U1	--	9.16	--
3/11/2019	Assessment	0.02 J1	58.0	11.0	0.06 J1	8.5	5.0	254
6/10/2019	Assessment	0.04 J1	60.9	10.6	0.06 J1	7.2	7.0	244
8/27/2019	Assessment	< 0.02 U1	59.6	8	< 0.083 U1	6.9	9	252
3/23/2020	Assessment	--	--	8.53	0.03 J1	6.7	6.1	210
6/23/2020	Assessment	< 0.02 U1	57.0	11.2	0.03 J1	7.3	6.2	238
10/19/2020	Assessment	< 0.02 U1	70.3	11.0	0.05 J1	6.6	9.5	266
3/1/2021	Assessment	--	--	--	0.05 J1	7.0	--	--
6/21/2021	Assessment	0.014 J1	53.0	9.33	0.04 J1	6.5	4.91	220
9/20/2021	Assessment	0.012 J1	58.2	8.75	0.05 J1	6.4	9.05	220
3/14/2022	Assessment	--	--	--	0.03 J1	6.5	--	--
6/13/2022	Assessment	0.009 J1	48.3	8.90	0.03 J1	6.5	6.20	220 P1
9/20/2022	Assessment	0.014 J1	49.3	6.97	0.04 J1	6.5	7.52	180
3/6/2023	Assessment	--	--	--	0.02 J1	6.5	--	--
6/19/2023	Assessment	0.013 J1	54.5	8.25	0.05 J1	6.6	15.7	240
9/18/2023	Assessment	0.017 J1	57.9	7.06	0.04 J1	6.4	10.5	230
3/4/2024	Assessment	--	--	--	0.04 J1	6.2	--	--
4/15/2024	Assessment	0.013 J1	55.8	8.18	0.05 J1	6.4	10.4	230
8/19/2024	Assessment	0.014 J1	61.4	8.72	0.04 J1	6.8	7.3	200

Table 1. Groundwater Data Summary: B-12
Flint Creek - LF
Appendix IV Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/24/2016	Background	< 0.93 U1	< 1.05 U1	62	0.020013 J1	< 0.07 U1	0.98147 J1	3.36185 J1	0.28188	< 0.083 U1	0.779741 J1	0.000759267 J1	0.01713 J1	2.94917 J1	< 0.99 U1	< 0.86 U1
7/19/2016	Background	< 0.93 U1	< 1.05 U1	61	0.0839166 J1	< 0.07 U1	2	2.84565 J1	--	< 0.083 U1	1.17408 J1	0.001	0.0216 J1	3.86821 J1	< 0.99 U1	< 0.86 U1
9/14/2016	Background	< 0.93 U1	< 1.05 U1	70	< 0.02 U1	< 0.07 U1	2	2.53407 J1	1.953	< 0.083 U1	0.716221 J1	0.000874536 J1	< 0.005 U1	3.27157 J1	< 0.99 U1	< 0.86 U1
10/5/2016	Background	< 0.93 U1	< 1.05 U1	67	< 0.02 U1	< 0.07 U1	0.86698 J1	2.31495 J1	1.666	0.1908 J1	< 0.68 U1	0.014	< 0.005 U1	2.00891 J1	< 0.99 U1	< 0.86 U1
11/8/2016	Background	< 0.93 U1	8	123	1	0.465087 J1	22	23	1.743	< 0.083 U1	15	0.011	0.039	4.65502 J1	< 0.99 U1	< 0.86 U1
1/24/2017	Background	< 0.93 U1	< 1.05 U1	63	< 0.02 U1	< 0.07 U1	0.446889 J1	1.76121 J1	1.357	< 0.083 U1	< 0.68 U1	0.000559654 J1	< 0.005 U1	1.1441 J1	< 0.99 U1	< 0.86 U1
3/7/2017	Background	< 0.93 U1	< 1.05 U1	59	< 0.02 U1	< 0.07 U1	1	1.61975 J1	2.97	< 0.083 U1	0.903447 J1	0.006	< 0.005 U1	2.06812 J1	< 0.99 U1	< 0.86 U1
4/25/2017	Background	1.92 J1	1.23 J1	53.73	0.02 J1	< 0.07 U1	0.65 J1	1.34 J1	0.908	< 0.083 U1	< 0.68 U1	0.00106	0.006 J1	0.69 J1	< 0.99 U1	< 0.86 U1
5/15/2017	Background	< 0.93 U1	1.65 J1	59.7	0.07 J1	< 0.07 U1	1.57	1.95 J1	0.6398	< 0.083 U1	0.77 J1	0.00132	< 0.005 U1	0.58 J1	< 0.99 U1	< 0.86 U1
6/13/2017	Background	< 0.93 U1	< 1.05 U1	56.66	< 0.02 U1	< 0.07 U1	0.63 J1	1.3 J1	2.635	< 0.083 U1	< 0.68 U1	0.00085 J1	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
3/26/2018	Assessment	1.15 J1	< 1.05 U1	50.7	< 0.02 U1	< 0.07 U1	1.06	1.85 J1	0.867	< 0.083 U1	< 0.68 U1	0.00069 J1	< 0.005 U1	1.13 J1	< 0.99 U1	0.96 J1
8/28/2018	Assessment	0.15	0.43	48.8	0.042	0.03	0.993	2.51	0.891	--	0.535	0.000702	< 0.005 U1	1.11	0.4	0.03 J1
10/23/2018	Assessment	--	--	--	--	--	--	--	--	< 0.083 U1	--	--	--	--	--	--
3/11/2019	Assessment	< 0.1 U1	0.3 J1	51.6	< 0.1 U1	< 0.05 U1	1.09	3.35	0.777	0.06 J1	0.5 J1	0.0008 J1	< 0.005 U1	< 2 U1	0.3 J1	< 0.5 U1
6/10/2019	Assessment	0.1 J1	0.29	54.2	< 0.04 U1	0.03 J1	0.585	2.49	0.5134	0.06 J1	0.3	< 0.02 U1	< 0.005 U1	< 0.8 U1	0.2 J1	< 0.2 U1
8/27/2019	Assessment	0.24	1.20	60.8	0.150	0.08	2.04	11.2	1.111	< 0.083 U1	2.65	0.00176	0.006 J1	0.4 J1	1.4	< 0.1 U1
3/23/2020	Assessment	0.05 J1	0.14	52.6	< 0.02 U1	0.02 J1	0.321	2.62	1.722	0.03 J1	0.07 J1	0.000768	< 0.002 U1	0.6 J1	0.1 J1	< 0.1 U1
6/23/2020	Assessment	0.07 J1	0.11	59.7	< 0.02 U1	0.02 J1	0.481	1.82	0.421	0.03 J1	< 0.05 U1	0.000828	< 0.002 U1	0.5 J1	0.1 J1	< 0.1 U1
10/19/2020	Assessment	0.16	0.14	62.9	< 0.02 U1	0.03 J1	0.601	2.26	1.611	0.05 J1	0.1 J1	0.00114	< 0.002 U1	0.7 J1	0.2	< 0.1 U1
3/1/2021	Assessment	0.07 J1	0.12	44.7	< 0.02 U1	0.02 J1	0.501	2.52	0.4501	0.05 J1	0.05 J1	0.000751	< 0.002 U1	0.5 J1	0.09 J1	< 0.1 U1
6/21/2021	Assessment	0.06 J1	0.1	54.6	0.009 J1	0.018 J1	0.68	2.81	4.62	0.04 J1	0.06 J1	0.00086	< 0.002 U1	0.4 J1	0.12 J1	< 0.04 U1
9/20/2021	Assessment	0.16	0.13	52.4	< 0.007 P2, U1	0.008 J1	0.75	2.39	0.74	0.05 J1	0.08 J1	0.00115 P2	< 0.002 U1	0.7	0.17 J1	< 0.04 U1
3/14/2022	Assessment	0.05 J1	0.11	54.2	< 0.007 U1	0.023	0.96	3.50	2.35	0.03 J1	< 0.05 U1	0.00103	< 0.002 U1	0.3 J1	0.20 J1	< 0.04 U1
6/13/2022	Assessment	0.08 J1	0.09 J1	50.5	< 0.007 U1	0.016 J1	0.64	2.83	1.04	0.03 J1	0.08 J1	0.00092	< 0.200 U1	0.4 J1	0.13 J1	< 0.04 U1
9/20/2022	Assessment	0.14	0.13	45.8	0.008 J1	0.021	0.87	2.75 B1	0.74	0.04 J1	0.09 J1	0.00105	< 0.200 U1	0.6	0.10 J1	< 0.04 U1
3/6/2023	Assessment	0.03 J1	0.12	58.0	0.031 J1	0.023	0.59	3.03	0.71	0.02 J1	0.07 J1	0.00108	< 0.002 U1	0.2 J1	0.16 J1	< 0.04 U1
6/19/2023	Assessment	0.179	0.17	50.9	0.034 J1	0.022	1.17	0.666	2.00	0.05 J1	0.23	0.00119	< 0.002 U1	0.7	0.14 J1	0.02 J1
9/18/2023	Assessment	0.126	0.1	54.9	0.009 J1	0.024	0.92	2.54	0.96	0.04 J1	0.08 J1	0.00146	< 0.002 U1	0.4 J1	0.22 J1	0.02 J1
3/4/2024	Assessment	0.049 J1	0.11	55.1	< 0.007 U1	0.021	0.98	3.05	1.44	0.04 J1	0.05 J1	0.00104	< 0.002 U1	0.3 J1	0.20 J1	0.02 J1
4/15/2024	Assessment	0.103	0.12	54.1	0.008 J1	0.022	0.96	3.14	0.93	0.05 J1	0.07 J1	0.00115	< 0.002 U1	0.4 J1	0.16 J1	0.02 J1
8/19/2024	Assessment	0.042 J1	0.09 J1	58.7	< 0.007 U1	0.017 J1	0.99	3.34	0.75	0.04 J1	< 0.05 U1	0.00079	< 0.002 U1	0.4 J1	0.17 J1	< 0.02 U1

Table 1. Groundwater Data Summary: B-13
Flint Creek - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/23/2016	Background	0.02	15.1	4	< 0.083 U1	6.9	20	108
7/19/2016	Background	0.03	14.7	3	< 0.083 U1	5.9	23	88
9/13/2016	Background	0.02	13	4	< 0.083 U1	5.1	18	68
10/5/2016	Background	0.02	13.6	5	< 0.083 U1	5.2	20	80
11/8/2016	Background	0.01	4.07	4	0.2121 J1	5.4	7	52
1/23/2017	Background	0.01	4.26	3	< 0.083 U1	6.2	7	44
3/7/2017	Background	0.02	10.1	3	< 0.083 U1	4.8	16	64
4/26/2017	Background	0.02539	15	4	< 0.083 U1	5.3	27	82
5/16/2017	Background	0.03198	20.1	4	< 0.083 U1	5.7	33	60
6/13/2017	Background	0.04236	20.2	5	< 0.083 U1	5.2	31	114
8/28/2017	Detection	0.02674	12.7	4	< 0.083 U1	5.0	22	72
3/28/2018	Assessment	0.02271	14.8	2	< 0.083 U1	7.5	23	80
8/27/2018	Assessment	0.016	12.4	--	--	5.1	--	58
10/22/2018	Assessment	--	--	3.6	< 0.083 U1	--	21.1	--
3/12/2019	Assessment	0.02 J1	13.5	1.92	0.02 J1	7.1	21.3	82
6/10/2019	Assessment	< 0.04 U1	19.7	3.05	0.02 J1	6.9	20.7	98
8/28/2019	Assessment	< 0.02 U1	10.2	1	< 0.083 U1	5.4	18	64
3/23/2020	Assessment	--	--	1.82	0.02 J1	6.4	19.0	81
6/24/2020	Assessment	< 0.02 U1	16.3	1.93	0.01 J1	6.2	18.7	86
10/20/2020	Assessment	< 0.02 U1	13.0	1.63	0.02 J1	6.2	17.7	77
3/2/2021	Assessment	--	--	--	0.02 J1	5.8	--	--
6/21/2021	Assessment	0.015 J1	16.7	2.16	0.03 J1	6.4	18.2	90
9/21/2021	Assessment	0.012 J1	13.0	1.52	0.02 J1	5.6	16.4	60
3/15/2022	Assessment	--	--	--	< 0.02 U1	5.6	--	--
6/13/2022	Assessment	0.027 J1	16.4	2.64	0.02 J1	6.1	17.1	70 L1
9/21/2022	Assessment	0.013 J1	13.0	2.11	0.02 J1	6.3	15.7	60
3/7/2023	Assessment	--	--	--	< 0.02 U1	5.5	--	--
6/20/2023	Assessment	0.009 J1	10.9	1.57	< 0.02 U1	6.2	17.7	80
9/19/2023	Assessment	0.028 J1	18.9	3.58	0.03 J1	5.7	14.1	81
3/5/2024	Assessment	--	--	--	0.03 J1	5.6	--	--
4/16/2024	Assessment	0.012 J1	12.8	2.02	0.03 J1	5.7	15.4	90
8/20/2024	Assessment	0.018 J1	15.6	3.13	< 0.02 U1	5.5	14.2	80

Table 1. Groundwater Data Summary: B-13
Flint Creek - LF
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/23/2016	Background	< 0.93 U1	< 1.05 U1	53	0.122524 J1	0.107623 J1	2	1.81817 J1	0.4473	< 0.083 U1	< 0.68 U1	< 0.00013 U1	0.02179 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
7/19/2016	Background	< 0.93 U1	< 1.05 U1	60	0.224239 J1	< 0.07 U1	4	1.60103 J1	--	< 0.083 U1	1.35024 J1	0.002	0.01382 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
9/13/2016	Background	< 0.93 U1	< 1.05 U1	54	< 0.02 U1	< 0.07 U1	3	1.45223 J1	1.939	< 0.083 U1	< 0.68 U1	0.002	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
10/5/2016	Background	< 0.93 U1	< 1.05 U1	61	0.237762 J1	< 0.07 U1	5	2.78529 J1	0.829	< 0.083 U1	1.81371 J1	0.011	< 0.005 U1	0.539075 J1	< 0.99 U1	< 0.86 U1
11/8/2016	Background	< 0.93 U1	< 1.05 U1	32	0.28466 J1	0.256467 J1	4	1.50224 J1	0.3576	0.2121 J1	1.58806 J1	0.002	0.00767 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
1/23/2017	Background	< 0.93 U1	< 1.05 U1	36	0.29327 J1	< 0.07 U1	3	1.48125 J1	0.733	< 0.083 U1	< 0.68 U1	0.002	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
3/7/2017	Background	< 0.93 U1	< 1.05 U1	44	0.142049 J1	< 0.07 U1	2	0.769644 J1	0.841	< 0.083 U1	< 0.68 U1	0.002	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
4/26/2017	Background	< 0.93 U1	1.92 J1	66.22	0.22 J1	0.1 J1	4.05	1.94 J1	0.844	< 0.083 U1	1.02 J1	0.00252	0.021 J1	< 0.29 U1	1.68 J1	< 0.86 U1
5/16/2017	Background	< 0.93 U1	< 1.05 U1	71.99	0.13 J1	< 0.07 U1	2.26	0.99 J1	0.918	< 0.083 U1	< 0.68 U1	0.00133	< 0.005 U1	< 0.29 U1	1.38 J1	< 0.86 U1
6/13/2017	Background	< 0.93 U1	< 1.05 U1	72.45	0.12 J1	< 0.07 U1	2.61	1.26 J1	2.577	< 0.083 U1	< 0.68 U1	0.00151	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
3/28/2018	Assessment	< 0.93 U1	< 1.05 U1	56.76	< 0.02 U1	< 0.07 U1	1.45	0.53 J1	0.92	< 0.083 U1	< 0.68 U1	0.00101	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
8/27/2018	Assessment	0.02 J1	0.13	48.3	0.113	0.05	0.611	0.210	0.530	--	0.149	0.000775	< 0.005 U1	0.08 J1	0.5	0.02 J1
10/22/2018	Assessment	--	--	--	--	--	--	--	--	< 0.083 U1	--	--	--	--	--	--
3/12/2019	Assessment	< 0.1 U1	0.62	55.4	0.2 J1	0.08 J1	1.76	1.08	0.882	0.02 J1	1.51	0.00115	< 0.005 U1	< 2 U1	0.8 J1	< 0.5 U1
6/10/2019	Assessment	< 0.02 U1	0.07 J1	55.1	0.05 J1	0.04 J1	0.379	0.03 J1	0.461	0.02 J1	< 0.05 U1	< 0.02 U1	< 0.005 U1	< 0.4 U1	0.5	< 0.1 U1
8/28/2019	Assessment	< 0.02 U1	0.17	47.1	0.151	0.05 J1	0.818	0.272	0.862	< 0.083 U1	0.221	0.000814	< 0.005 U1	< 0.4 U1	0.4	< 0.1 U1
3/23/2020	Assessment	< 0.02 U1	0.06 J1	49.0	0.06 J1	0.04 J1	0.459	0.03 J1	1.475	0.02 J1	< 0.05 U1	0.000578	< 0.002 U1	< 0.4 U1	0.4	< 0.1 U1
6/24/2020	Assessment	< 0.02 U1	0.08 J1	52.3	0.05 J1	0.07	0.460	0.051	0.4377	0.01 J1	0.07 J1	0.000504	< 0.002 U1	< 0.4 U1	0.5	< 0.1 U1
10/20/2020	Assessment	< 0.02 U1	0.06 J1	45.3	0.08 J1	0.05 J1	0.345	0.060	0.276	0.02 J1	0.05 J1	0.000604	< 0.002 U1	< 0.4 U1	0.4	< 0.1 U1
3/2/2021	Assessment	< 0.02 U1	0.1 J1	46.3	0.06 J1	0.03 J1	0.464	0.116	0.179	0.02 J1	0.1 J1	0.000582	< 0.002 U1	< 0.4 U1	0.5	< 0.1 U1
6/21/2021	Assessment	< 0.02 U1	0.18	54.1	0.065	0.036	0.99	0.245	0.51	0.03 J1	0.29	0.00056	< 0.002 U1	0.1 J1	0.49 J1	< 0.04 U1
9/21/2021	Assessment	< 0.02 U1	0.04 J1	46.1	0.064	0.035	0.55	0.029	0.60	0.02 J1	0.11 J1	0.00057	< 0.002 U1	< 0.1 U1	0.43 J1	< 0.04 U1
3/15/2022	Assessment	< 0.02 U1	0.09 J1	49.5	0.060	0.037	0.63	0.068	1.99	< 0.02 U1	< 0.05 U1	0.00058	< 0.004 U1	< 0.1 U1	0.40 J1	< 0.04 U1
6/13/2022	Assessment	< 0.02 U1	0.07 J1	51.7	0.044 J1	0.031	0.55	0.040	0.89	0.02 J1	< 0.05 U1	0.00045	< 0.200 U1	0.1 J1	0.36 J1	< 0.04 U1
9/21/2022	Assessment	< 0.02 U1	0.08 J1	46.7	0.066	0.032	0.81	0.072 B1	1.37	0.02 J1	0.06 J1	0.00056	< 0.200 U1	< 0.1 U1	0.37 J1	< 0.04 U1
3/7/2023	Assessment	< 0.02 U1	0.06 J1	53.8	0.046 J1	0.028	0.64	0.046	0.69	< 0.02 U1	0.08 J1	0.00050	< 0.002 U1	0.1 J1	0.31 J1	< 0.04 U1
6/20/2023	Assessment	0.014 J1	0.08 J1	42.3	0.085	0.034	0.63	0.106	0.81	< 0.02 U1	0.10 J1	0.00063	< 0.002 U1	< 0.1 U1	0.30 J1	< 0.02 U1
9/19/2023	Assessment	0.032 J1	0.1	57.5	0.042 J1	0.041	0.76	0.051	0.61	0.03 J1	< 0.05 U1	0.00047	< 0.002 U1	0.4 J1	0.48 J1	0.04 J1
3/5/2024	Assessment	0.010 J1	0.06 J1	49.6	0.052	0.033	0.61	0.055	1.40	0.03 J1	0.09 J1	0.00046	< 0.002 U1	< 0.1 U1	0.41 J1	< 0.02 U1
4/16/2024	Assessment	0.016 J1	0.07 J1	45.5	0.069	0.032	0.67	0.092	1.35	0.03 J1	0.08 J1	0.00058	< 0.002 U1	< 0.1 U1	0.33 J1	< 0.02 U1
8/20/2024	Assessment	0.010 J1	0.07 J1	48.9	0.053	0.032	0.70	0.074	1.20	< 0.02 U1	0.08 J1	0.00062	< 0.002 U1	0.1 J1	0.41 J1	< 0.02 U1

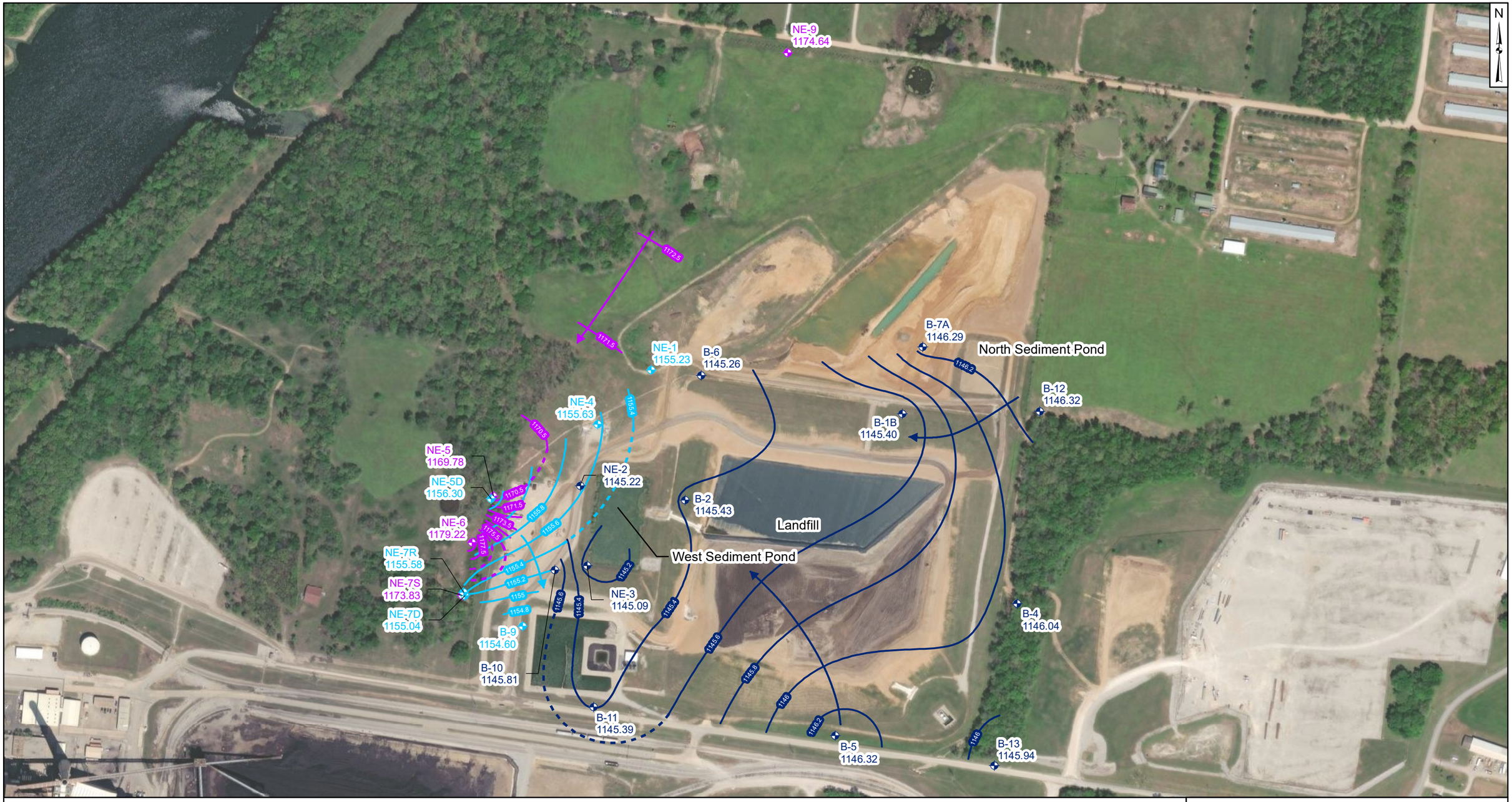
Notes:
1. Combined radium values were calculated from the sum of the reported radium-226 and radium-228 results.
Radium data quality flags were not included. Reported negative radium-226 or radium-228 results were replaced with zero.
--: Not analyzed
<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.
In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.
B1: Analyte detected in method blank (MB) at or above the method criteria.
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.
L1: The associated laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) recovery was outside acceptance limits.
M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
mg/L: milligrams per liter
P1: The precision between duplicate results was above acceptance limits.
P2: The precision on the laboratory control sample duplicate (LCSD) was above acceptance limits.
P3: The precision on the matrix spike duplicate (MSD) was above acceptance limits.
pCi/L: picocuries per liter
S7: Sample did not achieve constant weight.
SU: standard unit
µg/L: micrograms per liter

Table 1: Residence Time Calculation Summary
Flint Creek Landfill

Geosyntec Consultants, Inc.

			2024-03		2024-04		2024-08	
CCR Management Unit	Monitoring Well	Well Diameter (inches)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)
Landfill	B-1B [3]	2.0	108	0.6	96	0.6	93	0.7
	B-2 [2]	2.0	36	1.7	12	5.0	9	6.5
	B-4 [1]	2.0	13	4.6	10	5.9	21	2.9
	B-5 [3]	2.0	42	1.5	40	1.5	26	2.4
	B-6 [2]	2.0	25	2.5	23	2.6	9	6.5
	B-7A [3]	2.0	110	0.6	102	0.6	87	0.7
	B-9 [2]	2.0	99	0.6	71	0.9	57	1.1
	B-10 [2]	2.0	190	0.3	147	0.4	163	0.4
	B-11 [2]	2.0	52	1.2	23	2.6	6	10.9
	B-12 [1]	2.0	39	1.6	24	2.6	46	1.3
	B-13 [1]	2.0	18	3.3	24	2.5	9	6.5

Notes:
[1] - Background Well
[2] - Downgradient Well
[3] - Crossgradient Well
[4] - Verification event



Monitoring Wells
- Shallow
- Intermediate
- Deep

Groundwater Elevation Contour
- Shallow
- Shallow, Inferred
- Shallow Flow Direction
- Intermediate
- Intermediate, Inferred
- Intermediate Flow Direction
- Deep
- Deep, Inferred
- Deep Flow Direction

Notes
1. Monitoring well coordinates and water level data (collected on March 4, 2024) provided by AEP.
2. Site features are based on information available in the Groundwater Monitoring Well Network for CCR Compliance (Terracon 2016) provided by AEP.
3. Groundwater elevation units are feet above mean sea level.
4. Well locations resurveyed and updated on February 2 and 3, 2023 (Datum: AR SP North NAD27 NGVD29).
5. Aerial basemap provided by ESRI, dated April 23, 2023.

200 100 0 200
Feet

Potentiometric Surface Map March 2024

AEP Flint Creek Plant - Landfill
Gentry, Arkansas

Geosyntec consultants

Columbus, Ohio | 2024/05/21

Figure 1

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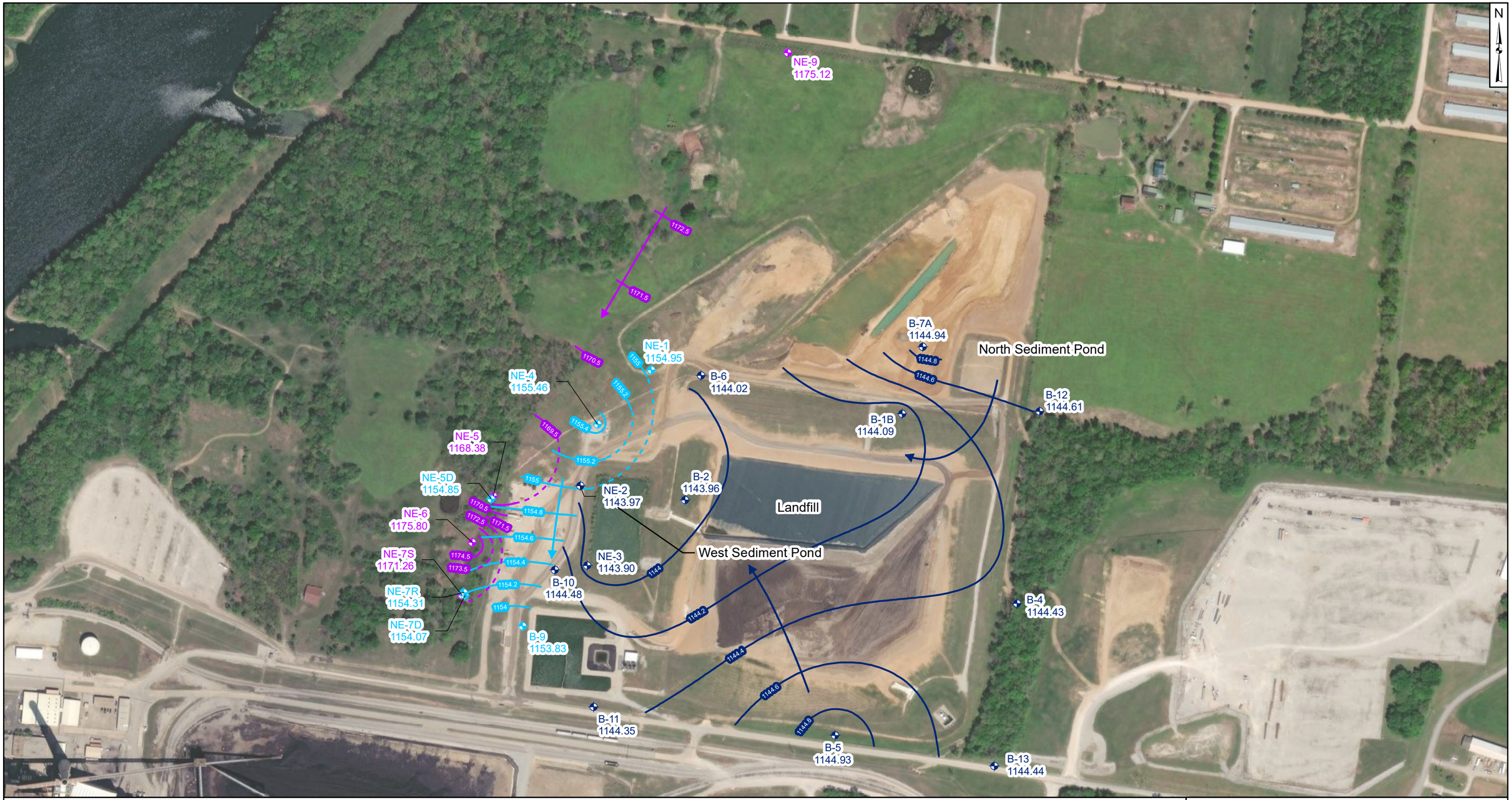


Monitoring Wells
- Shallow
- Intermediate
- Deep

Groundwater Elevation Contour
- Shallow
- Shallow, Inferred
- Shallow Flow Direction
- Intermediate
- Intermediate, Inferred
- Intermediate Flow Direction
- Deep
- Deep Flow Direction

Notes
1. Monitoring well coordinates and water level data were collected April 15 and 16, 2024, provided by AEP.
2. Site features are based on information available in the Groundwater Monitoring Well Network Evaluation (Terracon, 2017) provided by AEP.
3. Groundwater elevation units are feet above mean sea level (ft amsl).
4. Well locations resurveyed on February 2 and 3, 2023 (Datum: AR SP North NAD27, NGVD29).
5. Aerial basemap provided by ESRI, dated April 23, 2023.

250 125 0 250 Feet

Potentiometric Surface Map April 2024

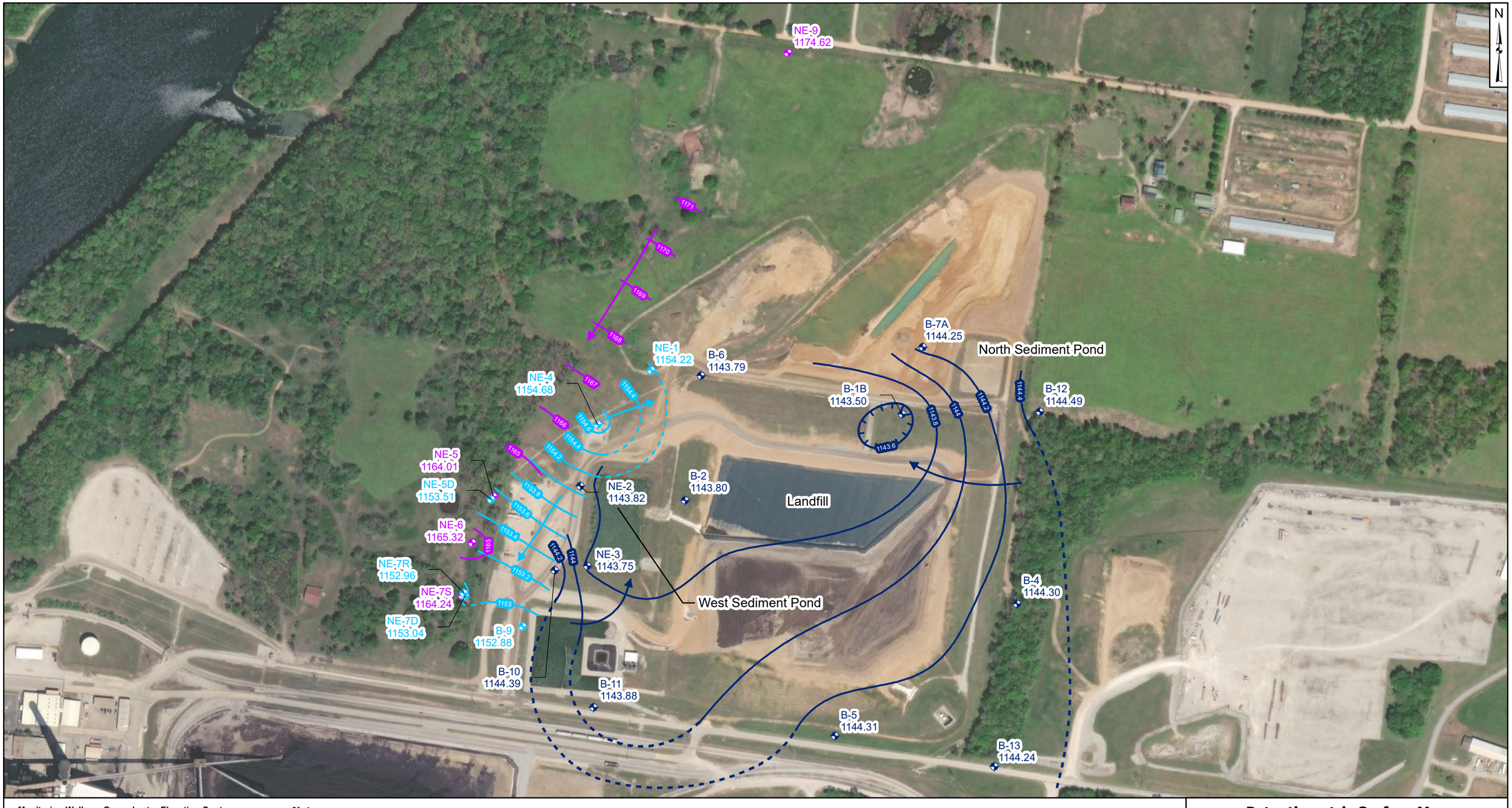
AEP Flint Creek Plant - Landfill
Gentry, Arkansas

Geosyntec consultants

Columbus, Ohio | 2024/07/22

Figure 2

A:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Flint Creek\Landfill\2024\AEP-Flint Creek_GW_Landfill_2024-04Apr.mxd. Okiemute.Commander. 7/22/2024. CHA8423/01/08.



Monitoring Wells
- Shallow
- Intermediate
- Deep

Groundwater Elevation Contour
- Shallow
- Shallow Flow Direction
- Intermediate
- Intermediate, Inferred
- Intermediate Flow Direction
- Deep
- Deep, Inferred
- Deep Flow Direction
- Groundwater Depression

Notes
1. Monitoring well coordinates and water level data were collected August 19 and 20, 2024, provided by AEP.
2. Site features are based on information available in the Groundwater Monitoring Well Network Evaluation (Terracon, 2017) provided by AEP.
3. Groundwater elevation units are feet above mean sea level (ft amsl).
4. Well locations resurveyed on February 2 and 3, 2023 (Datum: AR SP North NAD27, NGVD29).
5. Aerial basemap provided by ESRI, dated April 23, 2023.

250 125 0 250 Feet

Potentiometric Surface Map August 2024

AEP Flint Creek Plant - Landfill
Gentry, Arkansas

Geosyntec consultants

Columbus, Ohio | 2024/11/06

Figure 3

\\annarbor-01\Data\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Flint Creek\Landfill\2024\AEP-Flint Creek_GW_Landfill_2024-08Aug.mxd. ASoltero. 11/6/2024. CHA8423/01/08.

APPENDIX 2 - Statistical Analyses

The January, August, and December 2024 statistical analysis summaries follow.

Geosyntec consultants

engineers | scientists | innovators

STATISTICAL ANALYSIS SUMMARY

Flint Creek Plant Landfill

Gentry, Arkansas

Prepared for

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Columbus, Ohio 43215-2372

Prepared by

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Project Number: CHA8500B

January 15, 2024

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Attachment B: Statistical Analysis Output

ACRONYMS AND ABBREVIATIONS

CCR	coal combustion residuals
CFR	Code of Federal Regulations
GWPS	groundwater protection standard
LPL	lower prediction limit
mg/L	milligrams per liter
PQL	practical quantitation limit
QA/QC	quality assurance and quality control
SSI	statistically significant increase
SSL	statistically significant level
TDS	total dissolved solids
UPL	upper prediction limit

1. INTRODUCTION

In accordance with United States Environmental Protection Agency regulations regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (Code of Federal Regulations [CFR] Title 40, Section 257, Subpart D), groundwater monitoring has been conducted at the Landfill, an existing CCR unit at the Flint Creek Power Plant in Gentry, Arkansas. Recent groundwater monitoring results were used to identify concentrations of Appendix IV constituents that are above site-specific groundwater protection standards (GWPSs).

Based on detection monitoring conducted in 2017 and 2018, statistically significant increases (SSIs) over background were concluded for boron at the Landfill. An alternative source was not identified following the detection monitoring event, so the Landfill has been in assessment monitoring since 2018. A semiannual sampling event for Appendix III parameters and Appendix IV parameters, as required by 40 CFR 257.95(d)(1), was completed in September 2023. The results of the September 2023 assessment sampling event are documented in this report.

Before the statistical analyses were conducted, the groundwater data underwent several validation tests, including those for completeness, sample tracking accuracy, transcription errors, and consistent use of measurement units. No data quality issues that would impact data usability were identified.

The monitoring data were submitted to Groundwater Stats Consulting, LLC for statistical analysis. GWPSs were reestablished for the Appendix IV parameters following calculation of site-specific background values. Confidence intervals were calculated from the Appendix IV parameter data at the compliance wells to assess whether any were present at statistically significant levels (SSLs) above the corresponding GWPS. No SSLs were identified; however, concentrations of Appendix III parameters remained above background. Therefore, the unit will remain in assessment monitoring. Certification of the selected statistical methods by a qualified professional engineer is documented in Attachment A.

2. LANDFILL EVALUATION

2.1 Data Validation and QA/QC

One set of samples was collected for analysis from each upgradient and downgradient well to meet the requirements of 40 CFR 257.95(d)(1) in September 2023 as part of the assessment monitoring program. Samples from the September 2023 sampling event were analyzed for all Appendix IV and Appendix III parameters. A summary of data collected during this assessment monitoring event is presented in Table 1.

Chemical analysis was completed by a National Environmental Laboratory Accreditation Program–certified analytical laboratory. The laboratory completed analysis of quality assurance and quality control (QA/QC) samples such as laboratory reagent blanks, continuing calibration verification samples, and laboratory fortified blanks.

The analytical data were imported into a Microsoft Access database, where checks were completed to assess the accuracy of sample location identification and analyte identification. Where necessary, unit conversions were applied to standardize reported units across all sampling events. Exported data files were created for use with the Sanitas v.10.0.15 statistics software. The export file was checked against the analytical data for transcription errors and completeness. No QA/QC issues that would impact data usability were noted.

2.2 Statistical Analysis

Statistical analyses for the Landfill were conducted in accordance with the October 2020 *Statistical Analysis Plan* (Geosyntec 2020). Time series plots and results for all completed statistical tests are provided in Attachment B.

The data obtained in September 2023 were screened for potential outliers. No outliers were identified in the data (Attachment B).

2.2.1 Establishment of GWPSs

A GWPS was established for each Appendix IV parameter in accordance with 40 CFR 257.95(h) and the Statistical Analysis Plan (Geosyntec 2020). The established GWPS was determined to be the greater value of the background concentration and either the maximum contaminant level or risk-based level specified in 40 CFR 257.95(h)(2) for each Appendix IV parameter. To determine background concentrations, an upper tolerance limit was calculated using pooled data from the background wells collected during the background monitoring and assessment monitoring events. GWPSs were previously established in January 2023 (Geosyntec 2023); this evaluation incorporated data from the March 2023, June 2023, and September 2023 assessment monitoring events.

Tolerance limits were calculated parametrically with 95% coverage and 95% confidence for cobalt. Nonparametric tolerance limits were calculated for arsenic, barium, beryllium, cadmium, chromium, combined radium, fluoride, lead, lithium, and selenium due to apparent non-normal distributions. Nonparametric tolerance limits were calculated for antimony, mercury, molybdenum, and thallium because greater than 50% of the data was composed of nondetect results. Upper tolerance limits and the final GWPSs are summarized in Table 2.

2.2.2 Evaluation of Potential Appendix IV SSLs

A confidence interval was constructed for each Appendix IV parameter at each compliance well. Confidence limits were generally calculated parametrically ($\alpha = 0.01$); however, nonparametric confidence limits were calculated in some cases (e.g., when the data were not normally distributed or when the nondetect frequency was too high). An SSL was concluded if the lower confidence limit was above the GWPS (i.e., if the entire confidence interval was above the GWPS). The calculated confidence limits (Attachment B) were compared to the GWPSs provided in Table 2.

No SSLs were identified at the Landfill.

2.2.3 Updating Appendix III Prediction Limits

Upper prediction limits (UPLs) were originally established for all Appendix III parameters following the background monitoring period (Geosyntec 2018). Intrawell tests were used to evaluate potential SSIs for calcium, chloride, fluoride, pH, sulfate, and total dissolved solids (TDS), whereas an interwell test was used to evaluate potential SSIs for boron. Prediction limits have been updated periodically during the assessment monitoring period as sufficient data became available.

Mann-Whitney (Wilcoxon rank-sum) tests were performed to determine whether the newer data are affected by a release from the Landfill. Because the interwell Appendix III limits and the Appendix IV GWPSs are based on data from upgradient wells which we would not expect to have been impacted by a release, these tests were used for intrawell Appendix III tests only. Mann-Whitney tests were used to compare the medians of historical data (May 2016 – June 2021) to the new compliance samples (September 2021 – June 2023) for calcium, chloride, fluoride, pH, sulfate, and TDS. Results were evaluated to determine if the medians of the two groups were statistically different at the 99% confidence level. Where no statistically significant difference was found, the new compliance data were added to the background dataset. Where a statistically significant difference was found between the medians of the two groups, the data were reviewed to evaluate the cause of the difference and to determine if adding newer data to the background dataset, truncating historical data and using only the newer data, or continuing to use the existing background dataset was most appropriate. If the differences appeared to have been caused by a release, then the previous background dataset would have continued to be used.

The complete Mann-Whitney test results and a summary of the significant findings can be found in Attachment B.

For upgradient well/parameter pairs with statistically significant decreases, the magnitudes of the differences were minimal, and decreases resulted from historic nondetect values compared to recent trace values or detections below the reporting limit. The background datasets for all upgradient wells were updated because these data represent naturally occurring groundwater quality not impacted by a release. For sulfate in upgradient well B-5, observations suggest recent concentrations have stabilized; therefore, the background dataset was updated to include recent data and truncate earlier concentrations.

For downgradient well/parameter pairs with statistically significant decreases for fluoride, the magnitudes of the differences were minimal, and decreases resulted from historic nondetect values compared to recent trace values or detections below the reporting limit. For pH in downgradient

well B-6 and chloride in downgradient well B-10, recent values were comparable to historic and background concentrations. Thus, the background datasets were updated to include all available data through June 2023. For sulfate in downgradient well B-9, recent concentrations have stabilized, similar to those observed in upgradient well B-5; therefore, the background dataset was updated to include recent data and truncate earlier concentrations.

Prediction limits for the interwell tests were recalculated using data collected during the 2023 assessment monitoring events. New upgradient well data were tested for outliers prior to being added to the background dataset. Upgradient well data were also evaluated for statistically significant trends using the Sen's Slope/Mann-Kendall trend test, and the results are included in Attachment B. The revised interwell prediction limits were used to evaluate potential SSIs for boron.

After the revised background set was established, a parametric or nonparametric analysis was selected based on the distribution of the data and the frequency of nondetect data. Estimated results less than the reporting limit (practical quantitation limit, [PQL]) but above the method detection limit – i.e., "J-flagged" data – were considered detections and the estimated results were used in the statistical analyses. Nonparametric analyses were selected for datasets with at least 50% non-detect data or datasets that could not be normalized by transformation. Parametric analyses were selected for datasets (either transformed or untransformed) that passed the Shapiro-Wilk / Shapiro-Francía test for normality. The Kaplan-Meier non-detect adjustment was applied to datasets with between 15% and 50% non-detect data. For datasets with fewer than 15% nondetect data, nondetect data were replaced with one half of the PQL. The selected analysis (i.e., parametric or nonparametric) and transformation (where applicable) for each background dataset are shown in Attachment B.

The interwell UPL for boron was updated using all historical data through September 2023 to represent the background value. The updated interwell prediction limit for boron and intrawell prediction limits for calcium, chloride, fluoride, pH, sulfate, and TDS are summarized in Table 3. The UPLs were calculated for a one-of-two retesting procedure; i.e., if at least one sample in a series of two does not exceed the UPL, or in the case of pH, is neither less than the lower prediction limit (LPL) nor greater than the UPL, then it can be concluded that an SSI has not occurred. In practice, where the initial result does not exceed the UPL, or in the case of pH, is neither less than the LPL nor greater than the UPL, a second sample will not be collected. The retesting procedures allow achieving an acceptably high statistical power to detect changes at downgradient wells for constituents evaluated using intrawell prediction limits.

2.2.4 Evaluation of Potential Appendix III SSIs

The Appendix III results were analyzed to assess whether concentrations of Appendix III parameters at the compliance wells were above background concentrations. Data collected during the September 2023 assessment monitoring event from each compliance well were compared to updated prediction limits to assess whether the results were statistically above background limits. The results from these events and the prediction limits are summarized in Table 3. The following exceedances of the UPLs were noted:

- Boron concentrations were above the interwell UPL of 0.107 milligrams per liter (mg/L) at B-2 (0.292 mg/L) and at B-11 (0.364 mg/L).

- Calcium concentrations were above the intrawell UPL of 19.8 mg/L at B-11 (22.4 mg/L).
- Chloride concentrations were above the intrawell UPL of 9.82 mg/L at B-11 (19.5 mg/L).

While the prediction limits were calculated for a one-of-two retesting procedure, SSIs were conservatively assumed if the September 2023 sample was above the UPL or, in the case of pH, below the LPL. Based on this evaluation, concentrations of Appendix III constituents appear to be above background concentrations, and the unit will remain in assessment monitoring.

2.3 Conclusions

A semiannual assessment monitoring event was conducted in accordance with the CCR Rule. The laboratory and field data were reviewed prior to statistical analysis, with no QA/QC issues identified that prevented data usage. A review of outliers identified no potential outliers in the September 2023 data. GWPSs were re-established for the Appendix IV parameters. A confidence interval was constructed at each compliance well for each Appendix IV parameter; SSLs were concluded if the entire confidence interval was above the GWPSs. No SSLs were identified. Appendix III parameters were compared to updated prediction limits; concentrations of boron, calcium, and chloride were identified above the prediction limits.

Based on this evaluation, the Landfill CCR unit will remain in assessment monitoring.

3. REFERENCES

Geosyntec. 2018. *Statistical Analysis Summary – Landfill, Flint Creek Plant, Gentry, Arkansas.* Geosyntec Consultants, Inc. January.

Geosyntec. 2020. *Statistical Analysis Plan – Flint Creek Plant*. Geosyntec Consultants, Inc. October.

Geosyntec. 2023. *Statistical Analysis Summary – Landfill, Flint Creek Plant, Gentry, Arkansas*. Geosyntec Consultants, Inc. January.

TABLES

Table 1. Groundwater Data Summary
Statistical Analysis Summary
Flint Creek Plant - Landfill

Parameter	Unit	B-1B	B-2	B-4	B-5	B-6	B-7A	B-9	B-10	B-11	B-12	B-13
		9/19/2023	9/18/2023	9/18/2023	9/19/2023	9/18/2023	9/19/2023	9/19/2023	9/19/2023	9/19/2023	9/18/2023	9/19/2023
Antimony	µg/L	0.013 J1	0.018 J1	0.010 J1	0.014 J1	0.021 J1	0.027 J1	0.035 J1	0.259	0.019 J1	0.126	0.032 J1
Arsenic	µg/L	0.26	0.15	0.06 J1	0.38	0.25	9.83	0.49	0.83	0.24	0.1	0.1
Barium	µg/L	101	63.7	45.2	18.0	59.3	29.2	169	85.1	107	54.9	57.5
Beryllium	µg/L	0.019 J1	0.057	0.107	0.469	0.030 J1	0.011 J1	0.05 U1	0.049 J1	0.166	0.009 J1	0.042 J1
Boron	mg/L	0.012 J1	0.292	0.030 J1	0.009 J1	0.044 J1	0.014 J1	0.012 J1	0.014 J1	0.364	0.017 J1	0.028 J1
Cadmium	µg/L	0.015 J1	0.021	0.022	0.152	0.015 J1	0.007 J1	0.009 J1	0.052	0.062	0.024	0.041
Calcium	mg/L	84.2	26.8	29.9	14.2	50.5	92.4	91.2	81.2	22.4	57.9	18.9
Chloride	mg/L	2.18	3.21	4.79	9.40	7.83	2.98	6.85	11.3	19.5	7.06	3.58
Chromium	µg/L	0.35	1.47	0.86	2.44	1.63	0.36	0.87	3.44	1.34	0.92	0.76
Cobalt	µg/L	0.040	0.082	0.040	0.216	0.195	0.245	0.407	1.51	0.125	2.54	0.051
Combined Radium	pCi/L	6.82	2.09	0.87	0.56	0.47	1.74	0.79	0.68	0.99	0.96	0.61
Fluoride	mg/L	0.34	0.07	0.03 J1	0.06	0.03 J1	0.17	0.07	0.15	0.04 J1	0.04 J1	0.03 J1
Lead	µg/L	0.07 J1	0.08 J1	0.2 U1	0.17 J1	0.25	0.07 J1	0.12 J1	0.73	0.16 J1	0.08 J1	0.2 U1
Lithium	mg/L	0.0244	0.00132	0.00084	0.00226	0.00063	0.0179	0.00299	0.00225	0.00141	0.00146	0.00047
Mercury	µg/L	0.005 U1	0.005 U1	0.005 U1	0.006	0.005 U1	0.004 J1	0.005 U1	0.003 J1	0.005 U1	0.005 U1	0.005 U1
Molybdenum	µg/L	0.7	0.6	0.5 U1	0.5 U1	0.4 J1	0.1 J1	0.3 J1	1.8	0.5 U1	0.4 J1	0.4 J1
Selenium	µg/L	0.5 U1	3.60	0.32 J1	33.0	2.04	0.5 U1	0.48 J1	0.61	2.35	0.22 J1	0.48 J1
Sulfate	mg/L	21.1	45.3	4.4	250	25.1	33.1	38.5	33.7	42.7	10.5	14.1
Thallium	µg/L	0.2 U1	0.02 J1	0.2 U1	0.04 J1	0.2 U1	0.2 U1	0.2 U1	0.04 J1	0.02 J1	0.02 J1	0.04 J1
Total Dissolved Solids	mg/L	280	190	120	430	230	300	280	290	170	230	81
pH	SU	7.4	5.6	6.2	5.6	6.1	7.4	7.0	6.9	6.3	6.4	5.7

Notes:

J1: estimated value. Parameter was detected in concentrations below the reporting limit.

mg/L: milligrams per liter

pCi/L: picocuries per liter

SU: standard unit

U1: non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.

µg/L: micrograms per liter

Table 2. Appendix IV Groundwater Protection Standards
Statistical Analysis Summary
Flint Creek Plant – Landfill

Constituent Name	MCL	CCR Rule-Specified	Calculated UTL	GWPS
Antimony, Total (mg/L)	0.00600		0.00452	0.00600
Arsenic, Total (mg/L)	0.0100		0.00983	0.0100
Barium, Total (mg/L)	2.00		0.131	2.00
Beryllium, Total (mg/L)	0.00400		0.00100	0.00400
Cadmium, Total (mg/L)	0.00500		0.00100	0.00500
Chromium, Total (mg/L)	0.100		0.00600	0.100
Cobalt, Total (mg/L)	n/a	0.00600	0.00518	0.00600
Combined Radium, Total (pCi/L)	5.00		8.79	8.79
Fluoride, Total (mg/L)	4.00		0.596	4.00
Lead, Total (mg/L)	n/a	0.0150	0.00389	0.0150
Lithium, Total (mg/L)	n/a	0.0400	0.0410	0.0410
Mercury, Total (mg/L)	0.00200		0.0000960	0.00200
Molybdenum, Total (mg/L)	n/a	0.100	0.00466	0.100
Selenium, Total (mg/L)	0.0500		0.0392	0.0500
Thallium, Total (mg/L)	0.00200		0.00199	0.00200

Notes:
1. Calculated UTL (upper tolerance limit) represents site-specific background values.
2. Gray cells indicate the GWPS is based upon calculated UTL, which is higher than the MCL or CCR Rule-Specified value.
CCR: coal combustion residuals
GWPS: groundwater protection standard
MCL: maximum contaminant level
mg/L: milligrams per liter
pCi/L: picocuries per liter

Table 3. Appendix III Data Summary
Flint Creek Plant - Landfill

Geosyntec Consultants, Inc.

Analyte	Unit	Description	B-2	B-6	B-9	B-10	B-11
			9/18/2023	9/18/2023	9/19/2023	9/19/2023	9/19/2023
Boron	mg/L	Interwell Background Value (UPL)	0.107				
		Analytical Result	**0.292**	0.044	0.012	0.014	**0.364**
Calcium	mg/L	Intrawell Background Value (UPL)	50.4	58.5	130	116	19.8
		Analytical Result	26.8	50.5	91.2	81.2	**22.4**
Chloride	mg/L	Intrawell Background Value (UPL)	8.88	8.70	7.78	12.4	9.82
		Analytical Result	3.21	7.83	6.85	11.3	**19.5**
Fluoride	mg/L	Intrawell Background Value (UPL)	0.200	0.207	0.356	0.330	0.200
		Analytical Result	0.07	0.03	0.07	0.15	0.04
pH	SU	Intrawell Background Value (UPL)	6.9	7.3	8.1	8.3	6.9
		Intrawell Background Value (LPL)	5.1	5.9	6.3	6.1	5.0
		Analytical Result	5.6	6.1	7.0	6.9	6.3
Sulfate	mg/L	Intrawell Background Value (UPL)	195	42.9	44.5	35.8	62.6
		Analytical Result	45.3	25.1	38.5	33.7	42.7
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	522	271	315	301	190
		Analytical Result	190	230	280	290	170

Notes:
1. Bold values exceed the background value.
2. Background values are shaded gray.
LPL: lower prediction limit
mg/L: milligrams per liter
SU: standard units
UPL: upper prediction limit

ATTACHMENT A
Certification by Qualified Professional Engineer

Certification by Qualified Professional Engineer

I certify that selected and above described statistical method is appropriate for evaluating the groundwater monitoring data for the Flint Creek Landfill CCR management area and that the requirements of 40 CFR 257.93(f) have been met.

David Anthony Miller

Printed Name of Licensed Professional Engineer

Signature

15296	Arkansas	01.16.2024
License Number	Licensing State	Date

ATTACHMENT B
Statistical Analysis Output

GROUNDWATER STATS CONSULTING

December 13, 2023

Geosyntec Consultants
Attn: Ms. Allison Kreinberg
500 W. Wilson Bridge Road, Suite 250
Worthington, OH 43085

Re: Flint Creek Landfill - Assessment Monitoring & Background Update 2023

Dear Ms. Kreinberg,

Groundwater Stats Consulting (GSC), formerly the statistical consulting division of Sanitas Technologies, is pleased to provide statistical analysis and background update of 2023 groundwater data for American Electric Power Inc.'s Flint Creek Landfill. The analysis complies with the federal rule for the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities (CCR Rule, 2015) as well as with the United States Environmental Protection Agency (USEPA) Unified Guidance (2009).

Sampling began at the site for the CCR program in 2016. The monitoring well network, as provided by Geosyntec Consultants, consists of the following:

- **Upgradient wells:** B-1B, B-4, B-5, B-7A, B-12, and B-13
- **Downgradient wells:** B-2, B-6, B-9, B-10, and B-11

Data were sent electronically, and the analysis was reviewed by Kristina Rayner, Founder and Senior Statistician for Groundwater Stats Consulting. The statistical analysis was conducted according to the Statistical Analysis Plan and screening evaluation prepared by GSC and approved by Dr. Kirk Cameron, PhD Statistician with MacStat Consulting, primary author of the USEPA Unified Guidance, and Senior Advisor to GSC.

The CCR program consists of the following constituents listed below. The terms "constituent" and "parameter" are interchangeable.

- **Appendix III** (Detection Monitoring) **-** boron, calcium, chloride, fluoride, pH, sulfate, and TDS
- **Appendix IV** (Assessment Monitoring) **–** antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium 226 + 228, fluoride, lead, lithium, mercury, molybdenum, selenium, and thallium

Note that Appendix III parameters were not sampled during the March 2023 event and well B-11 was not sampled during the June 2023 event. All wells and constituents were sampled during the September 2023 event.

Time series plots and box plots for Appendix III and IV parameters are provided for all wells (Figures A and B, respectively). Values which have been flagged as outliers may be seen in a lighter font and as a disconnected symbol on the time series plots. A summary of flagged values follows this letter (Figure C). The time series plots are used to evaluate concentrations over time and between wells, to initially screen for suspected outliers and trends, while the box plots provide visual representation of variation within individual wells and between wells.

For regulatory comparison of current observations against statistical limits for Appendix III constituents, the annual site-wide false positive rate is based on the USEPA Unified Guidance (2009) recommendation of 10% (5% for each semi-annual sample event). Power curves were included with the previous screening report and demonstrated that the selected statistical method provides sufficient power to detect a change at any of the downgradient wells which complies with the USEPA Unified Guidance recommendation. The EPA suggests the selected statistical method should provide at least 55% power at 3 standard deviations or at least 80% power at 4 standard deviations. Power curves were based on the following:

Semi-Annual Sampling
1-of-2 resample plan
Constituents, c=7
Downgradient wells, w=5

Summary of Statistical Methods – Appendix III Parameters:

1) Intrawell prediction limits, combined with a 1-of-2 resample plan for calcium, chloride, fluoride, pH, sulfate, and TDS
2) Interwell prediction limits, combined with a 1-of-2 resample plan for boron

Parametric prediction limits are utilized when the screened historical data follow a normal or transformed-normal distribution. When data cannot be normalized or the majority of data are non-detects, a nonparametric test is utilized. While the annual false positive rate associated with parametric limits is fixed at 10% as recommended by the EPA Unified Guidance (2009), the false positive rate associated with nonparametric limits is not fixed and depends upon the available background sample size, number of future comparisons, and verification resample plan. The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (US EPA, 2009), data are analyzed using either parametric or non-parametric prediction limits as appropriate. Non-detects are handled as follows:

- No statistical analyses are required on wells and analytes containing 100% non-detects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% non-detects, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for non-detects is the most recent practical quantification limit (PQL) as reported by the laboratory.
- When data contain between 15-50% non-detects, the Kaplan-Meier non-detect adjustment is applied to the background data for parametric limits. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric prediction limits are used on data containing greater than 50% non-detects.

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits is necessary to accommodate these types of changes. In the intrawell case, data for all wells and constituents may be re-evaluated when a minimum of 4 new data points are available to determine whether earlier concentrations are representative of present-day groundwater quality. In the interwell case, prediction limits are updated with upgradient well data following each sampling event after careful screening for any new outliers. In some cases, deselecting the earlier portion of data may be necessary prior to construction of limits so

that resulting statistical limits are conservative (i.e., lower) from a regulatory perspective and capable of rapidly detecting changes in groundwater quality. Even though the data are excluded from the calculation, the values will continue to be reported and shown in tables and graphs.

Summary of Background Screening Conducted in November 2017

Interwell prediction limits combined with a 1-of-2 verification strategy were recommended for boron; and intrawell prediction limits combined with a 1-of-2 verification strategy were recommended for calcium, chloride, fluoride, pH, sulfate, and TDS. All proposed background data were screened for outliers and trends during the background screening. The findings of those reports were submitted with that analysis. Interwell prediction limits utilize pooled upgradient well data for construction of statistical limits. During each sample event, upgradient well data are screened for any newly suspected outliers or obvious trending patterns using time series plots. Intrawell prediction limits utilize historical data within a given well for comparison of compliance data from the same well. As recommended in the EPA Unified Guidance (2009), the background data sets are periodically evaluated for the purpose of updating statistical limits, as described below.

Appendix III Background Update Summary

December 2023

<u>Outlier Analysis</u>

Prior to updating background data, Tukey's outlier test and visual screening were used to re-evaluate data through June 2023 for outliers at all wells for parameters using intrawell prediction limits, i.e., calcium, chloride, fluoride, pH, sulfate, and TDS and through September 2023 for outliers at all upgradient wells for parameters utilizing interwell prediction limits, i.e., boron.

For parameters which use intrawell prediction limits, Tukey's outlier test did not identify any outliers; however, visual screening confirmed previously flagged values with the exception of an elevated observation for chloride at B-4. Because sufficient observations at a lower concentration have been recorded for this well/constituent pair since the elevated reported value on 10/23/2018 are available to establish a conservative limit with at least 8 observations in background, this value was unflagged and truncated with the remaining elevated concentrations. Visual screening identified an outlier for sulfate at

B-2. Although this elevated observation was similar to concentrations found early in the record, this value was flagged in order to maintain statistical limits that are conservative from a regulatory perspective. No additional outliers were flagged during this analysis.

Tukey's outlier test on pooled upgradient well data identified high values for boron; however, those values were all reported at similar concentrations and were not dramatically higher than the remaining observations. Therefore, no values were flagged in upgradient wells for boron based on Tukey's outlier test or visual screening. Tukey's outlier test results for all Appendix III parameters are shown in Figure C. A list of flagged outliers follows this report.

Intrawell - Mann-Whitney Evaluation

For constituents requiring intrawell prediction limits, the Mann-Whitney (Wilcoxon Rank Sum) test was used to compare the medians of historical data through June 2021 to the new compliance samples through June 2023 at each well to evaluate whether the groups are statistically different at the 99% confidence level. When no statistically significant difference is found, background data may be updated with compliance data. Statistically significant differences (either an increase or decrease in median concentrations) were found between the two groups for the following well/constituent pairs:

Increase:

- Chloride: B-10
- Sulfate: B-5 (upgradient) and B-9

Decrease:

- Calcium: B-12, B-1B, and B-5 (all upgradient)
- Fluoride: B-12, B-5, and B-7A (all upgradient), B-10, B-2, and B-9
- pH: B-6

Typically, when the test concludes that the medians of the two groups are statistically significantly different, particularly in the downgradient wells, the background data are not updated to include the newer data, unless it can be reasonably justified that the change in concentrations reflects a naturally occurring shift unrelated to practices at the site. In studies such as the current one, in which at least one of the segments being compared is of short duration, the comparison is complicated by the fact that normal short-term variation may be mistaken for long-term change in medians.

Regarding well/constituent pairs with statistically significant increases in medians, the record for chloride at B-10 was updated since compliance measurements were within the

range of background concentrations. For sulfate in upgradient well B-5 and downgradient well B-9 concentrations appear to have stabilized; therefore, the records were updated to use more recent data to construct statistical limits that are representative of present day-groundwater quality conditions and truncate earlier concentrations to eliminate the influence of an increasing trend. Although not significant at the 99% confidence level, median compliance concentrations for calcium at upgradient well B-4 were identified as significant at the 98% confidence level by the Mann-Whitney test when compared to the median concentrations of background data used for constructing statistical limits. Since these concentrations for this well/constituent pair are upgradient of the facility and compliance data resemble historic data prior to the truncated record, this well/constituent pair was not only updated with compliance data but earlier measurements were reintroduced for the purposes of constructing prediction limits.

For the well/constituent pairs with statistically significant decreases in medians, the group of more recent reported concentrations for calcium at upgradient wells B-12, B-1B, and B-5 and pH at downgradient well B-6 were predominately within the range of historic observations. Additionally, the statistically significant decrease in medians identified by the Mann-Whitney test for the following well/constituent pairs was a result of historic non-detect values in the earlier portion of the record being compared to more recent trace values or detections lower than the reporting limit in the latter part of the record:

- Fluoride: B-12, B-5, B-7A (all upgradient), B-10, B-2, and B-9

Therefore, these background datasets were updated through June 2023 for the above well/constituent pairs in order to construct statistical limits that are representative of present-day groundwater quality.

Interwell – Trend Test Evaluation

For boron, which is tested using interwell prediction limits, the Sen's Slope/Mann-Kendall trend test was used to test data in upgradient wells to determine whether concentrations are statistically increasing, decreasing or stable at the 99% confidence level. No statistically significant trends were identified; therefore, all data from upgradient wells were used to construct interwell prediction limits for boron. As more data are collected, all upgradient well data will be re-evaluated for possible deselection of earlier portion of the record if the measurements no longer represent present-day groundwater quality conditions.

Appendix III Parameters – September 2023

Prediction Limits

Intrawell limits constructed from carefully screened background data from within each well serve to provide statistical limits that are representative of the background data population, and that will rapidly identify a change in more recent compliance data from within a given well. The most recent sample from the same well is compared to its respective background. This statistical method removes the element of variation from across wells and eliminates the chance of mistaking spatial variation for a release from the facility. Intrawell prediction limits are updated when a minimum of 4 compliance samples are available. Intrawell prediction limits for calcium, chloride, fluoride, pH, sulfate, and TDS currently use all historical data through June 2023, unless otherwise noted above, and a summary table of the limits follows this report (Figure F).

Interwell prediction limits, which pool upgradient well data to establish a background limit for an individual constituent, were updated during this analysis after screening for additional outliers and trends. The interwell prediction limit for boron, combined with a 1-of-2 resample plan, was constructed using all pooled upgradient data through September 2023. The summary table follows this letter (Figure G).

In the event of an initial exceedance of compliance well data, the 1-of-2 resample plan allows for collection of one additional sample to determine whether the initial exceedance is confirmed. When the resample confirms the initial exceedance, a statistically significant increase (SSI) is identified, and further research is required to identify the cause of the exceedance (i.e., impact from the site, natural variation, or an off-site source). If a resample falls within the statistical limit, the initial exceedance is considered to be a false positive result; therefore, no further action is necessary.

Appendix IV Parameters – September 2023

Outlier Analysis

Prior to evaluating Appendix IV parameters, upgradient well data are screened through both visual screening and Tukey's outlier test for potential outliers and extreme trending patterns that would lead to artificially elevated statistical limits. All flagged values may be seen on the Outlier Summary following this letter (Figure C).

Tukey's outlier test identified outliers for barium, chromium, cobalt, combined radium 226 + 228, fluoride, lithium, and selenium when pooled upgradient well data were evaluated; however, many of these values were of similar concentration to one another and thus, were not flagged as outliers. The highest detected value for chromium in well B-12, the two highest detected values for cobalt in well B-12, and the high reporting limit for lithium at several wells during the June 2019 event remain flagged in the database as outliers as they did not appear to represent the population at these wells and do not represent current conditions.

For the current analysis, downgradient well data through September 2023 were screened through visual screening using time series graphs. Since the downgradient well data are used to construct confidence intervals, a regulatory conservative approach is taken in that values that are marginally high relative to the rest of the data are retained unless there is particular justification for excluding them. No additional outliers were flagged during this analysis, and no previously flagged outliers were unflagged. Several outliers were flagged during previous analyses for reasons listed below.

Several metals had higher reported concentrations in multiple wells during the September and November 2016 events which appear to be either a laboratory or sampling issue. Therefore, these values were flagged as outliers since they do not represent the population within these wells. Additionally, several reporting limits for the metals are significantly lower beginning in March 2019 than those reported historically. Non-detect values are not replaced with the most recent reporting limit in order to create conservative statistical limits from a regulatory perspective. As discussed previously, the reporting limit for lithium during the June 2019 event increased from a historical limit of 0.001 mg/L to 0.1 mg/L. Therefore, the high reporting limit was flagged as an outlier in all applicable wells as it is higher than any reported concentrations for lithium.

Interwell Upper Tolerance Limits

Upper tolerance limits were used to calculate background limits from pooled upgradient well data through September 2023 for Appendix IV parameters (Figure H). For parametric limits a target of 95% confidence and 95% coverage is used. The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples.

Groundwater Protection Standards

These background limits were compared to the Maximum Contaminant Levels (MCLs) and CCR Rule-Specified levels as shown in the Groundwater Protection Standard (GWPS) table following this letter to determine the highest limit for use as the GWPS in the confidence interval comparisons (Figure I).

Confidence Intervals

Confidence intervals were then constructed on downgradient wells using all data through September 2023 for each of the Appendix IV parameters (Figure J). The Sanitas software was used to calculate the confidence intervals, either parametric or nonparametric, as appropriate. The lower confidence limit, which is constructed with 99% confidence for parametric confidence intervals, is compared to the GWPS prepared as described above. The confidence level associated with nonparametric confidence intervals is dependent upon the number samples available. Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its respective standard. Complete graphical results of the confidence interval follow this letter. No exceedances were identified.

Trend Test Evaluation – Appendix IV

When confidence interval exceedances are identified in downgradient wells, data are further evaluated using the Sen's Slope/Mann Kendall trend test to determine whether concentrations are statistically increasing, decreasing, or stable at the 95% confidence level. Utilizing the 95% confidence level for trend tests readily identifies significant trends and is more sensitive than the 99% confidence level without drastically increasing the false negative rate. Upgradient wells are included in the trend analyses for all parameters found to exceed their prediction limit in downgradient wells. When similar patterns exist upgradient of the site, it is an indication of variability in groundwater which may be unrelated to practices at the site. Since no exceedances were identified, no trend tests were required.

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for the Flint Creek Landfill. If you have any questions or comments, please feel free to contact us.

For Groundwater Stats Consulting,

Andrew T. Collins
Project Manager

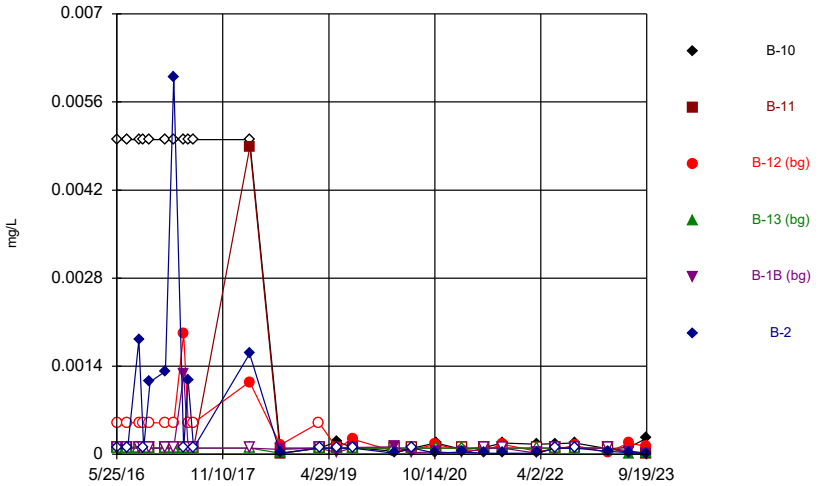
Kristina L. Rayner
Senior Statistician

FIGURE A

Time Series

Sanitas™ v.10.0.15 Software licensed to . UG
Hollow symbols indicate censored values.

Time Series



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Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG
Hollow symbols indicate censored values.

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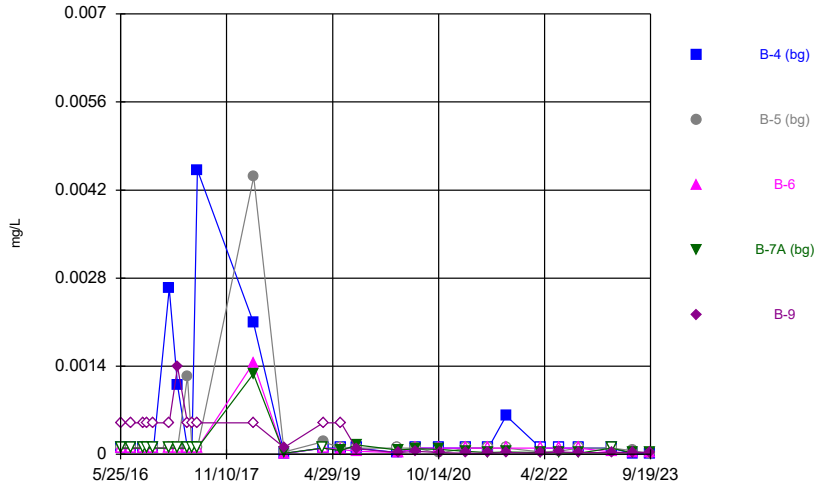

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Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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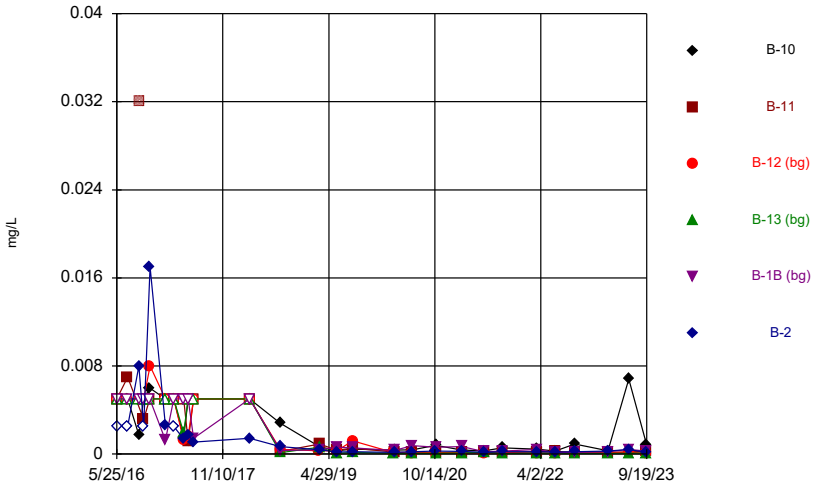

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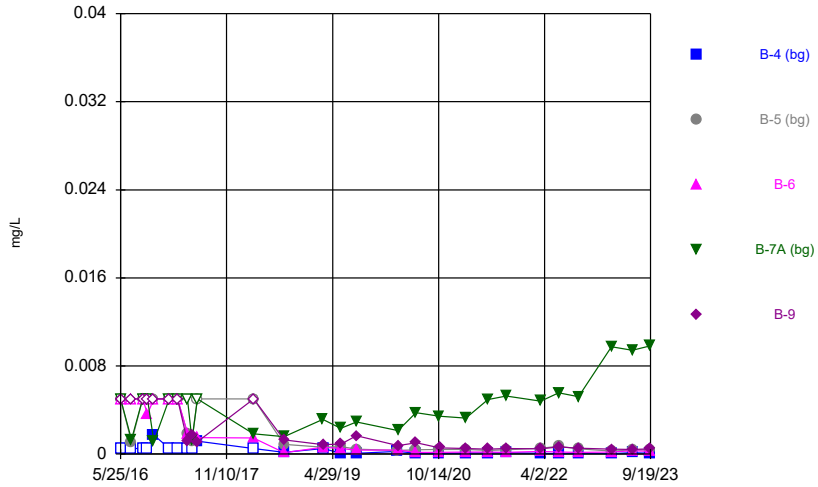

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Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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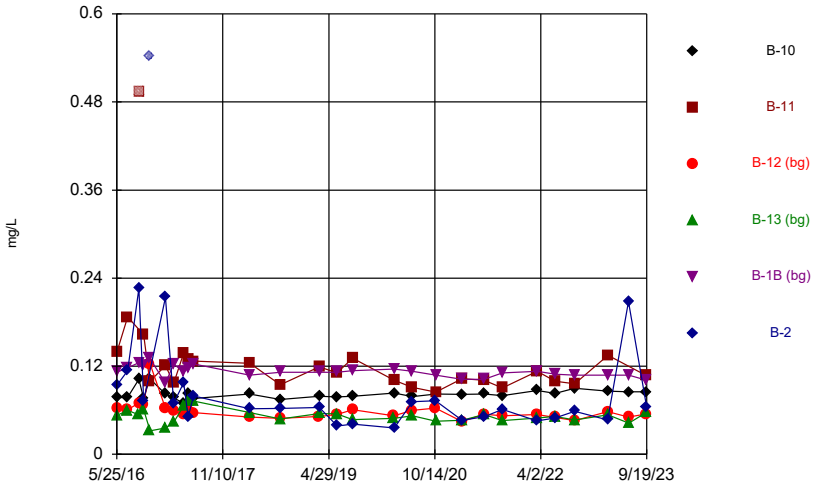

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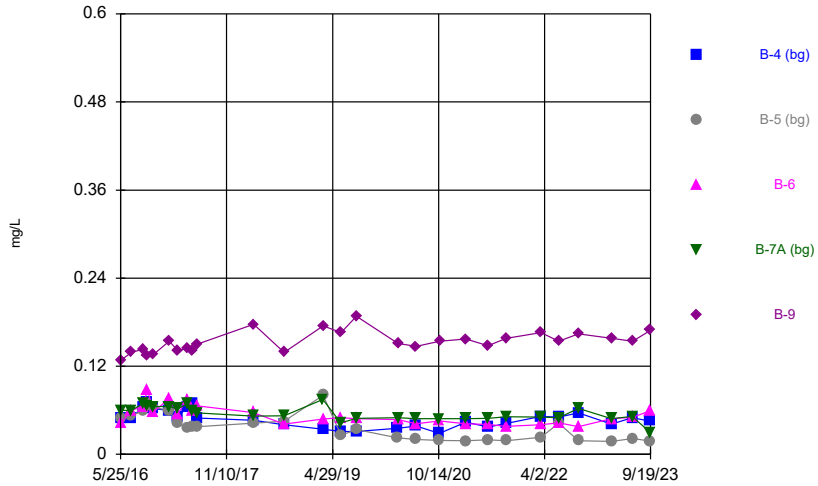
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG

Time Series



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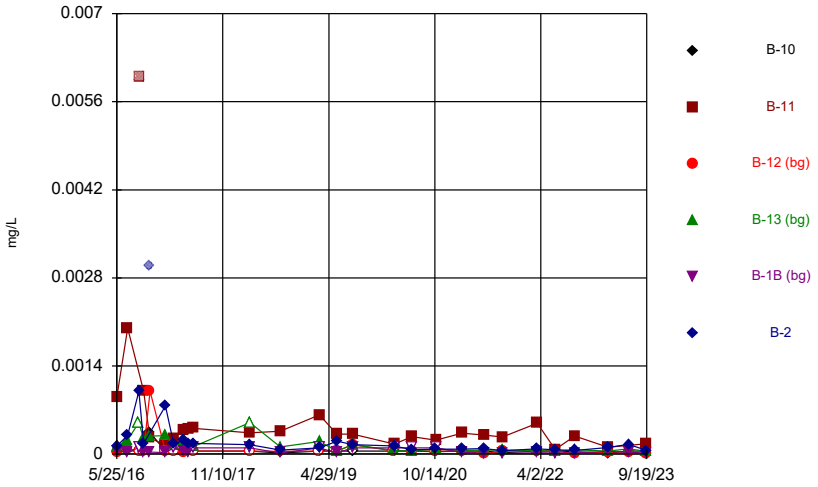
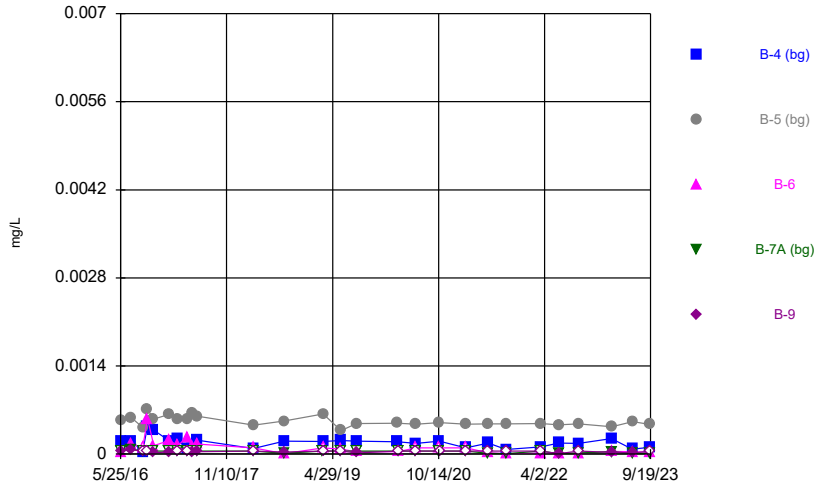


Constituent: Beryllium, total Analysis Run 12/13/2023 3:41 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG
Hollow symbols indicate censored values.

Time Series



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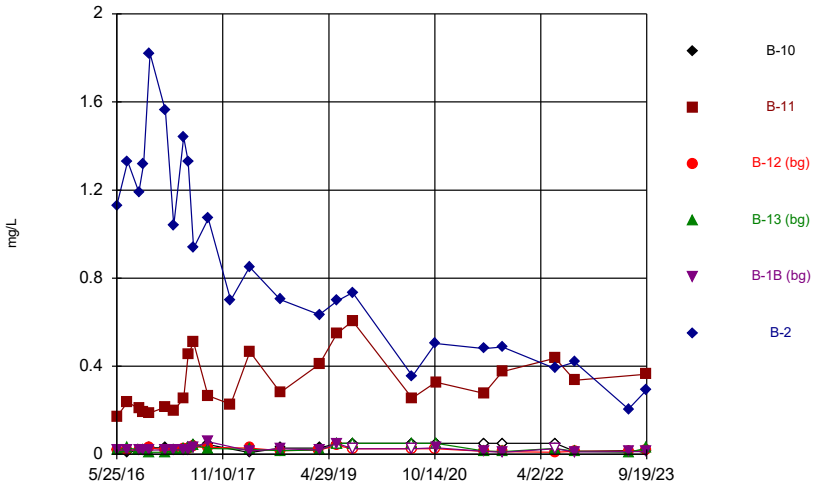

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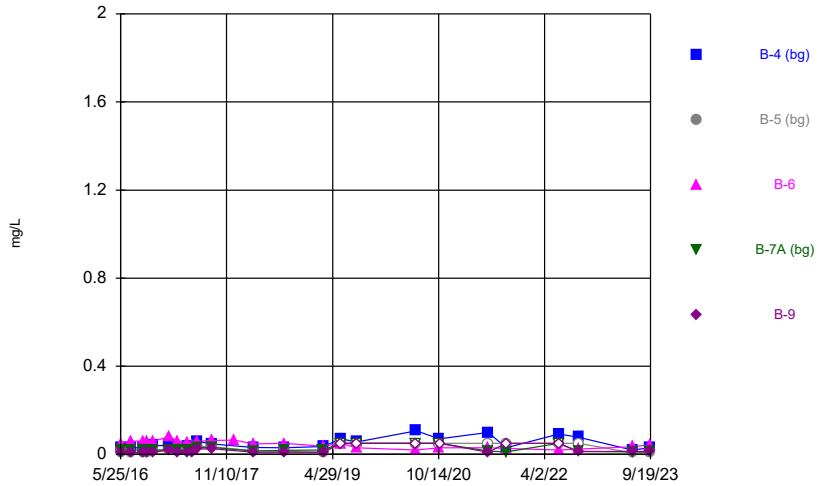

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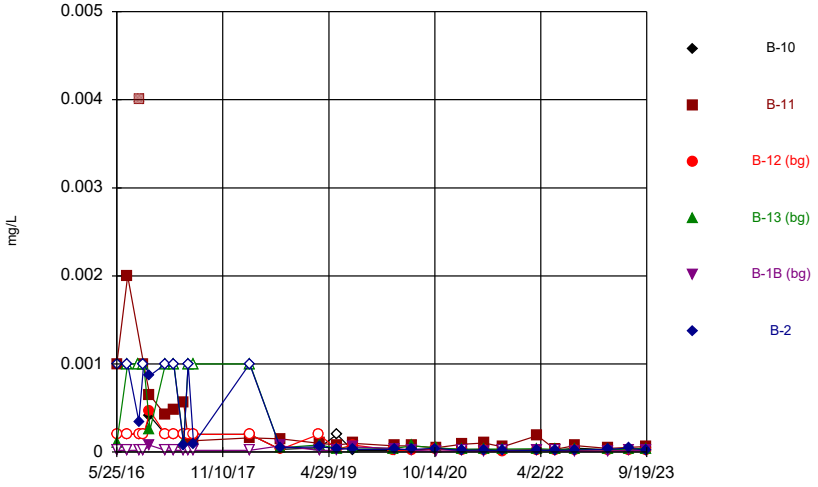

Constituent: Cadmium, total Analysis Run 12/13/2023 3:41 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG
Hollow symbols indicate censored values.

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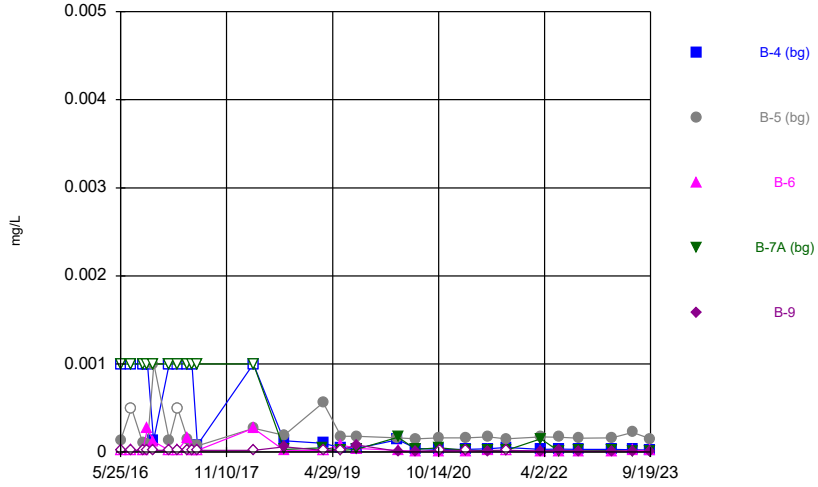

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Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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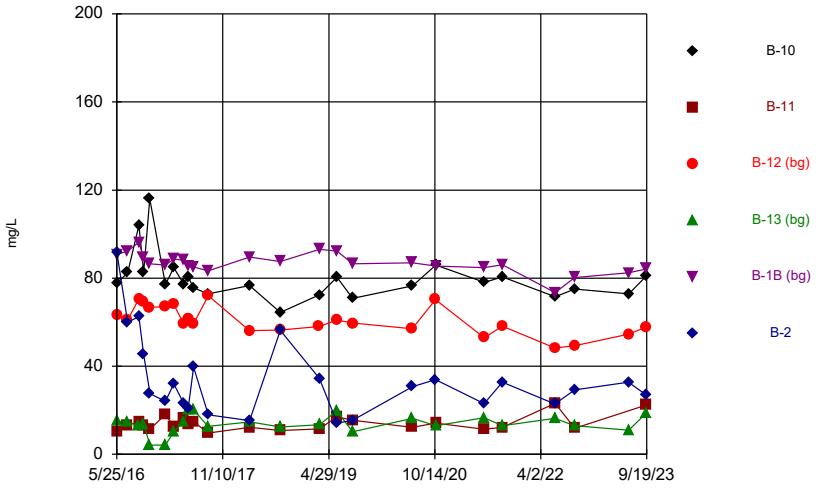

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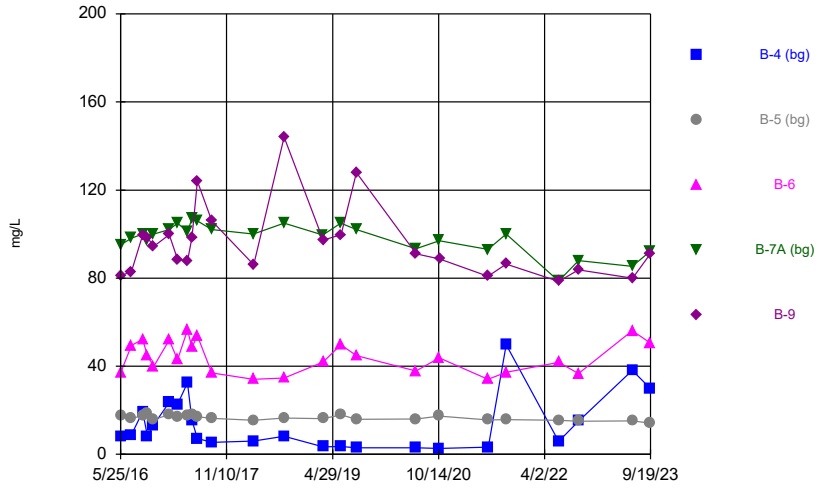
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG

Time Series



Constituent: Calcium, total Analysis Run 12/13/2023 3:41 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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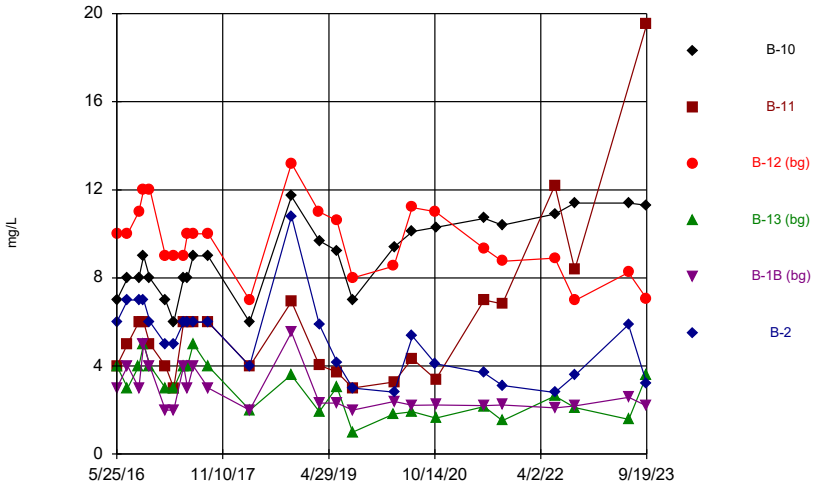
Time Series



Constituent: Chloride, total Analysis Run 12/13/2023 3:41 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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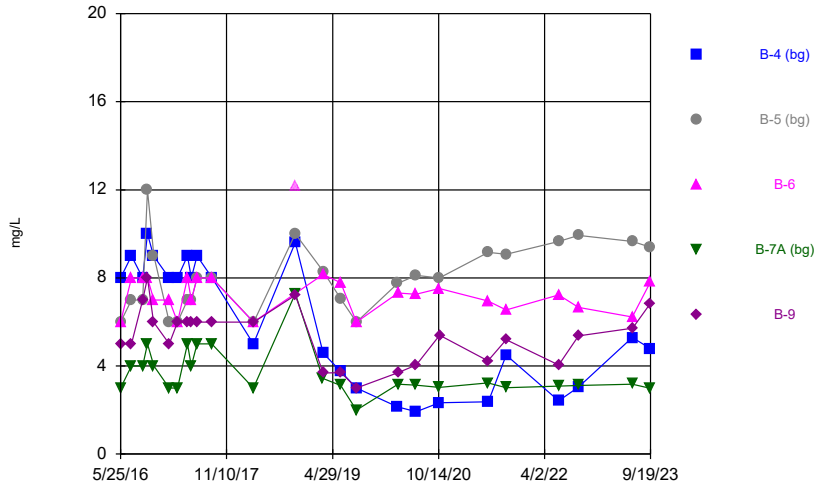
Time Series



Constituent: Chloride, total Analysis Run 12/13/2023 3:41 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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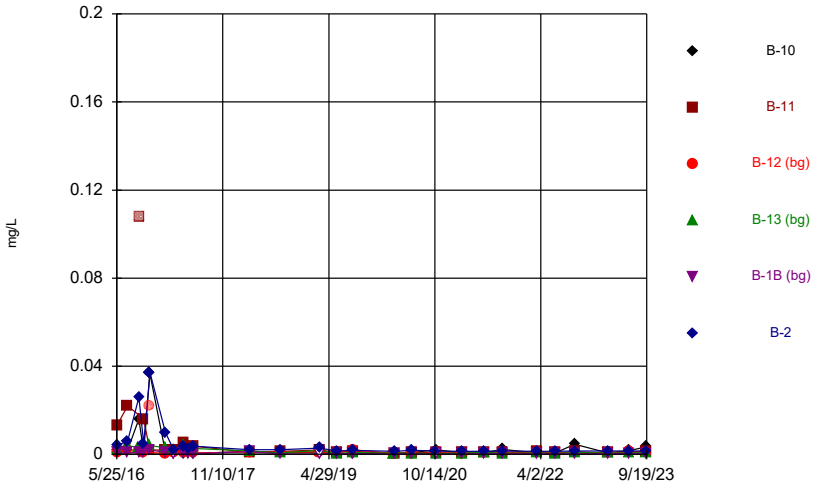
Hollow symbols indicate censored values.

Time Series



Constituent: Chromium, total Analysis Run 12/13/2023 3:41 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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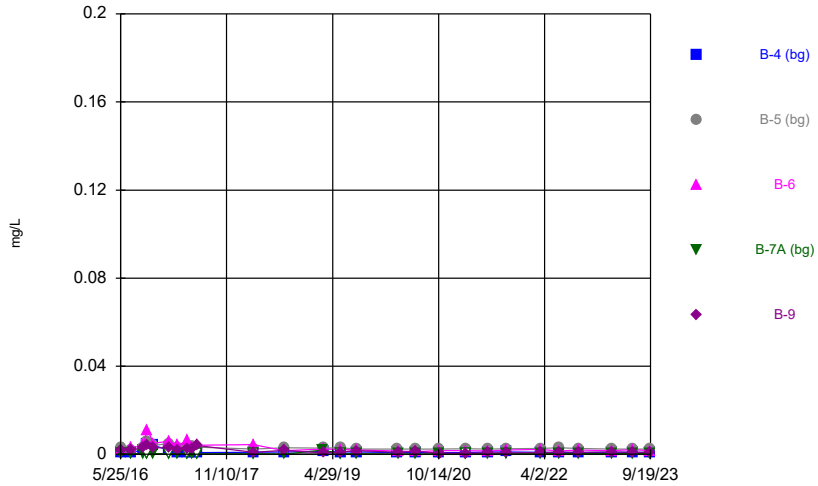
Hollow symbols indicate censored values.

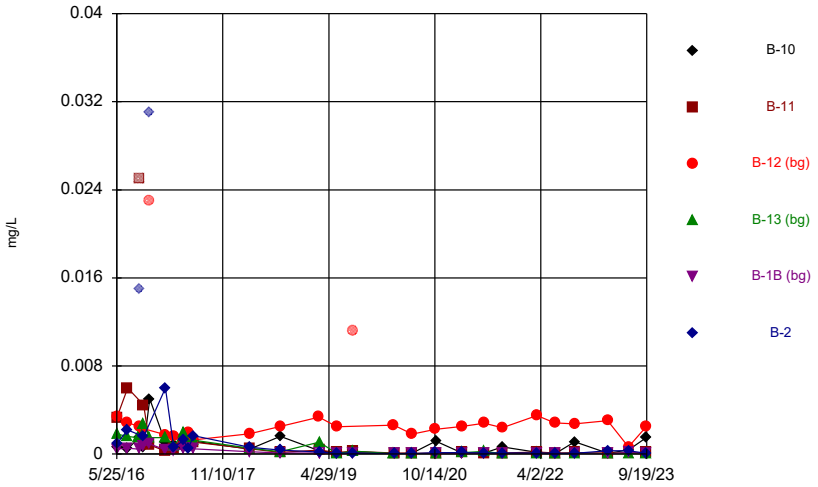
Time Series



Constituent: Chromium, total Analysis Run 12/13/2023 3:41 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG
Hollow symbols indicate censored values.

Time Series



Constituent: Cobalt, total Analysis Run 12/13/2023 3:41 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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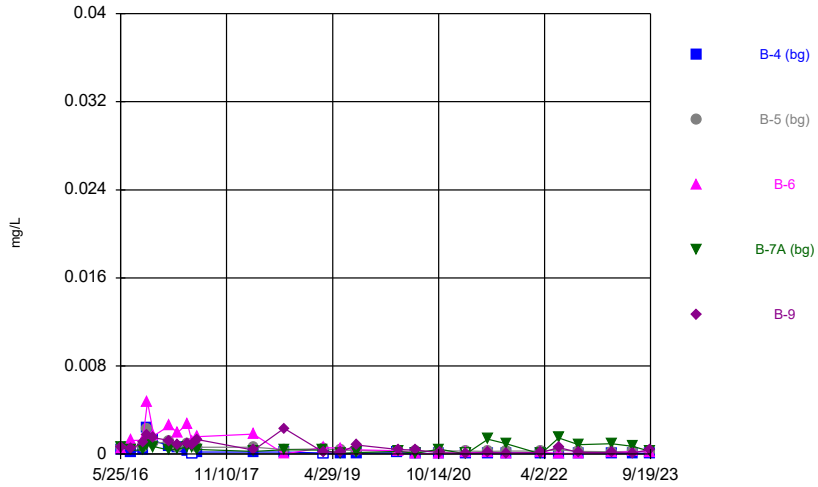
Hollow symbols indicate censored values.

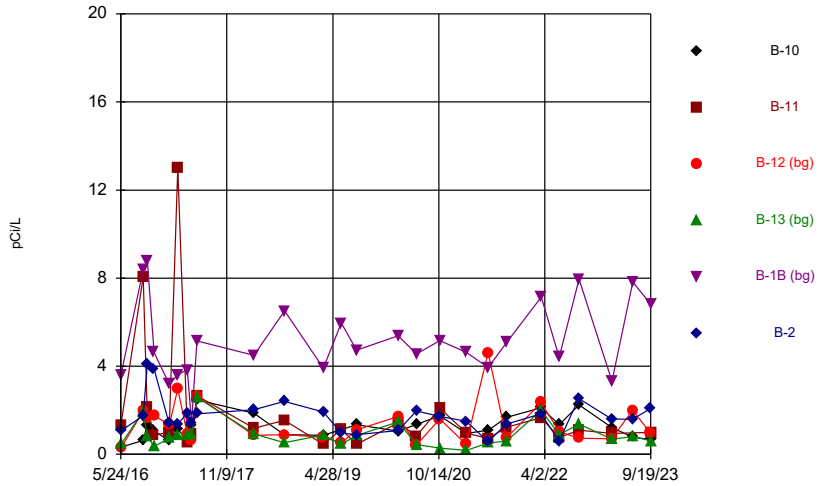
Time Series



Constituent: Cobalt, total Analysis Run 12/13/2023 3:41 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG

Time Series

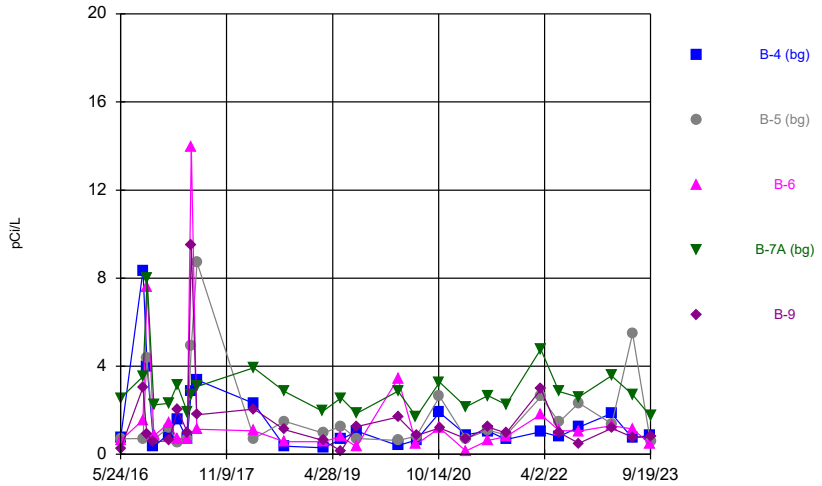


Constituent: Combined Radium 226 + 228 Analysis Run 12/13/2023 3:41 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG

Time Series



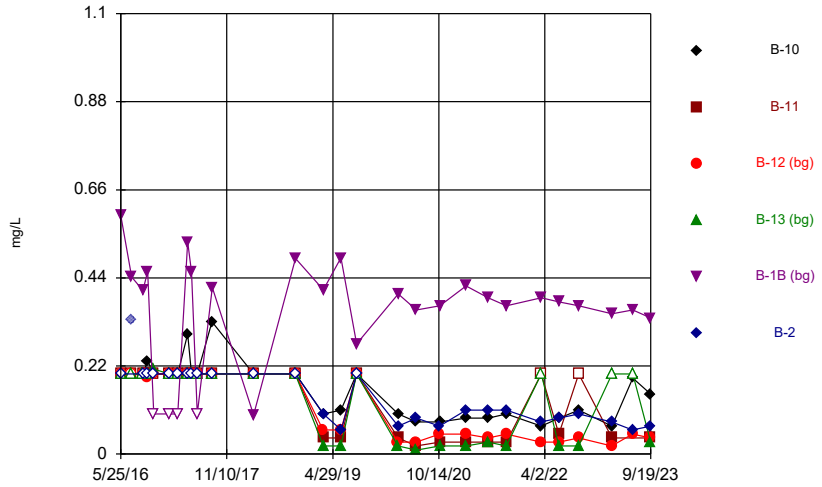
Constituent: Combined Radium 226 + 228 Analysis Run 12/13/2023 3:41 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG

Hollow symbols indicate censored values.

Time Series



Constituent: Fluoride, total Analysis Run 12/13/2023 3:41 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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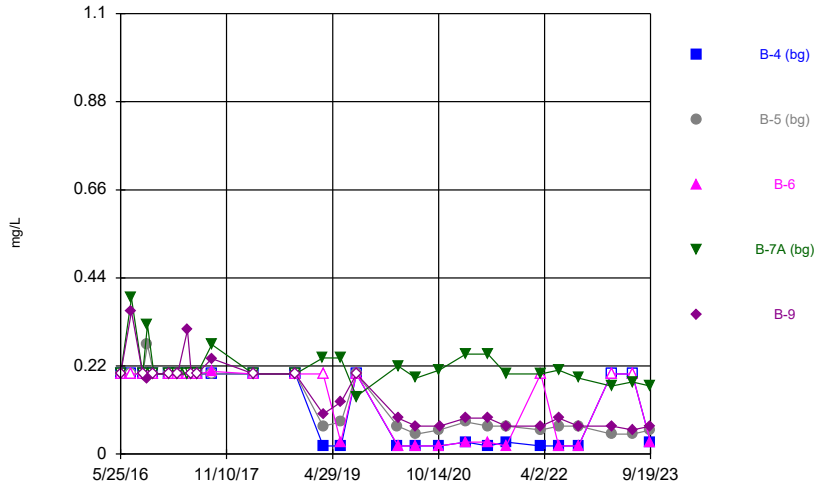
Hollow symbols indicate censored values.

Time Series



Constituent: Fluoride, total Analysis Run 12/13/2023 3:41 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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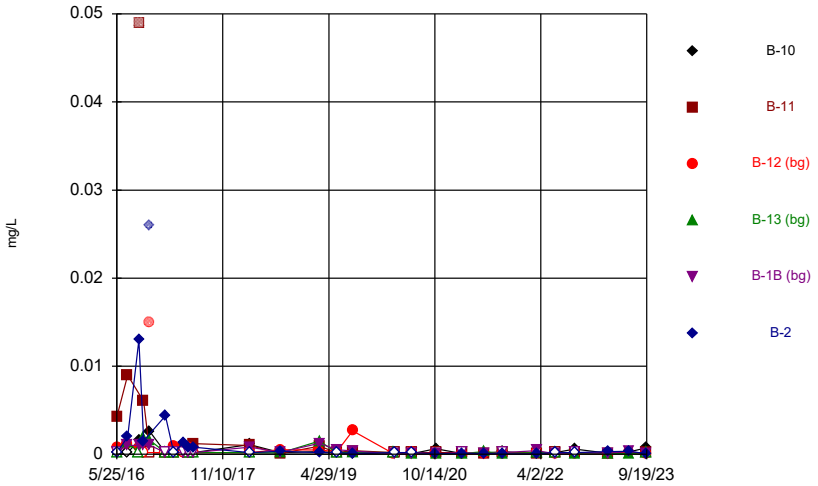
Hollow symbols indicate censored values.

Time Series



Constituent: Lead, total Analysis Run 12/13/2023 3:41 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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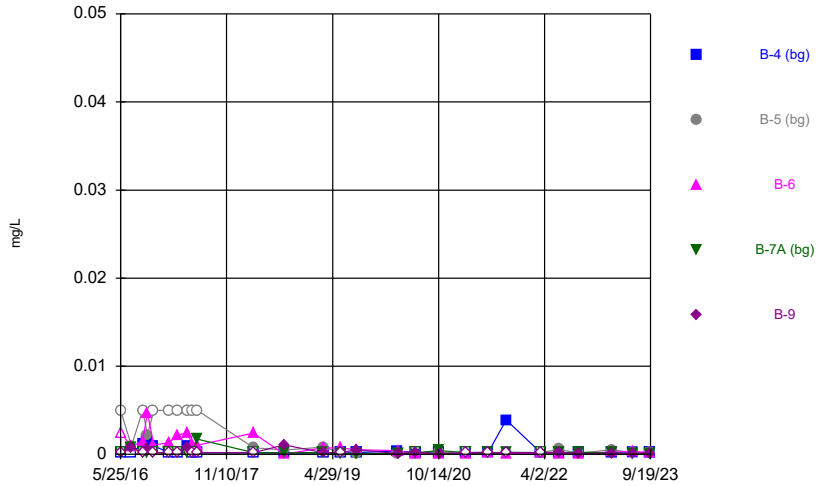
Hollow symbols indicate censored values.

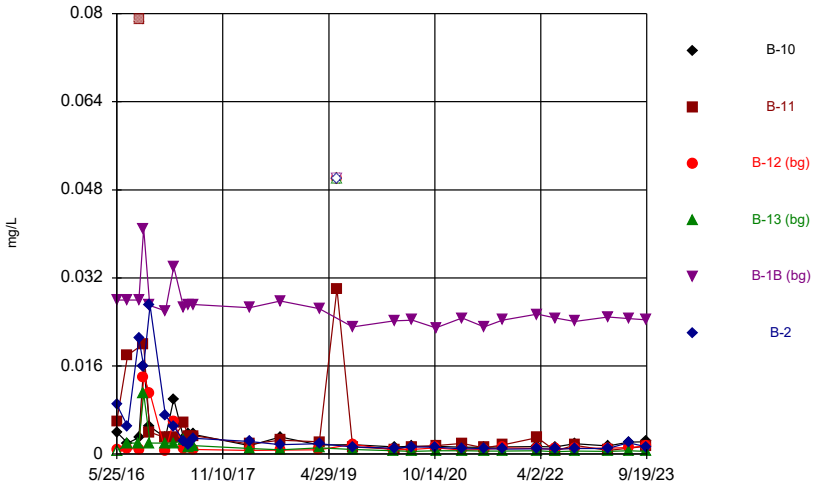
Time Series



Constituent: Lead, total Analysis Run 12/13/2023 3:41 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG
Hollow symbols indicate censored values.

Time Series



Constituent: Lithium, total Analysis Run 12/13/2023 3:41 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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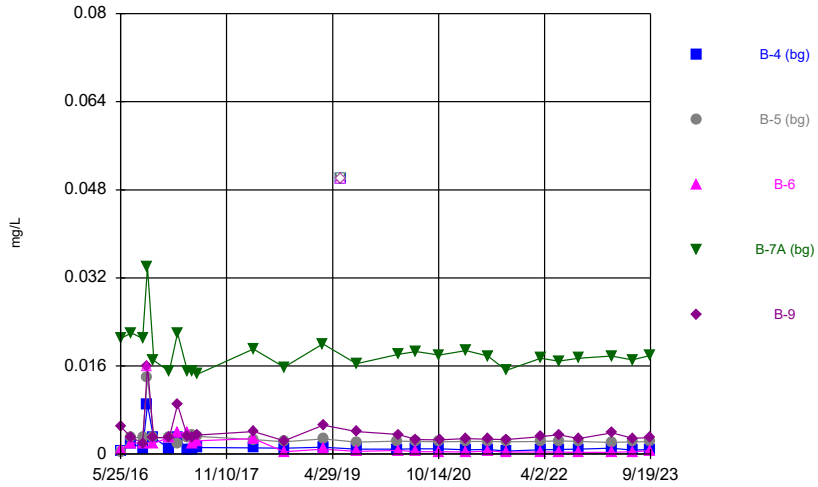
Hollow symbols indicate censored values.

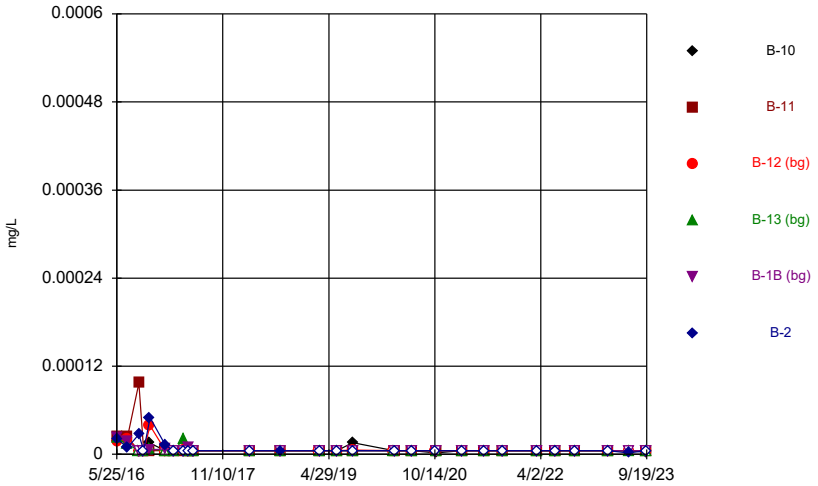
Time Series



Constituent: Lithium, total Analysis Run 12/13/2023 3:41 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG
Hollow symbols indicate censored values.

Time Series



Constituent: Mercury, total Analysis Run 12/13/2023 3:41 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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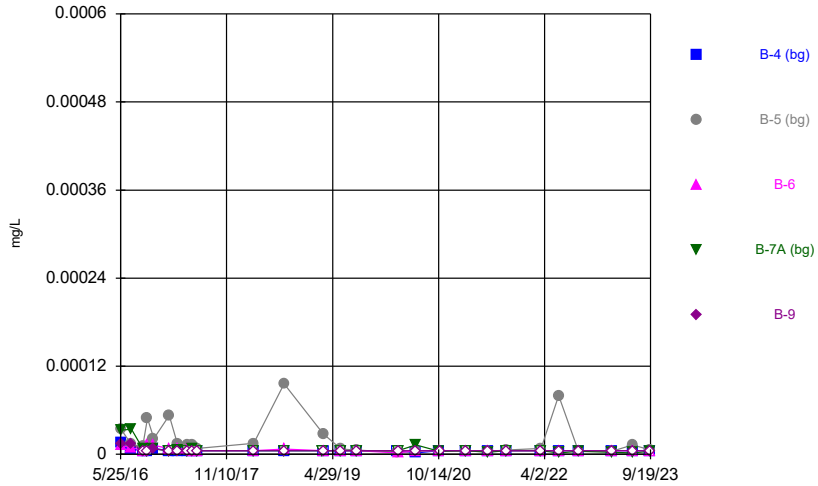
Hollow symbols indicate censored values.

Time Series



Constituent: Mercury, total Analysis Run 12/13/2023 3:41 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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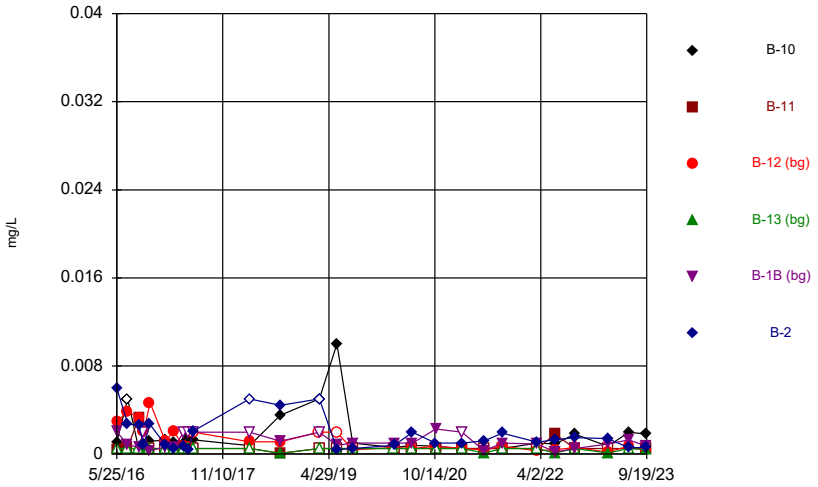
Hollow symbols indicate censored values.

Time Series



Constituent: Molybdenum, total Analysis Run 12/13/2023 3:41 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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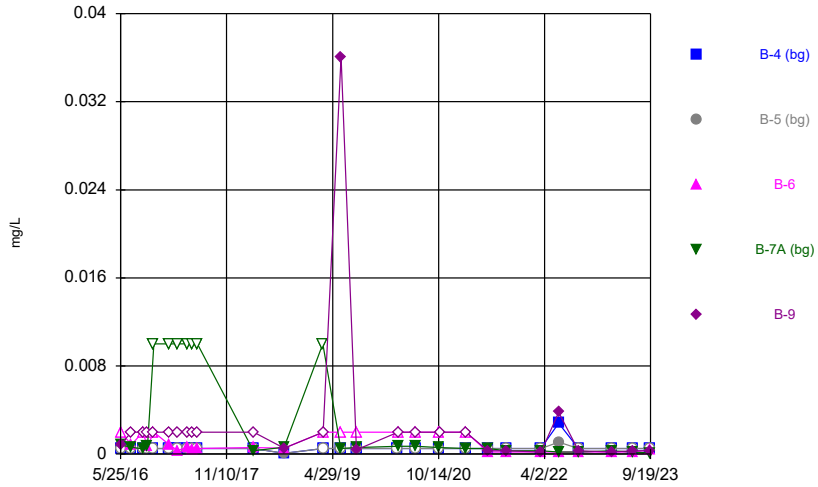
Hollow symbols indicate censored values.

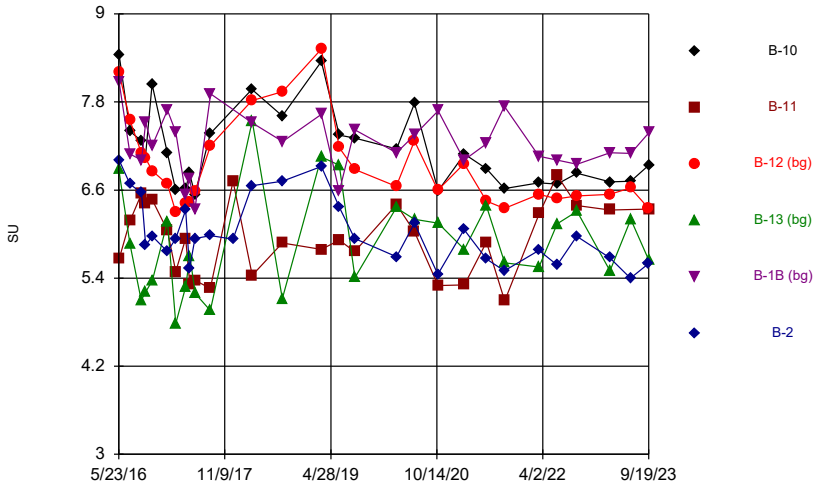
Time Series



Constituent: Molybdenum, total Analysis Run 12/13/2023 3:42 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG

Time Series



Constituent: pH, field Analysis Run 12/13/2023 3:42 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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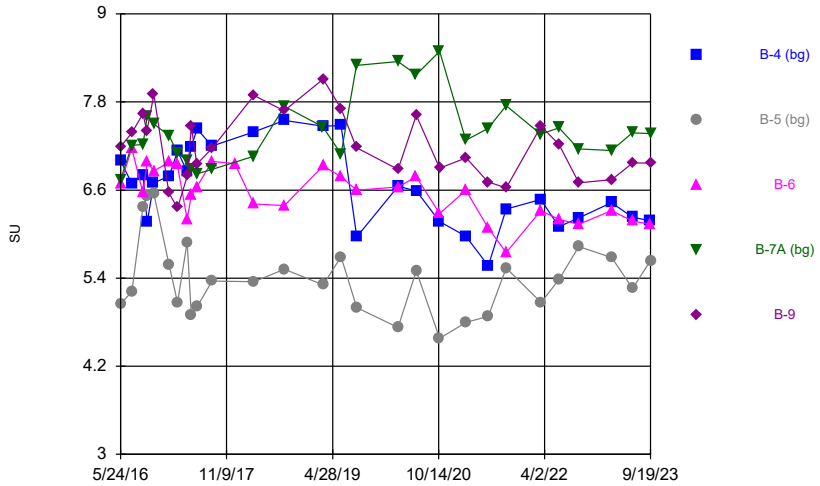
Time Series



Constituent: pH, field Analysis Run 12/13/2023 3:42 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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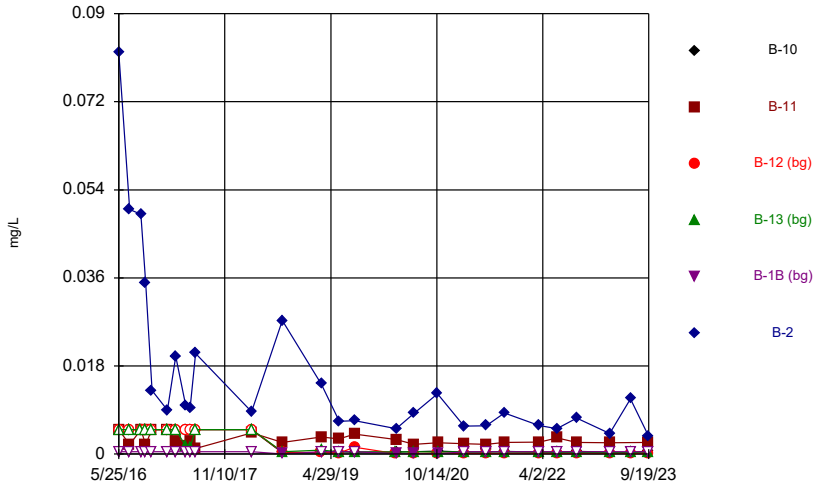
Hollow symbols indicate censored values.

Time Series



Constituent: Selenium, total Analysis Run 12/13/2023 3:42 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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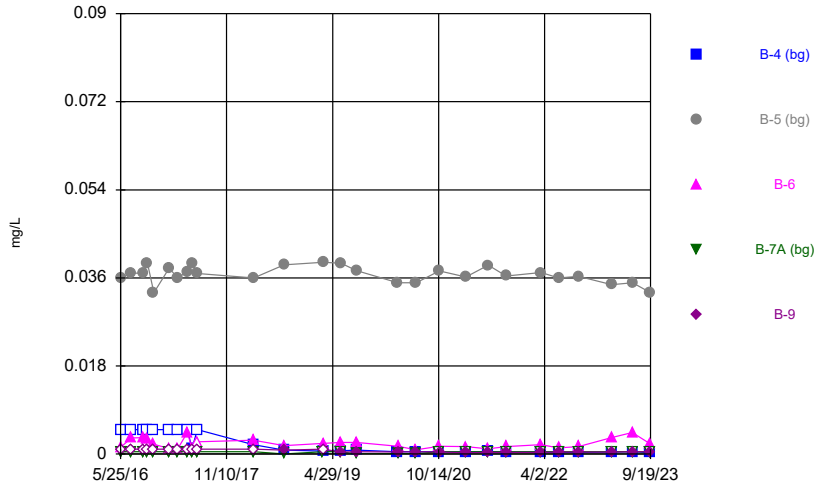
Hollow symbols indicate censored values.

Time Series

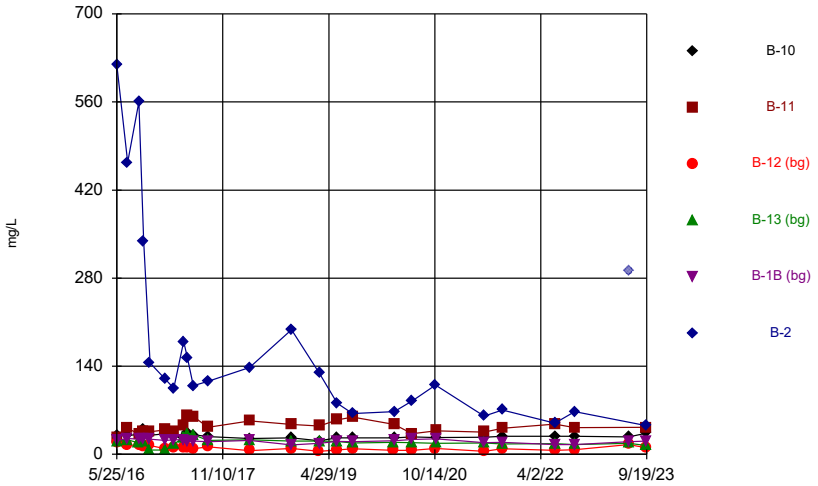


Constituent: Selenium, total Analysis Run 12/13/2023 3:42 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG

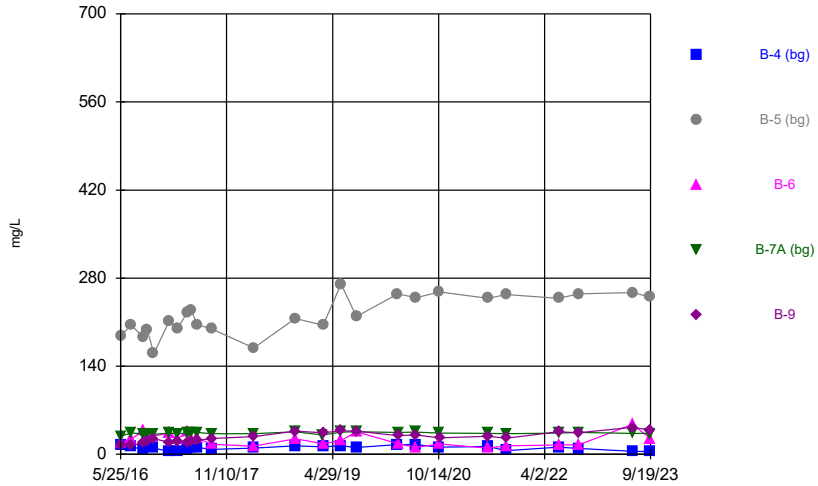
Time Series



Constituent: Sulfate, total Analysis Run 12/13/2023 3:42 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG

Time Series



Constituent: Sulfate, total Analysis Run 12/13/2023 3:42 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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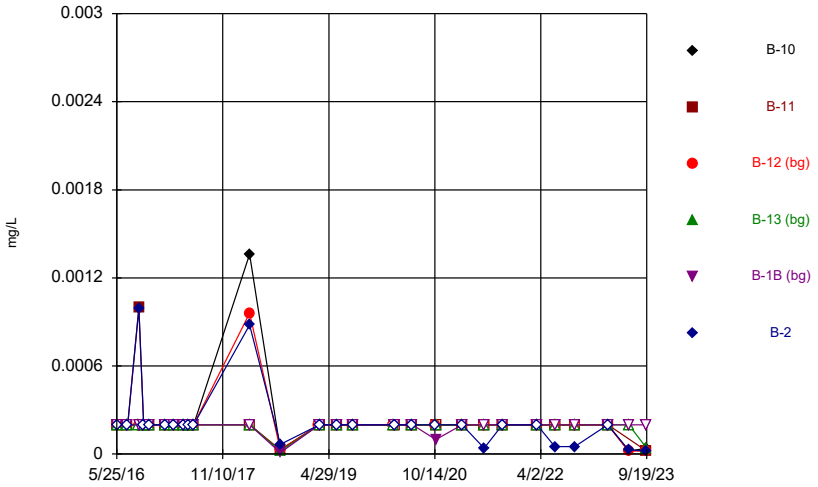
Hollow symbols indicate censored values.

Time Series



Constituent: Thallium, total Analysis Run 12/13/2023 3:42 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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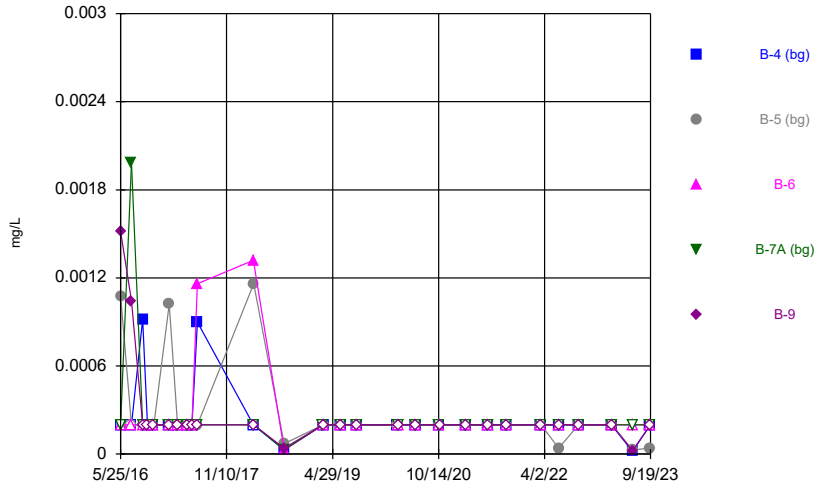
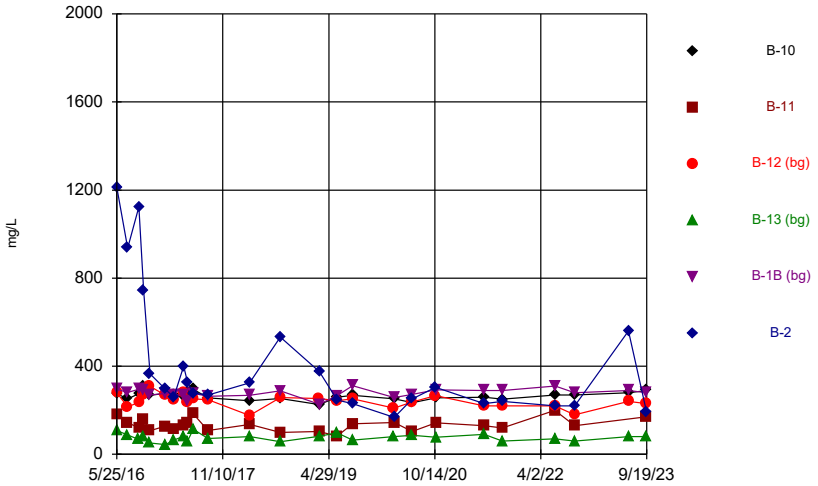
Hollow symbols indicate censored values.

Time Series



Constituent: Thallium, total Analysis Run 12/13/2023 3:42 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Time Series



Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 3:42 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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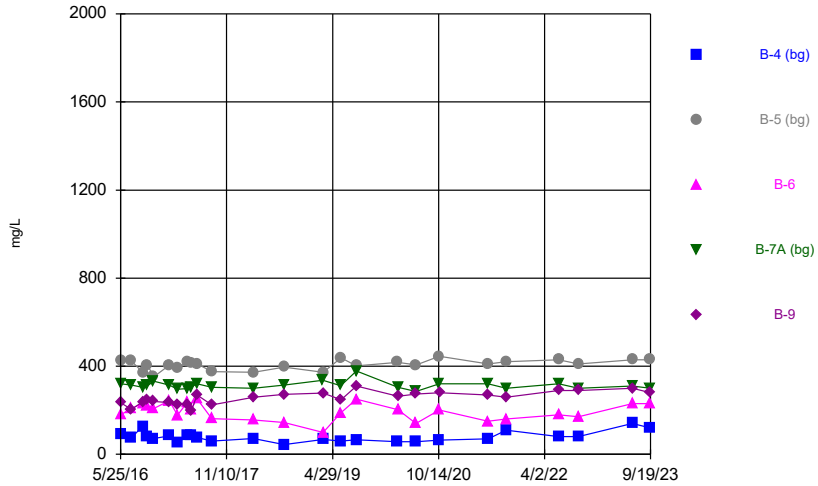
Time Series



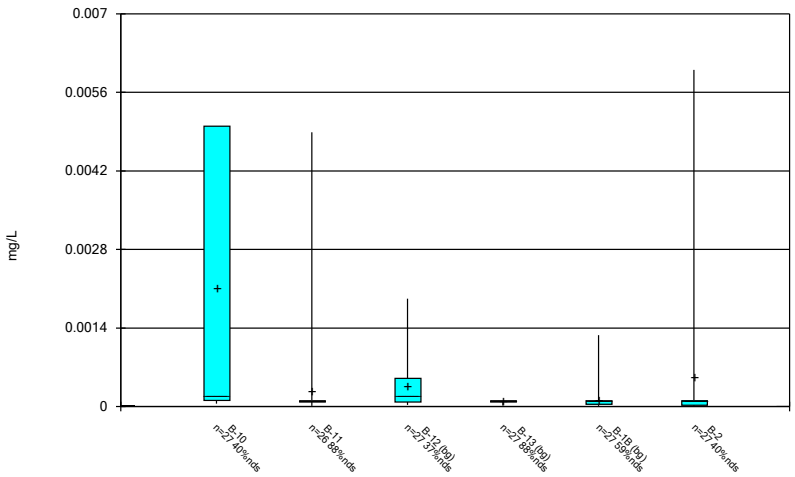
Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 3:42 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

FIGURE B

Box Plots

Box & Whiskers Plot



Constituent: Antimony, total Analysis Run 12/13/2023 3:48 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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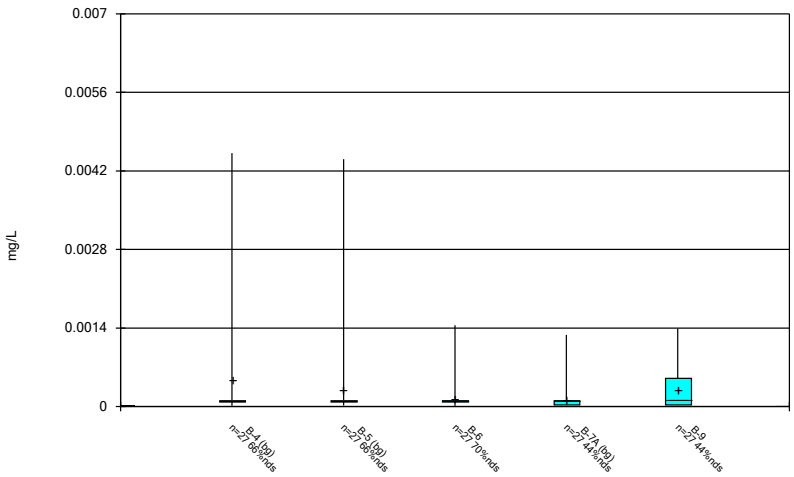
Box & Whiskers Plot



Constituent: Antimony, total Analysis Run 12/13/2023 3:48 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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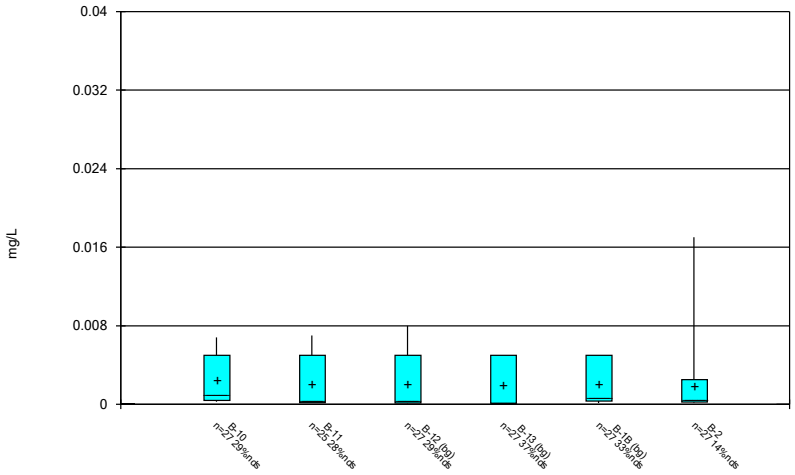
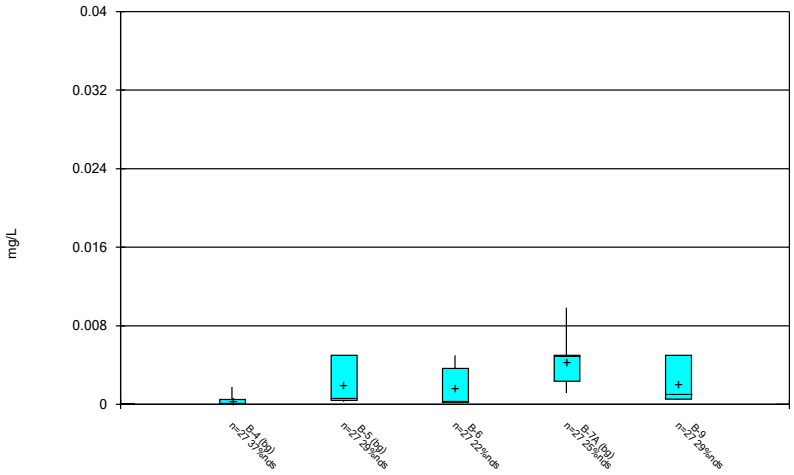
Box & Whiskers Plot



Constituent: Arsenic, total Analysis Run 12/13/2023 3:48 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

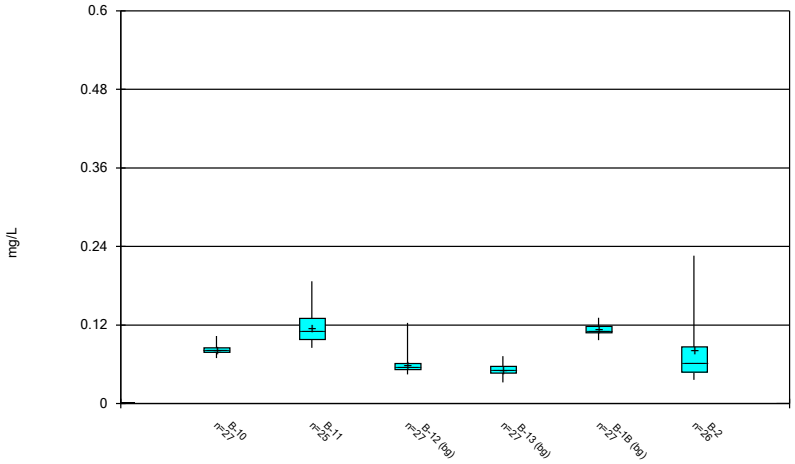
Sanitas™ v.10.0.15 Software licensed to . UG

Box & Whiskers Plot



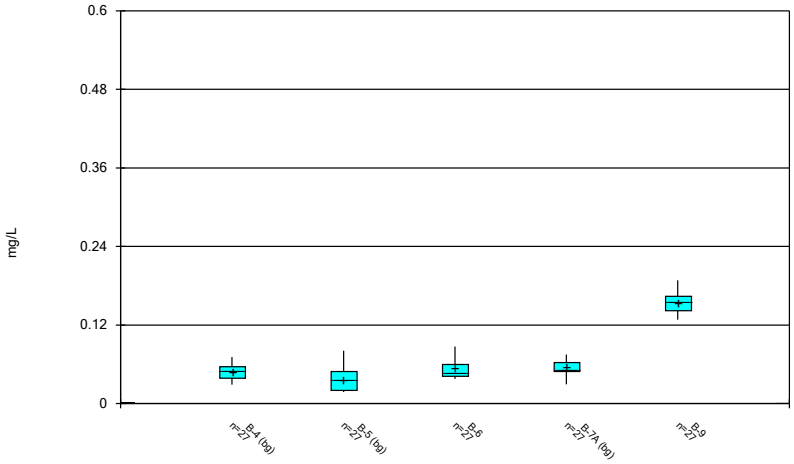
Constituent: Arsenic, total Analysis Run 12/13/2023 3:48 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



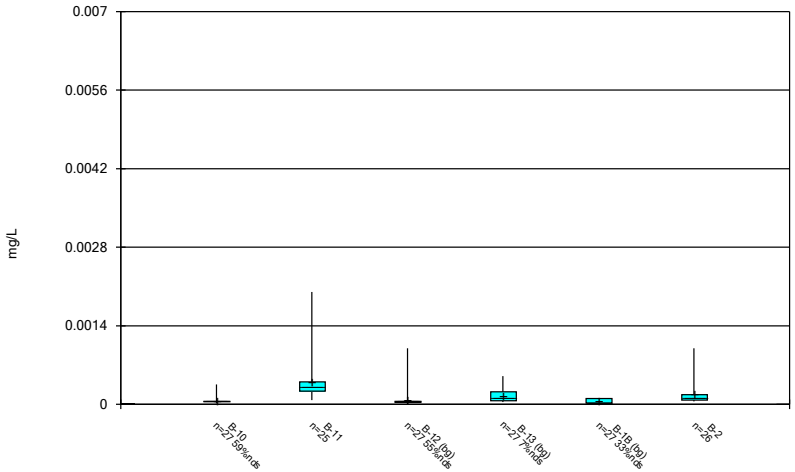
Constituent: Barium, total Analysis Run 12/13/2023 3:48 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



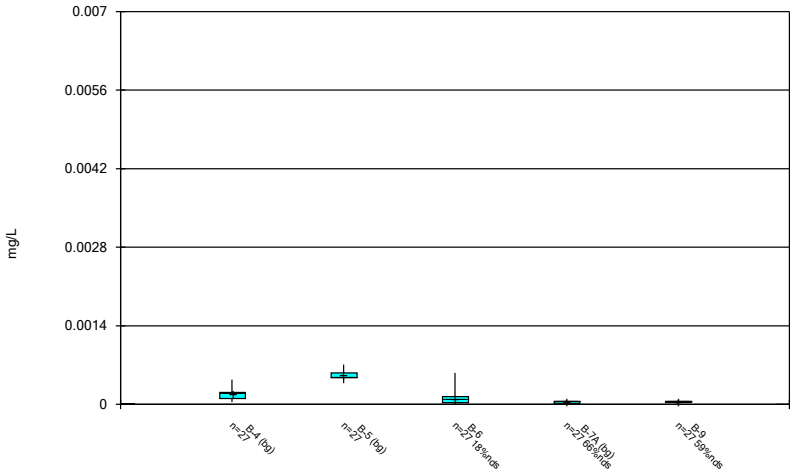
Constituent: Barium, total Analysis Run 12/13/2023 3:48 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



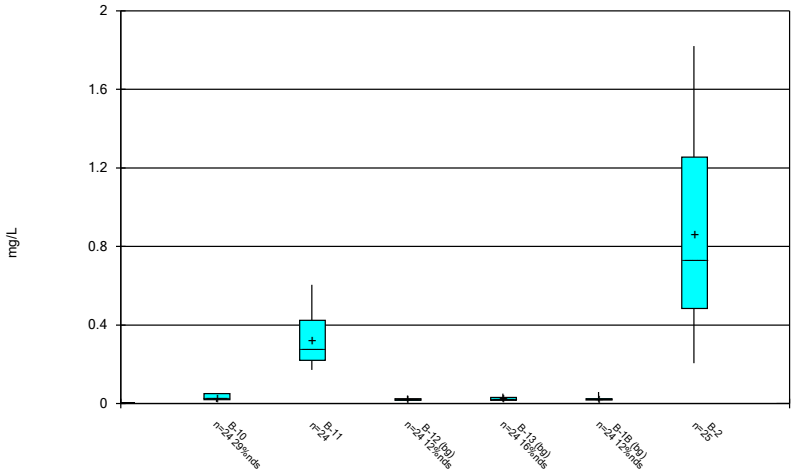
Constituent: Beryllium, total Analysis Run 12/13/2023 3:48 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



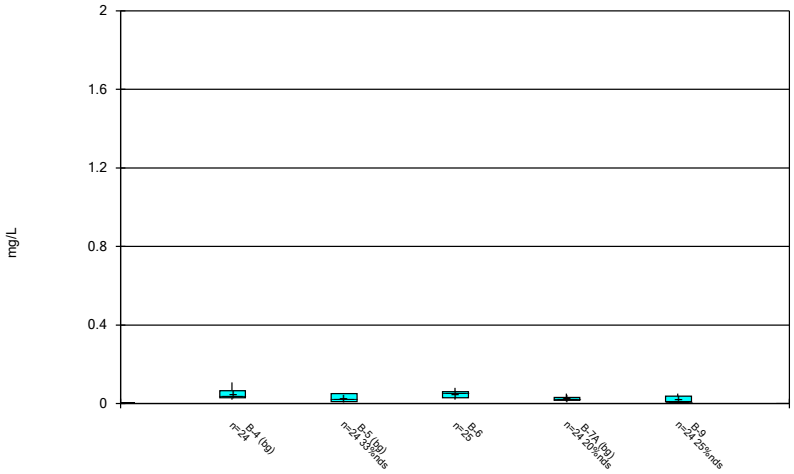
Constituent: Beryllium, total Analysis Run 12/13/2023 3:48 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



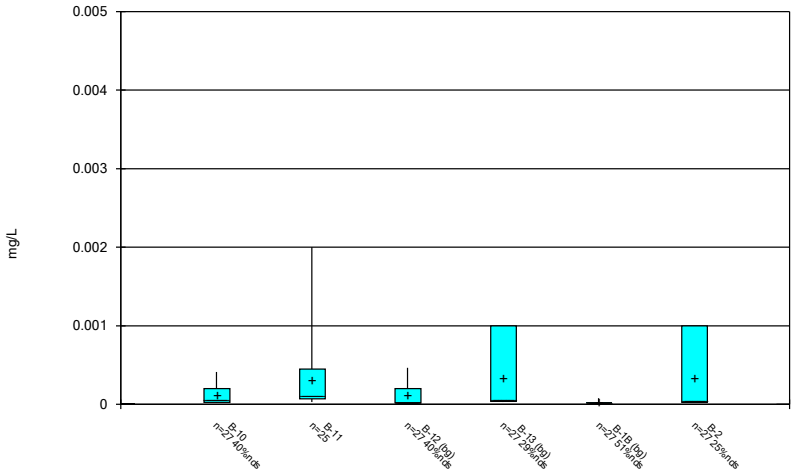
Constituent: Boron, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



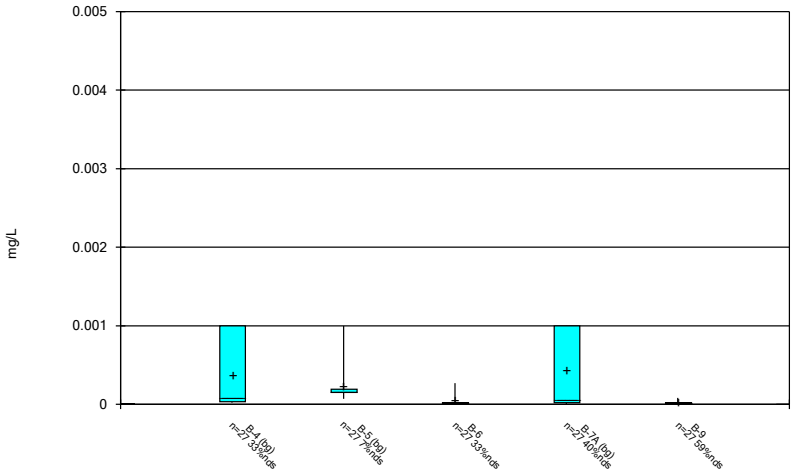
Constituent: Boron, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



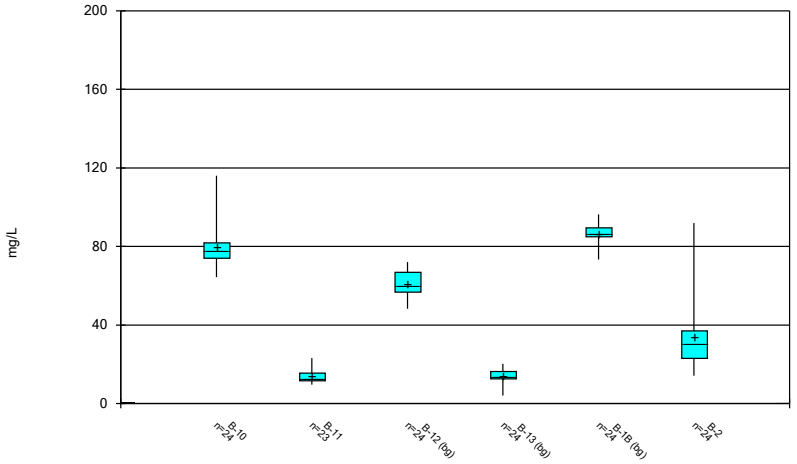
Constituent: Cadmium, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



Constituent: Cadmium, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



Constituent: Calcium, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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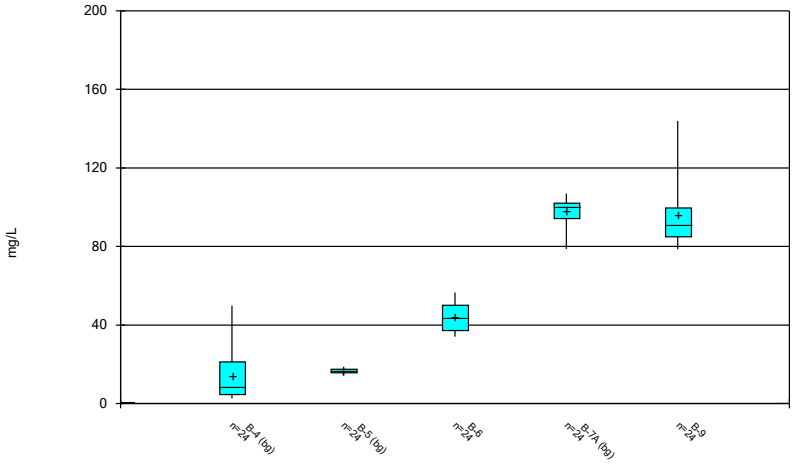
Box & Whiskers Plot



Constituent: Calcium, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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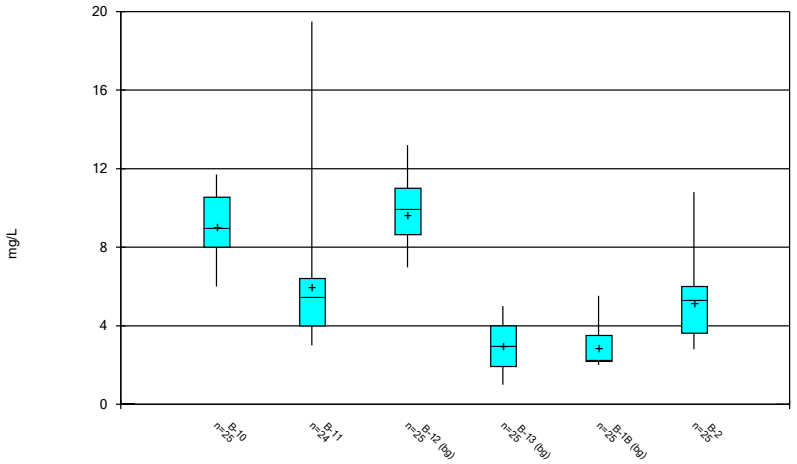
Box & Whiskers Plot



Constituent: Chloride, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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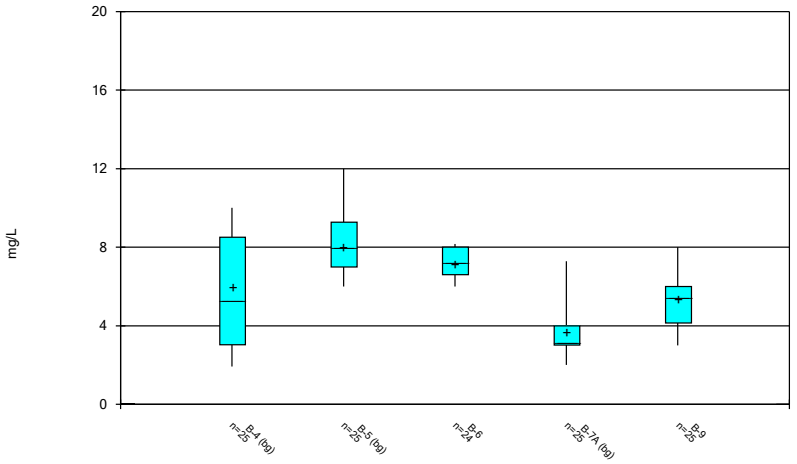
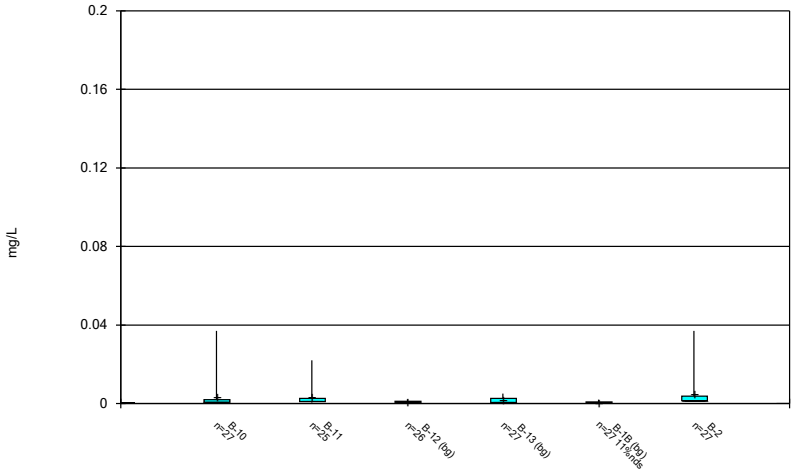
Box & Whiskers Plot



Constituent: Chloride, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

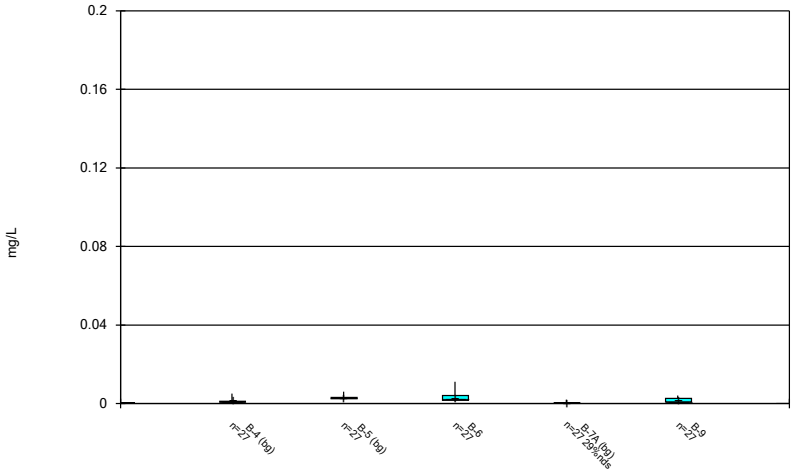
Box & Whiskers Plot



Constituent: Chromium, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG

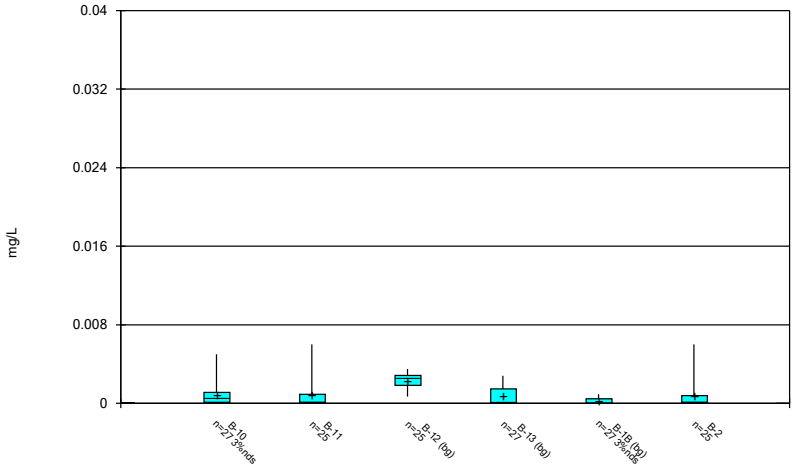
Box & Whiskers Plot



Constituent: Chromium, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG

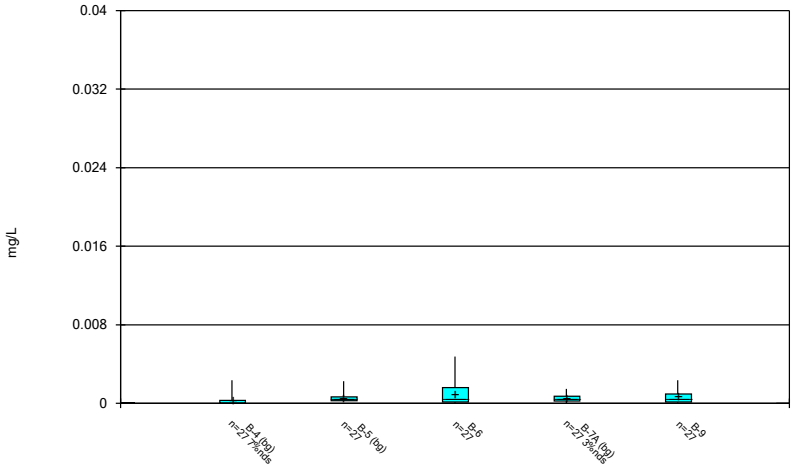
Box & Whiskers Plot



Constituent: Cobalt, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

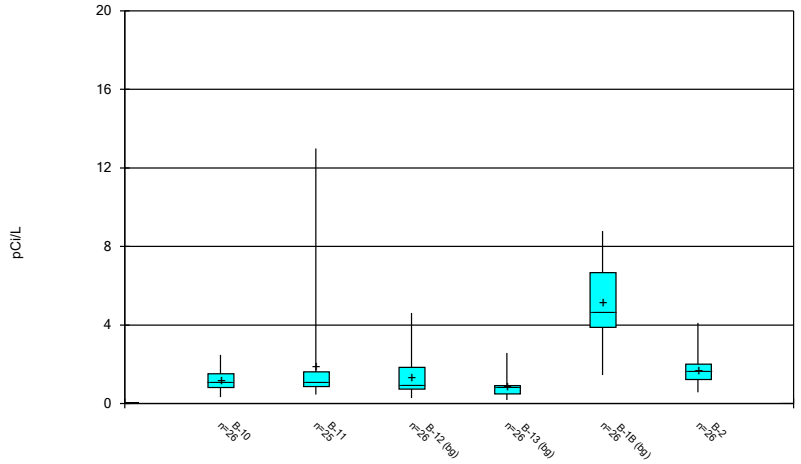
Sanitas™ v.10.0.15 Software licensed to . UG

Box & Whiskers Plot



Constituent: Cobalt, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



Constituent: Combined Radium 226 + 228 Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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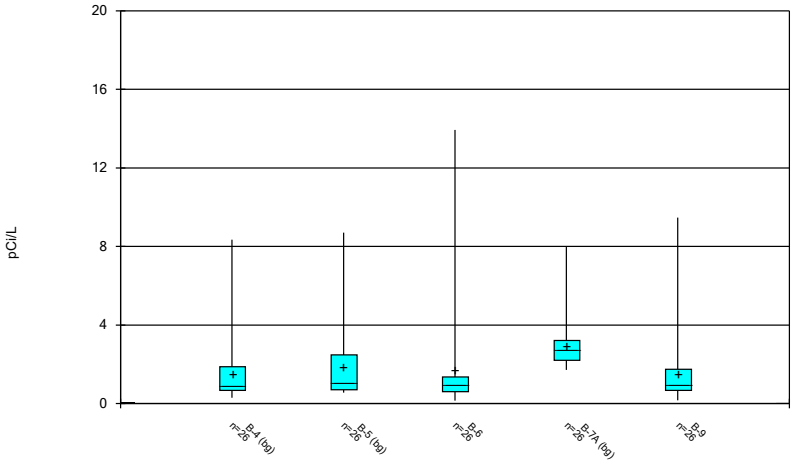
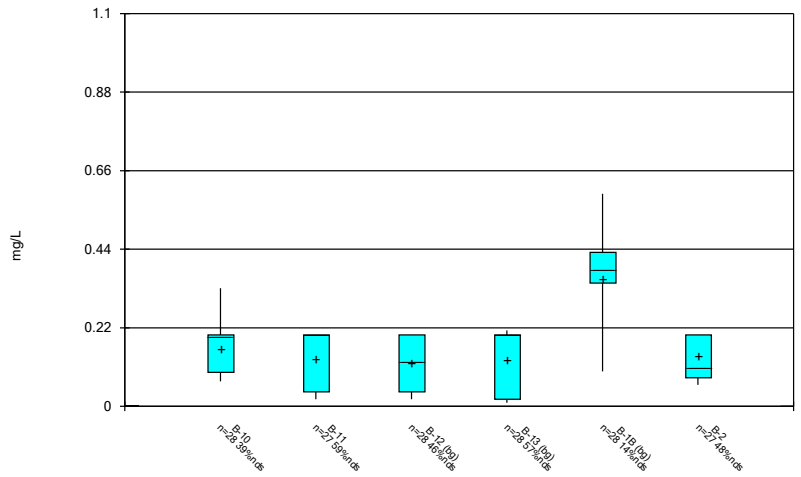
Box & Whiskers Plot



Constituent: Combined Radium 226 + 228 Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG

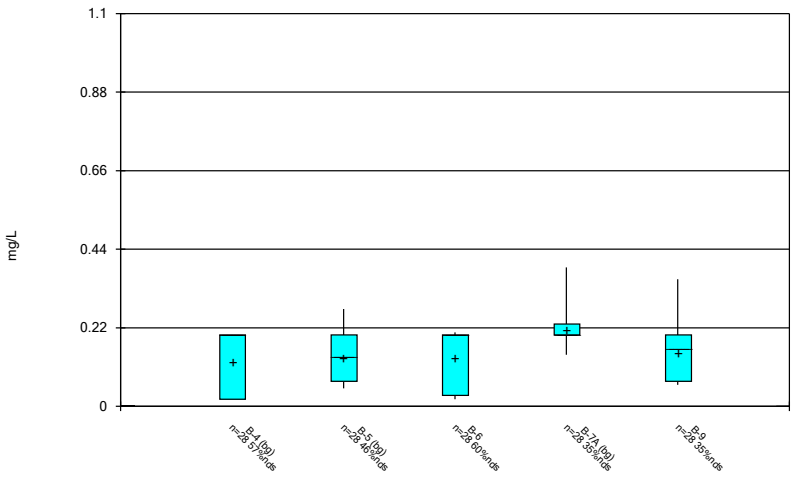
Box & Whiskers Plot



Constituent: Fluoride, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

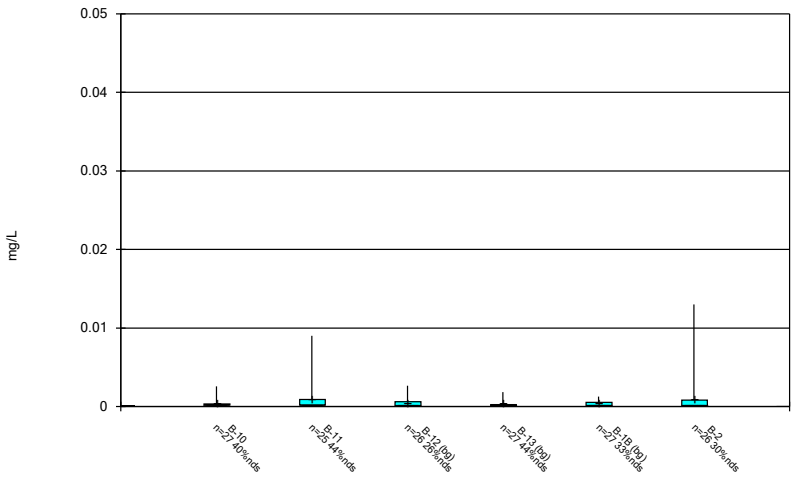
Sanitas™ v.10.0.15 Software licensed to . UG

Box & Whiskers Plot



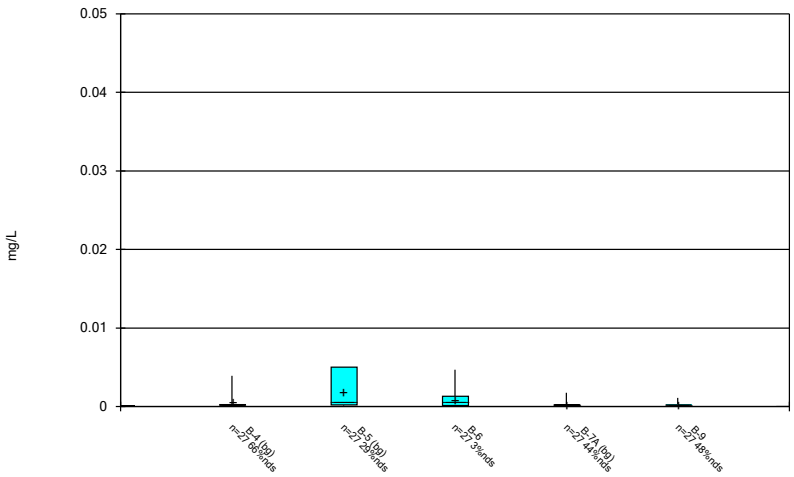
Constituent: Fluoride, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



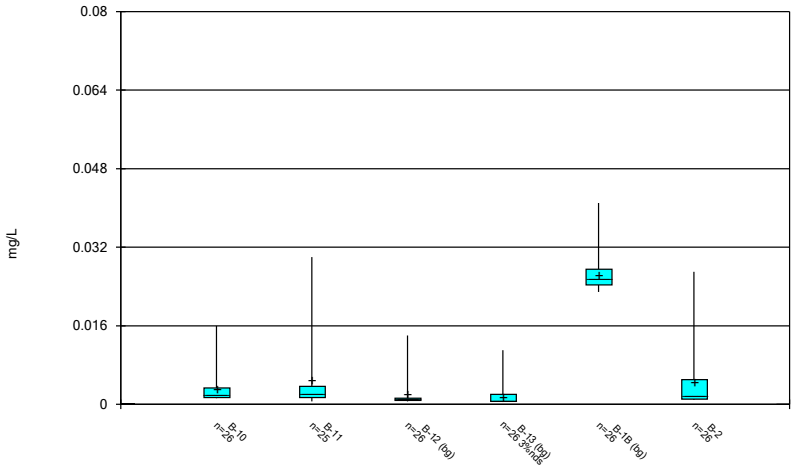
Constituent: Lead, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



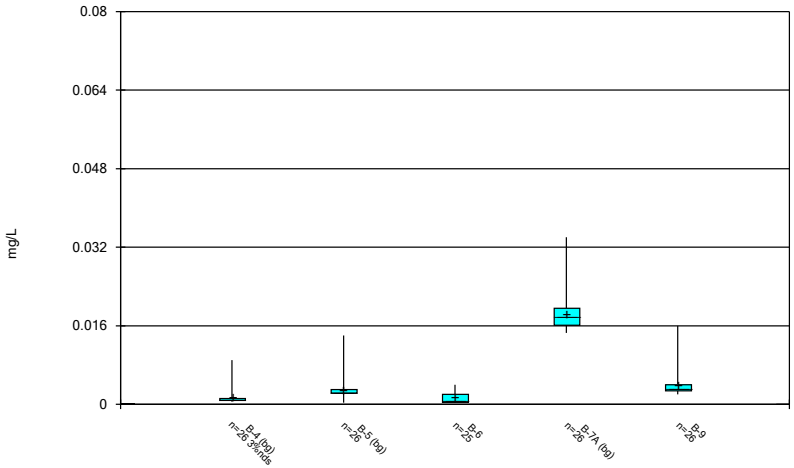
Constituent: Lead, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



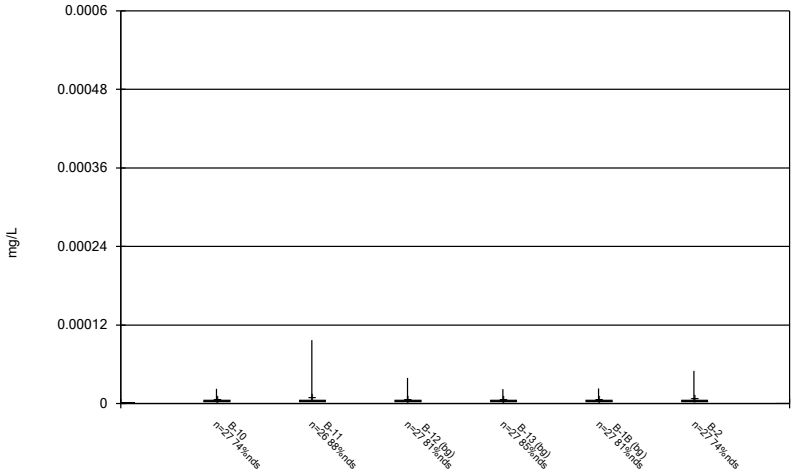
Constituent: Lithium, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



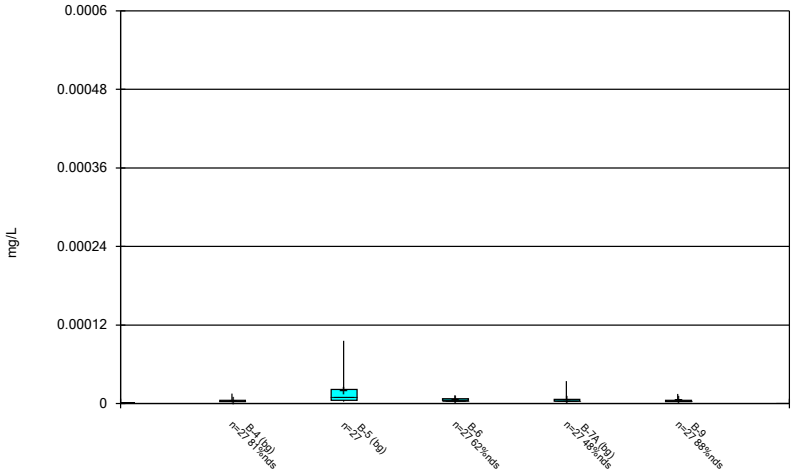
Constituent: Lithium, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



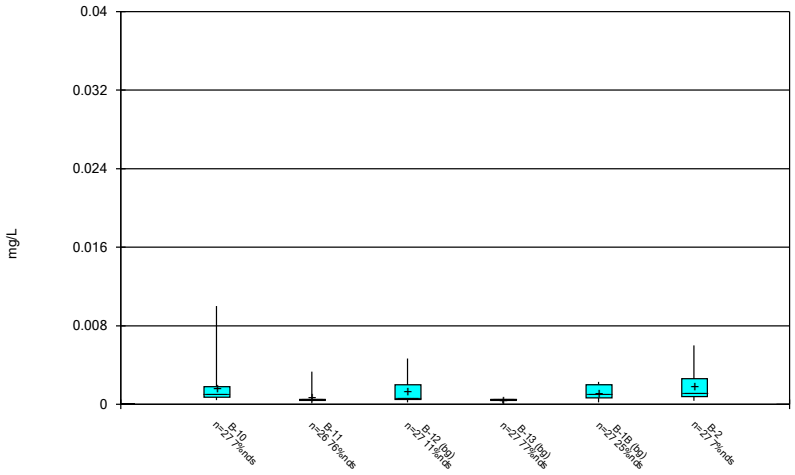
Constituent: Mercury, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



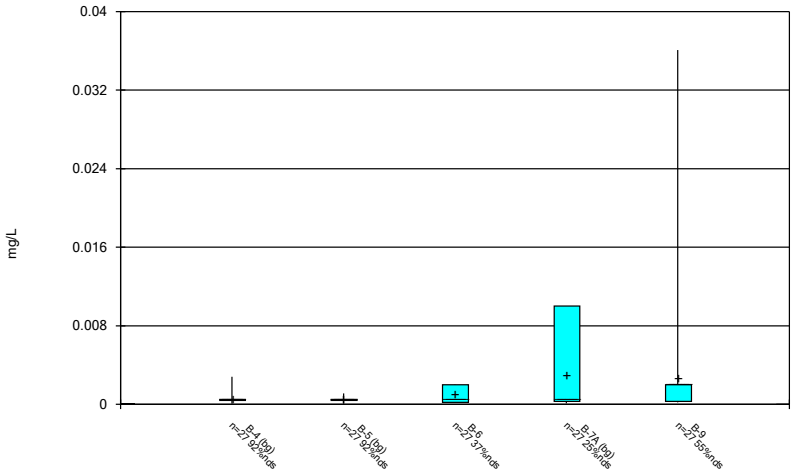
Constituent: Mercury, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



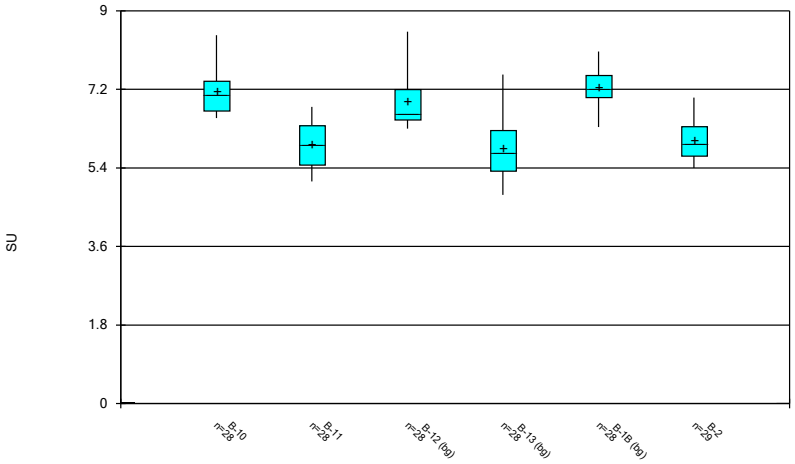
Constituent: Molybdenum, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



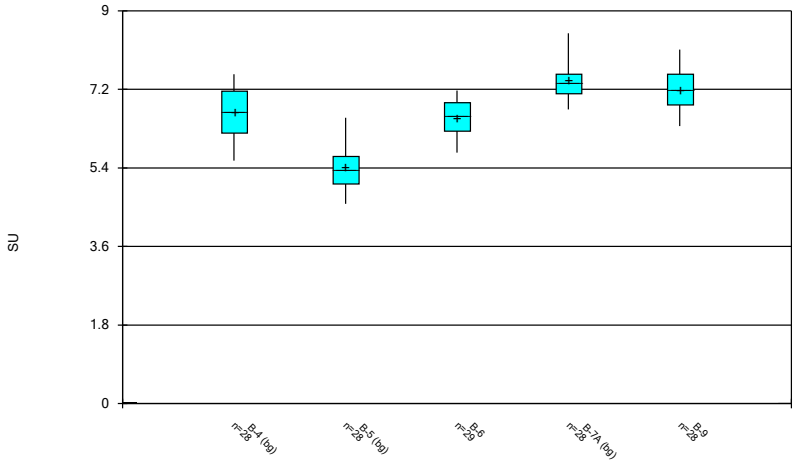
Constituent: Molybdenum, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



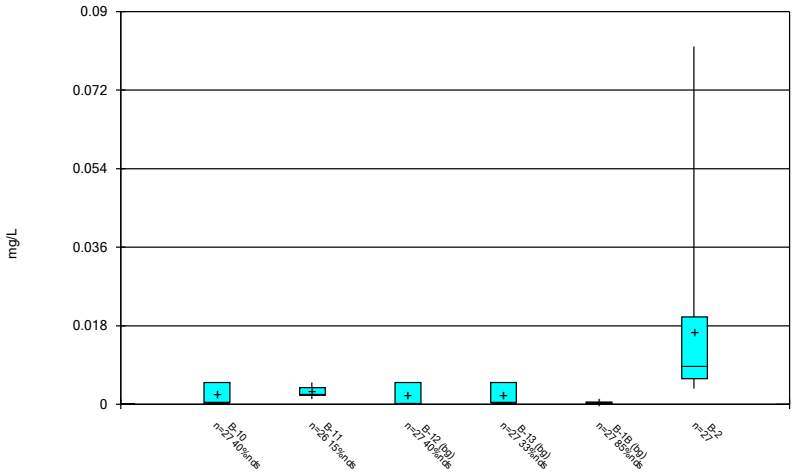
Constituent: pH, field Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



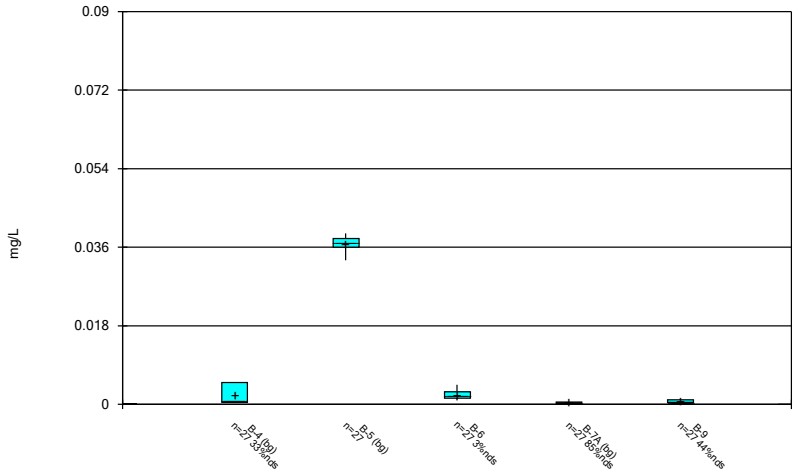
Constituent: pH, field Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



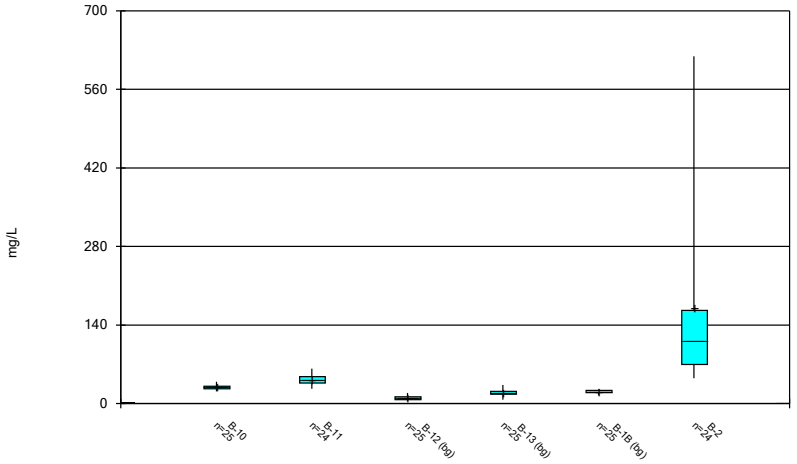
Constituent: Selenium, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



Constituent: Selenium, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



Constituent: Sulfate, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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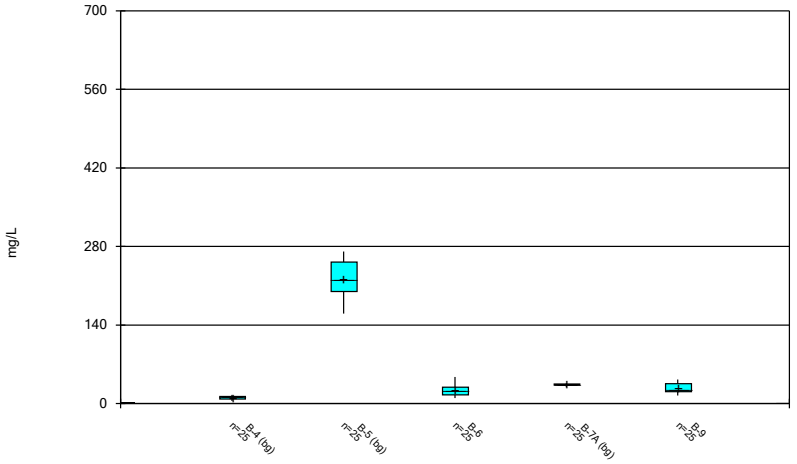
Box & Whiskers Plot



Constituent: Sulfate, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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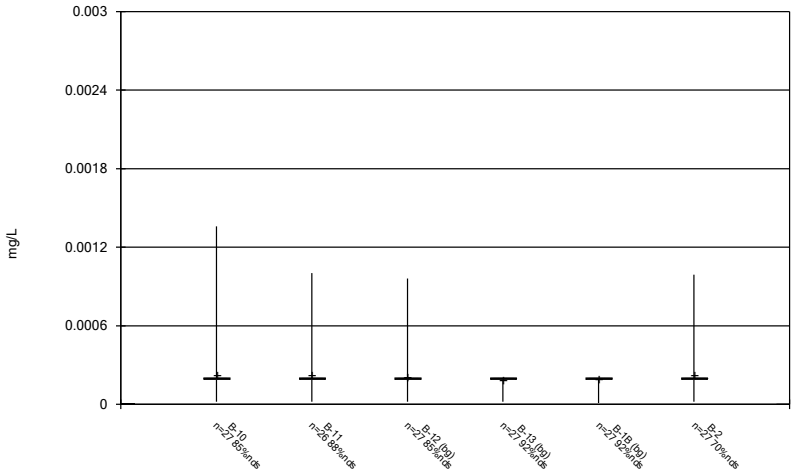
Box & Whiskers Plot



Constituent: Thallium, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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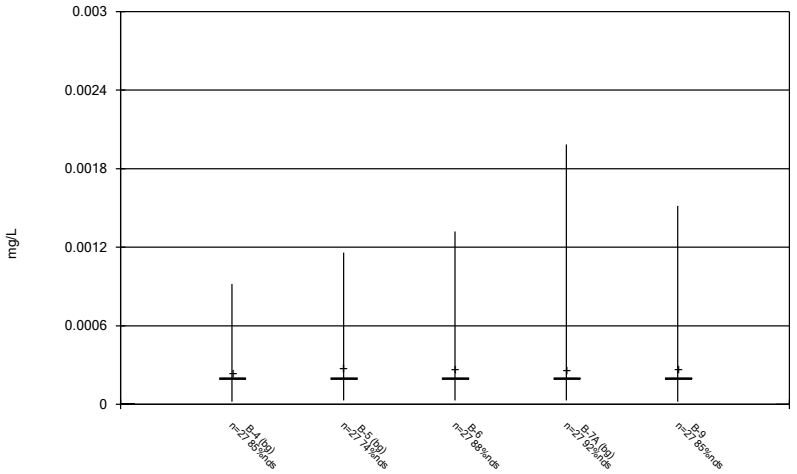
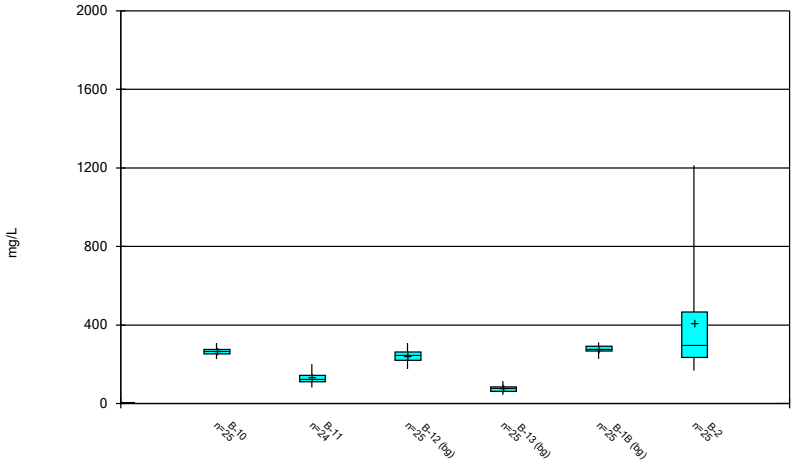
Box & Whiskers Plot



Constituent: Thallium, total Analysis Run 12/13/2023 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot

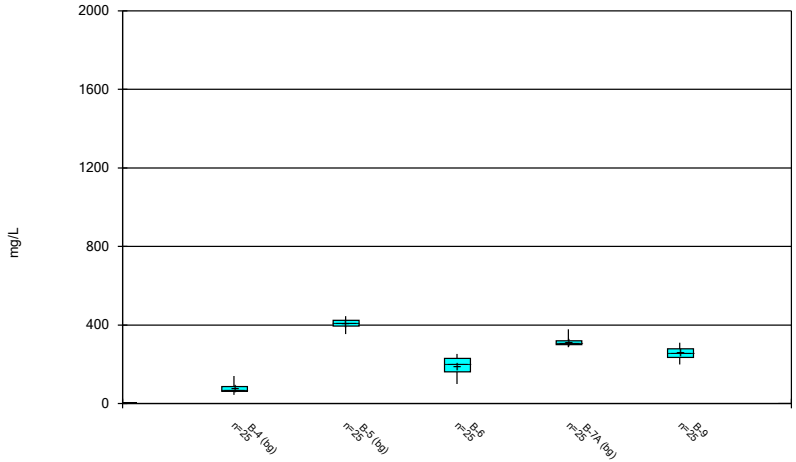


Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 3:49 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG

Box & Whiskers Plot



Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 3:49 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

FIGURE C

Outlier Summary and Tukey's Outlier Test

Outlier Summary

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 12/5/2023, 1:02 PM

	B-11 Arsenic, total (mg/L)	B-11 Barium, total (mg/L)	B-2 Barium, total (mg/L)	B-11 Beryllium, total (mg/L)	B-2 Beryllium, total (mg/L)	B-11 Cadmium, total (mg/L)	B-6 Chloride, total (mg/L)	B-11 Chromium, total (mg/L)	B-12 Chromium, total (mg/L)	B-11 Cobalt, total (mg/L)
7/19/2016										
9/14/2016	0.032 (o)	0.494 (o)		0.006 (o)		0.004 (o)		0.108 (o)		0.025 (o)
10/7/2016										
11/8/2016			0.543 (o)		0.003 (o)				0.022 (o)	
10/23/2018							12.2 (o)			
6/10/2019										
6/11/2019										
8/27/2019										
6/19/2023										

	B-12 Cobalt, total (mg/L)	B-2 Cobalt, total (mg/L)	B-2 Fluoride, total (mg/L)	B-11 Lead, total (mg/L)	B-12 Lead, total (mg/L)	B-2 Lead, total (mg/L)	B-10 Lithium, total (mg/L)	B-11 Lithium, total (mg/L)	B-12 Lithium, total (mg/L)	B-13 Lithium, total (mg/L)
7/19/2016			0.3361 (J,o)							
9/14/2016		0.015 (o)		0.049 (o)				0.079 (o)		
10/7/2016										
11/8/2016	0.023 (o)	0.031 (o)			0.015 (o)	0.026 (o)				
10/23/2018										
6/10/2019							<0.1 (o)		<0.1 (o)	<0.1 (o)
6/11/2019										
8/27/2019	0.0112 (o)									
6/19/2023										

	B-1B Lithium, total (mg/L)	B-2 Lithium, total (mg/L)	B-4 Lithium, total (mg/L)	B-5 Lithium, total (mg/L)	B-6 Lithium, total (mg/L)	B-7A Lithium, total (mg/L)	B-9 Lithium, total (mg/L)	B-2 Sulfate, total (mg/L)
7/19/2016								
9/14/2016								
10/7/2016					0.016 (o)			
11/8/2016								
10/23/2018								
6/10/2019	<0.1 (o)				<0.1 (o)	<0.1 (o)		
6/11/2019		<0.1 (o)	<0.1 (o)	<0.1 (o)			<0.1 (o)	
8/27/2019								
6/19/2023								292 (o)

Tukey's Outlier Test - All Results (No Significant)

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 12/5/2023, 12:13 PM

Constituent	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Calcium, total (mg/L)	No	n/a	NP	NaN	23	79.85	10.87	ln(x)	ShapiroWilk
Calcium, total (mg/L)	No	n/a	NP	NaN	22	13.63	3.033	ln(x)	ShapiroWilk
Calcium, total (mg/L)	No	n/a	NP	NaN	23	60.86	6.666	sqrt(x)	ShapiroWilk
Calcium, total (mg/L)	No	n/a	NP	NaN	23	13.6	4.087	x^2	ShapiroWilk
Calcium, total (mg/L)	No	n/a	NP	NaN	23	86.98	4.734	x^4	ShapiroWilk
Calcium, total (mg/L)	No	n/a	NP	NaN	23	34.16	18.54	ln(x)	ShapiroWilk
Calcium, total (mg/L)	No	n/a	NP	NaN	23	13.33	12.58	ln(x)	ShapiroWilk
Calcium, total (mg/L)	No	n/a	NP	NaN	23	16.63	1.048	ln(x)	ShapiroWilk
Calcium, total (mg/L)	No	n/a	NP	NaN	23	43.77	7.287	ln(x)	ShapiroWilk
Calcium, total (mg/L)	No	n/a	NP	NaN	23	98.27	6.928	x^6	ShapiroWilk
Calcium, total (mg/L)	No	n/a	NP	NaN	23	95.89	16.51	ln(x)	ShapiroWilk
Chloride, total (mg/L)	No	n/a	NP	NaN	24	8.968	1.692	normal	ShapiroWilk
Chloride, total (mg/L)	No	n/a	NP	NaN	23	5.395	2.092	ln(x)	ShapiroWilk
Chloride, total (mg/L)	No	n/a	NP	NaN	24	9.78	1.554	sqrt(x)	ShapiroWilk
Chloride, total (mg/L)	No	n/a	NP	NaN	24	2.915	1.154	x^(1/3)	ShapiroWilk
Chloride, total (mg/L)	No	n/a	NP	NaN	24	2.887	1.011	ln(x)	ShapiroWilk
Chloride, total (mg/L)	No	n/a	NP	NaN	24	5.256	1.809	ln(x)	ShapiroWilk
Chloride, total (mg/L)	No	n/a	NP	NaN	24	5.998	2.863	normal	ShapiroWilk
Chloride, total (mg/L)	No	n/a	NP	NaN	24	7.986	1.585	ln(x)	ShapiroWilk
Chloride, total (mg/L)	No	n/a	NP	NaN	24	7.368	1.271	ln(x)	ShapiroWilk
Chloride, total (mg/L)	No	n/a	NP	NaN	24	3.7	1.102	ln(x)	ShapiroWilk
Chloride, total (mg/L)	No	n/a	NP	NaN	24	5.303	1.236	normal	ShapiroWilk
Fluoride, total (mg/L)	No	n/a	NP	NaN	27	0.1608	0.0712	x^(1/3)	ShapiroWilk
Fluoride, total (mg/L)	No	n/a	NP	NaN	26	0.1365	0.08202	ln(x)	ShapiroWilk
Fluoride, total (mg/L)	No	n/a	NP	NaN	27	0.1234	0.08084	ln(x)	ShapiroWilk
Fluoride, total (mg/L)	No	n/a	NP	NaN	27	0.1338	0.089	x^6	ShapiroWilk
Fluoride, total (mg/L)	No	n/a	NP	NaN	27	0.3565	0.1393	x^2	ShapiroWilk
Fluoride, total (mg/L)	No	n/a	NP	NaN	27	0.1506	0.06876	ln(x)	ShapiroWilk
Fluoride, total (mg/L)	No	n/a	NP	NaN	27	0.1274	0.08925	ln(x)	ShapiroWilk
Fluoride, total (mg/L)	No	n/a	NP	NaN	27	0.1379	0.07286	ln(x)	ShapiroWilk
Fluoride, total (mg/L)	No	n/a	NP	NaN	27	0.1414	0.0851	x^6	ShapiroWilk
Fluoride, total (mg/L)	No	n/a	NP	NaN	27	0.2178	0.0486	ln(x)	ShapiroWilk
Fluoride, total (mg/L)	No	n/a	NP	NaN	27	0.1542	0.0798	x^(1/3)	ShapiroWilk
pH, field (SU)	No	n/a	NP	NaN	27	7.171	0.5547	ln(x)	ShapiroWilk
pH, field (SU)	No	n/a	NP	NaN	27	5.927	0.4919	normal	ShapiroWilk
pH, field (SU)	No	n/a	NP	NaN	27	6.952	0.5956	ln(x)	ShapiroWilk
pH, field (SU)	No	n/a	NP	NaN	27	5.88	0.6994	ln(x)	ShapiroWilk
pH, field (SU)	No	n/a	NP	NaN	27	7.233	0.415	x^2	ShapiroWilk
pH, field (SU)	No	n/a	NP	NaN	28	6.036	0.4552	ln(x)	ShapiroWilk
pH, field (SU)	No	n/a	NP	NaN	27	6.687	0.5459	x^(1/3)	ShapiroWilk
pH, field (SU)	No	n/a	NP	NaN	27	5.394	0.5146	ln(x)	ShapiroWilk
pH, field (SU)	No	n/a	NP	NaN	28	6.568	0.3488	x^3	ShapiroWilk
pH, field (SU)	No	n/a	NP	NaN	27	7.404	0.4711	ln(x)	ShapiroWilk
pH, field (SU)	No	n/a	NP	NaN	27	7.195	0.4603	ln(x)	ShapiroWilk
Sulfate, total (mg/L)	No	n/a	NP	NaN	24	28.68	3.546	ln(x)	ShapiroWilk
Sulfate, total (mg/L)	No	n/a	NP	NaN	23	43.56	9.427	ln(x)	ShapiroWilk
Sulfate, total (mg/L)	No	n/a	NP	NaN	24	9.848	3.671	ln(x)	ShapiroWilk
Sulfate, total (mg/L)	No	n/a	NP	NaN	24	19.53	5.814	normal	ShapiroWilk
Sulfate, total (mg/L)	No	n/a	NP	NaN	24	20.96	2.991	x^3	ShapiroWilk
Sulfate, total (mg/L)	No	n/a	NP	NaN	24	180.1	159.6	ln(x)	ShapiroWilk
Sulfate, total (mg/L)	No	n/a	NP	NaN	24	10.42	3.135	x^2	ShapiroWilk
Sulfate, total (mg/L)	No	n/a	NP	NaN	24	221.4	30.82	normal	ShapiroWilk
Sulfate, total (mg/L)	No	n/a	NP	NaN	24	23.22	9.823	ln(x)	ShapiroWilk
Sulfate, total (mg/L)	No	n/a	NP	NaN	24	33.68	1.593	x^6	ShapiroWilk
Sulfate, total (mg/L)	No	n/a	NP	NaN	24	26.94	7.952	sqrt(x)	ShapiroWilk

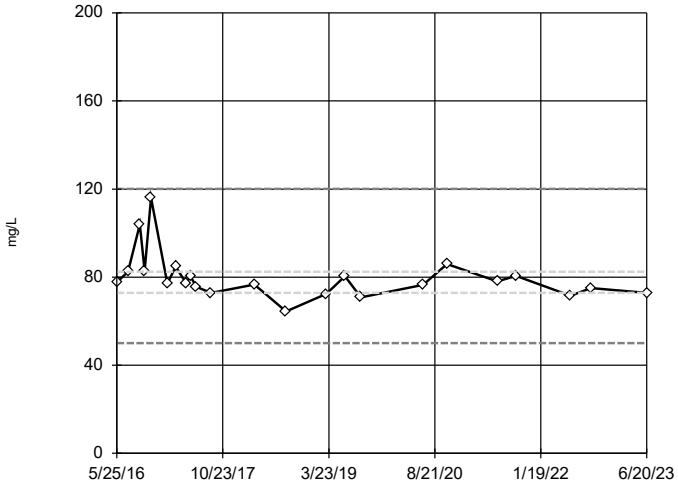
Tukey's Outlier Test - All Results (No Significant)

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 12/5/2023, 12:13 PM

Constituent	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Total Dissolved Solids [TDS] (mg/L)	No	n/a	NP	NaN	24	264.5	18.17	x^(1/3)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	No	n/a	NP	NaN	23	132.3	28.62	ln(x)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	No	n/a	NP	NaN	24	242.6	30.65	x^2	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	No	n/a	NP	NaN	24	75.75	16.98	x^(1/3)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	No	n/a	NP	NaN	24	278.3	19.65	x^4	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	No	n/a	NP	NaN	24	421.3	291.3	ln(x)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	No	n/a	NP	NaN	24	77.5	22.53	ln(x)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	No	n/a	NP	NaN	24	406.1	23.4	x^6	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	No	n/a	NP	NaN	24	191.6	39.53	normal	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	No	n/a	NP	NaN	24	313.3	17.95	ln(x)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	No	n/a	NP	NaN	24	255.7	29.35	x^2	ShapiroWilk

Tukey's Outlier Screening

B-10



n = 23

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 120.1, low cutoff = 50.02, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/5/2023 12:11 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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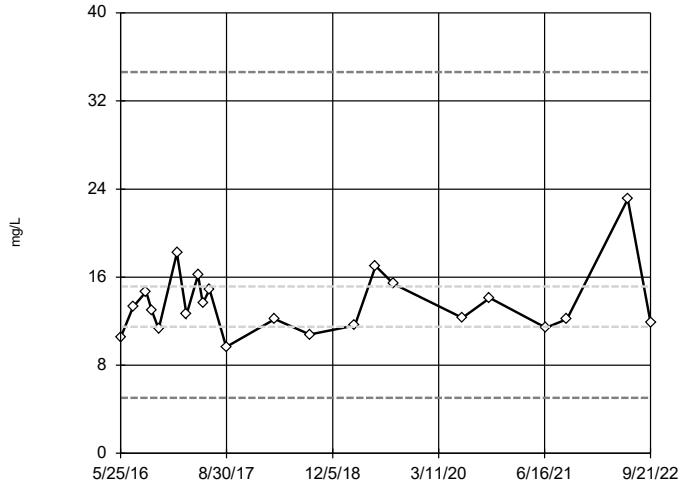
Tukey's Outlier Screening

B-11



n = 22

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 34.62, low cutoff = 5.031, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/5/2023 12:11 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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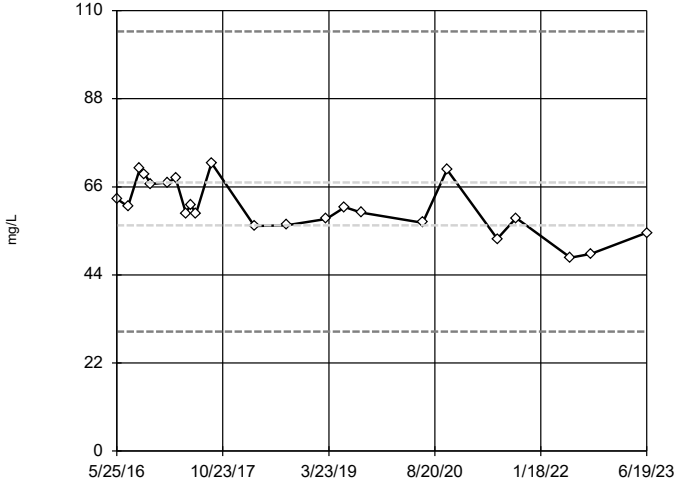
Tukey's Outlier Screening

B-12 (bg)



n = 23

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 104.8, low cutoff = 29.87, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/5/2023 12:11 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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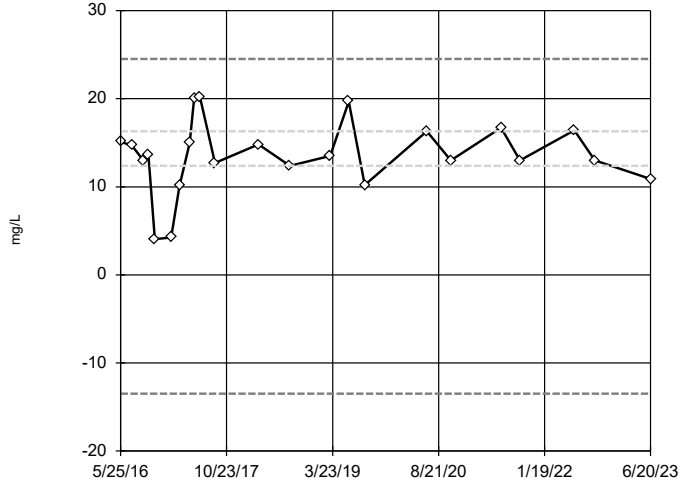
Tukey's Outlier Screening

B-13 (bg)



n = 23

No outliers found. Tukey's method selected by user.

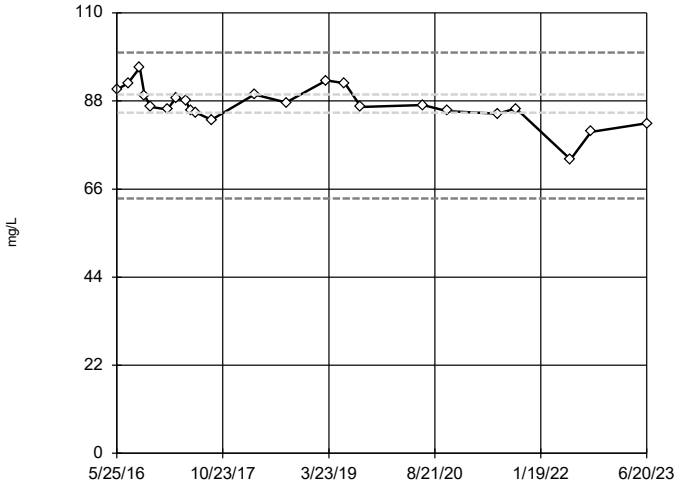
Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 24.53, low cutoff = -13.49, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/5/2023 12:11 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-1B (bg)



n = 23

No outliers found. Tukey's method selected by user.

Data were x^4 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 100.1, low cutoff = 63.67, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/5/2023 12:11 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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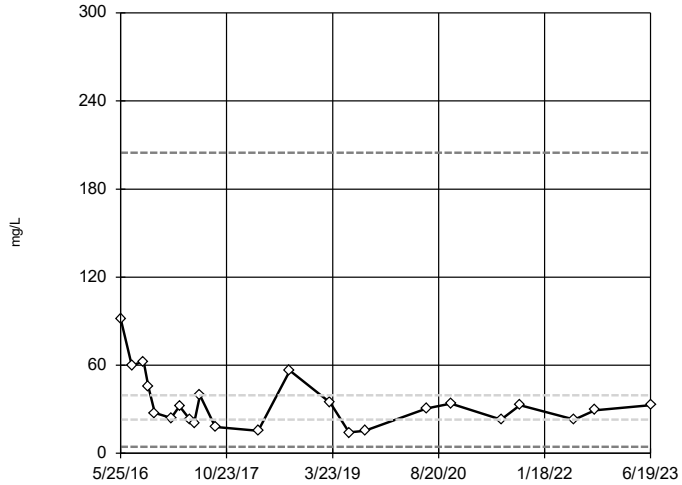
Tukey's Outlier Screening

B-2



n = 23

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 204.8, low cutoff = 4.428, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/5/2023 12:11 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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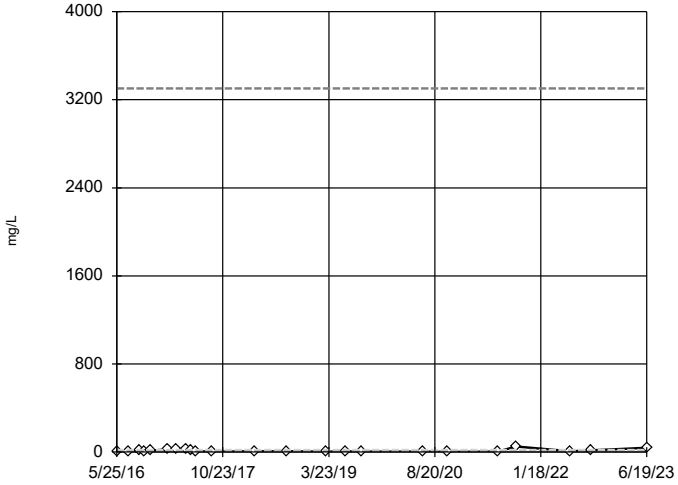
Tukey's Outlier Screening

B-4 (bg)



n = 23

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 3304, low cutoff = 0.02055, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/5/2023 12:11 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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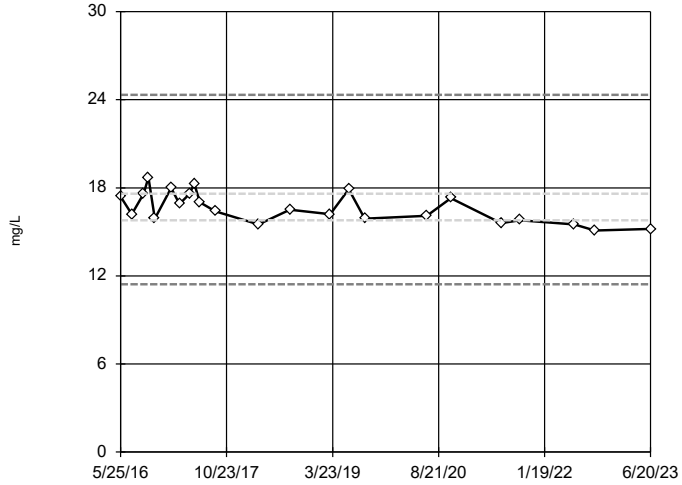
Tukey's Outlier Screening

B-5 (bg)



n = 23

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

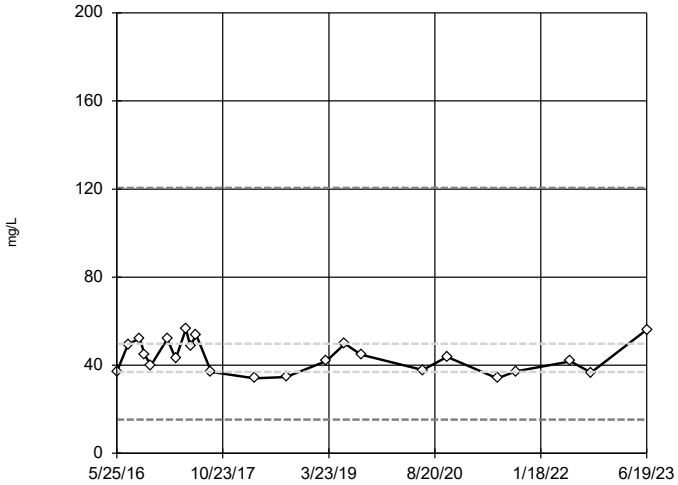
High cutoff = 24.33, low cutoff = 11.43, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/5/2023 12:11 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-6



n = 23

No outliers found. Tukey's method selected by user.

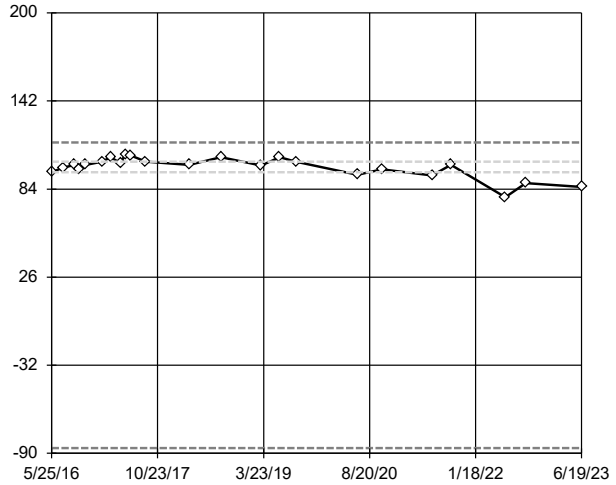
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 120.5, low cutoff = 15.27, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/5/2023 12:11 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-7A (bg)



n = 23

No outliers found. Tukey's method selected by user.

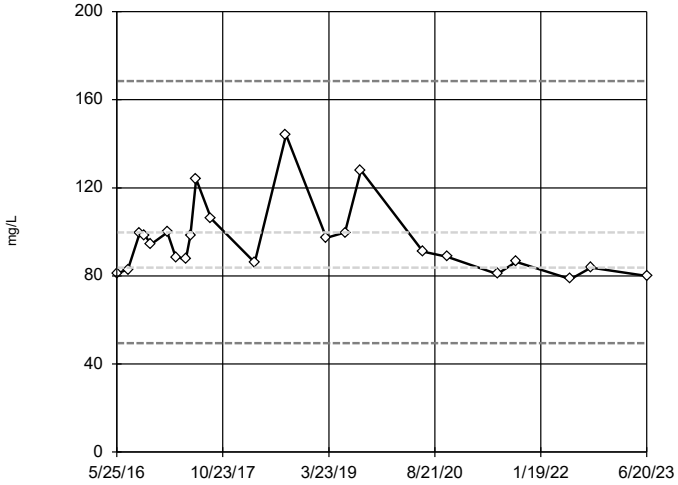
Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 114.8, low cutoff = -86.52, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/5/2023 12:11 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-9



n = 23

No outliers found. Tukey's method selected by user.

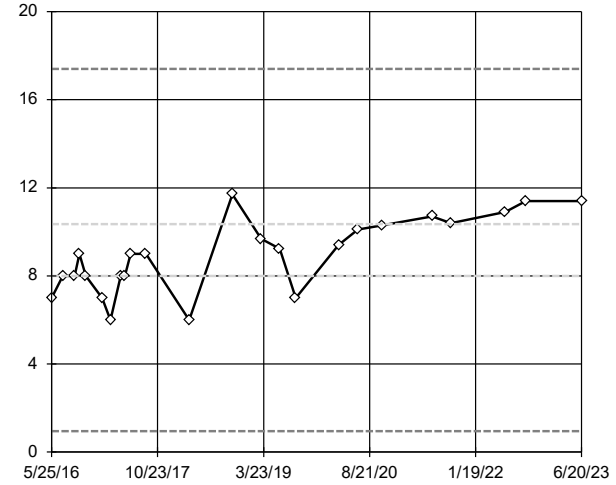
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 168.5, low cutoff = 49.52, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/5/2023 12:11 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-10



n = 24

No outliers found. Tukey's method selected by user.

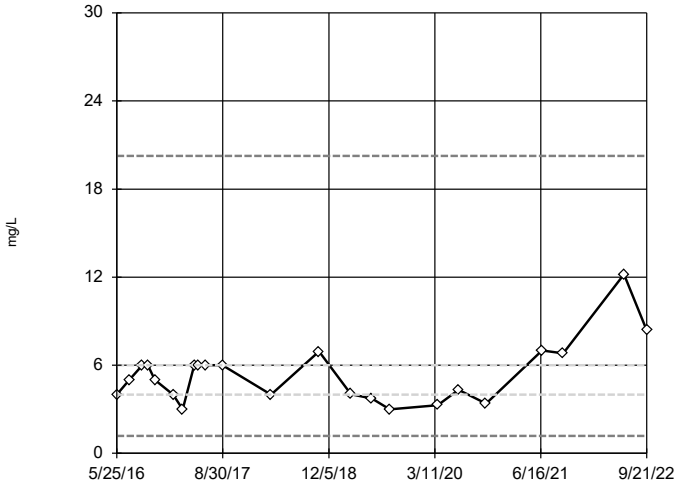
Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 17.4, low cutoff = 0.95, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/5/2023 12:11 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-11



n = 23

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 20.25, low cutoff = 1.185, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/5/2023 12:11 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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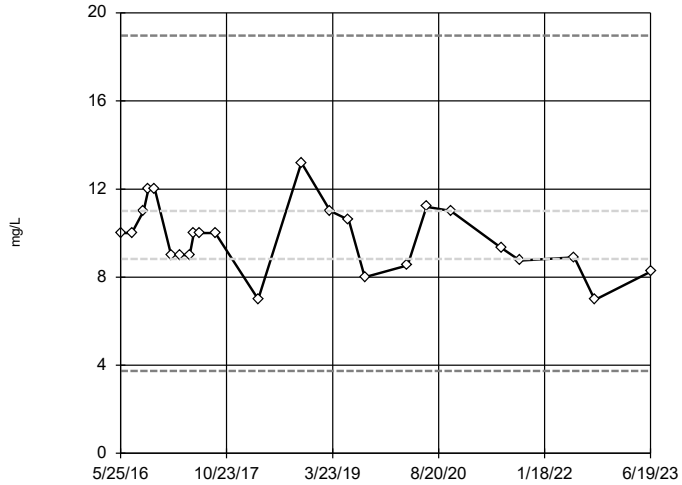
Tukey's Outlier Screening

B-12 (bg)



n = 24

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 18.96, low cutoff = 3.736, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/5/2023 12:11 PM View: Outliers

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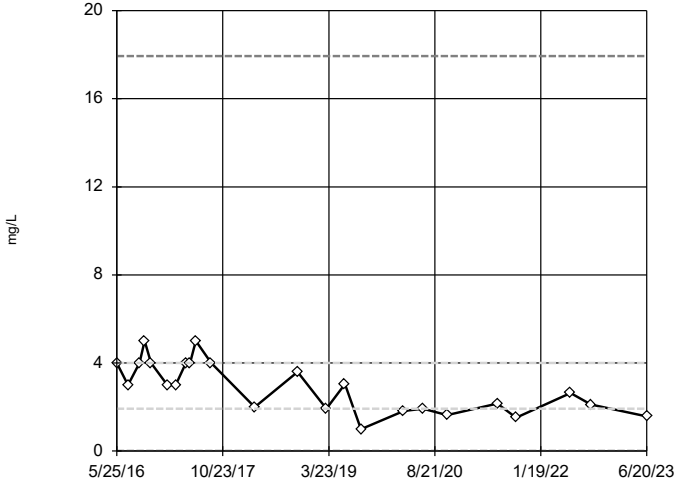
Tukey's Outlier Screening

B-13 (bg)



n = 24

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 17.94, low cutoff = 0.009756, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/5/2023 12:11 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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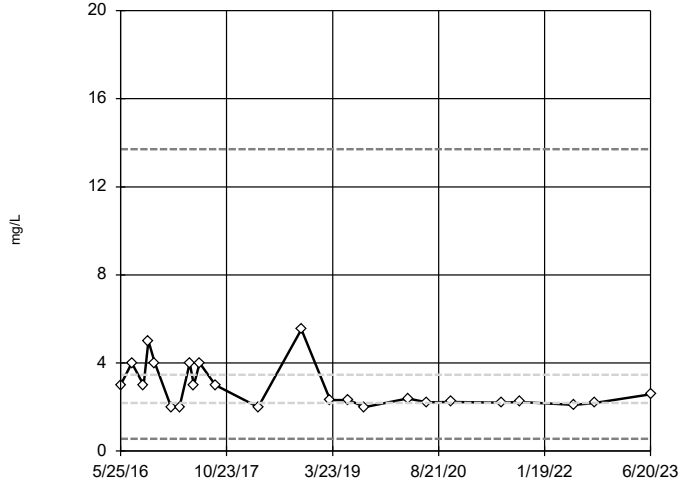
Tukey's Outlier Screening

B-1B (bg)



n = 24

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

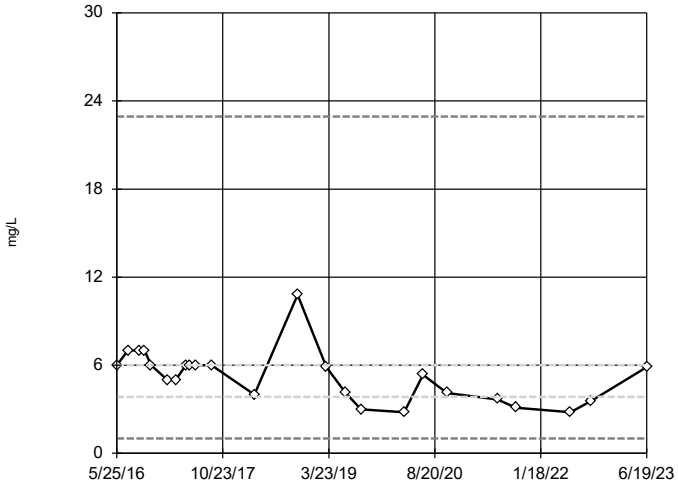
High cutoff = 13.71, low cutoff = 0.5533, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/5/2023 12:11 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-2



n = 24

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

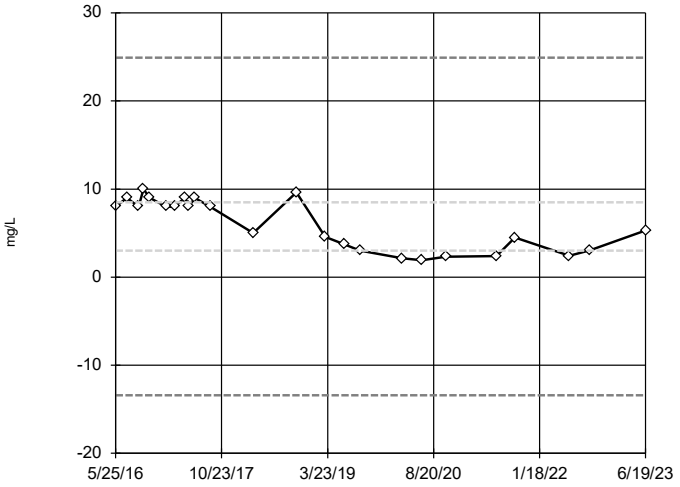
High cutoff = 22.95, low cutoff = 1.003, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/5/2023 12:11 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-4 (bg)



n = 24

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

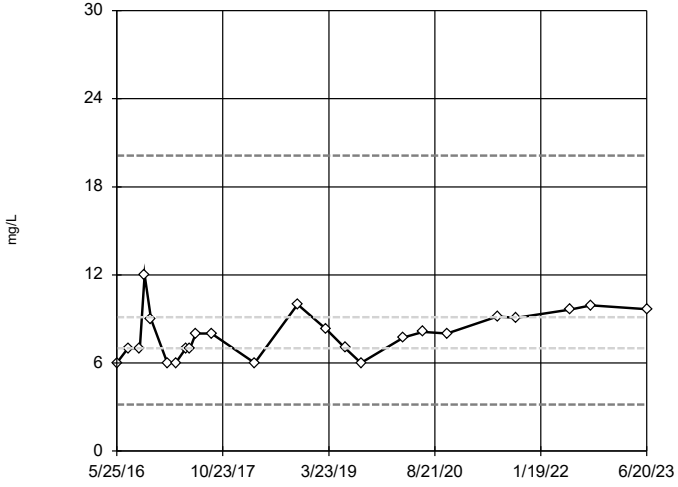
High cutoff = 24.93, low cutoff = -13.4, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/5/2023 12:11 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-5 (bg)



n = 24

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

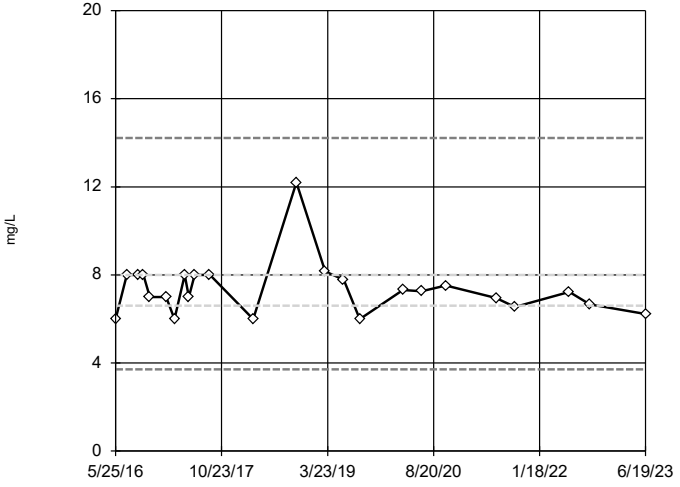
High cutoff = 20.12, low cutoff = 3.171, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/5/2023 12:11 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-6



n = 24

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

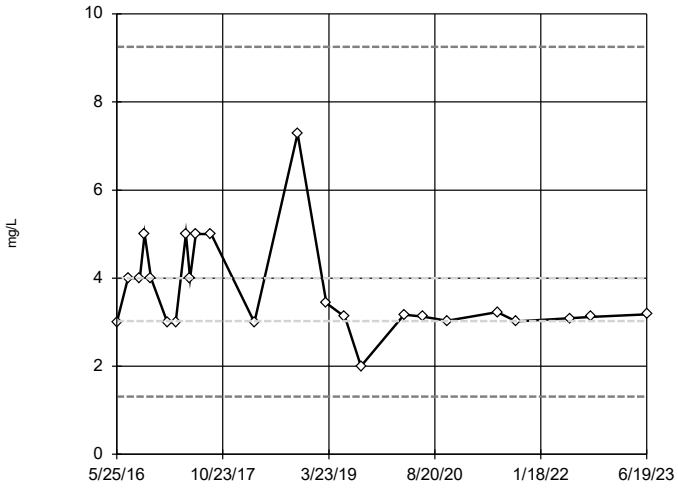
High cutoff = 14.22, low cutoff = 3.717, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/5/2023 12:11 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-7A (bg)



n = 24

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 9.248, low cutoff = 1.308, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/5/2023 12:12 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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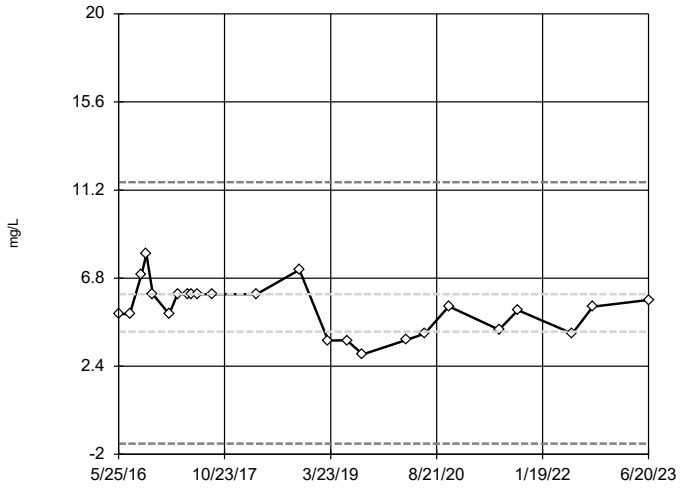
Tukey's Outlier Screening

B-9



n = 24

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 11.6, low cutoff = -1.46, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/5/2023 12:12 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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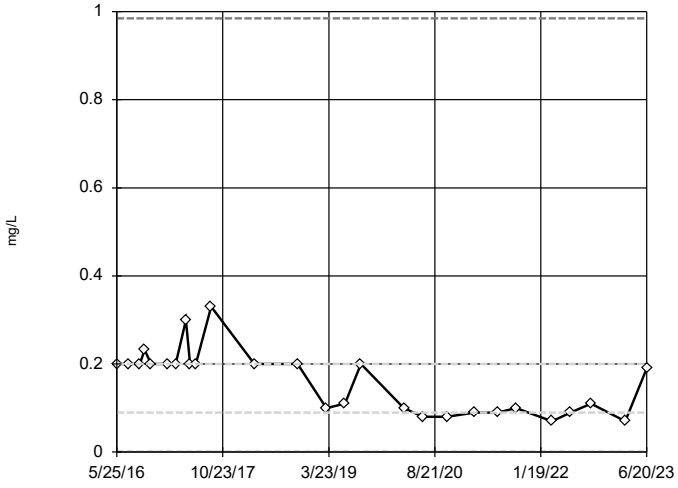
Tukey's Outlier Screening

B-10



n = 27

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.9845, low cutoff = 0.00005553, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:12 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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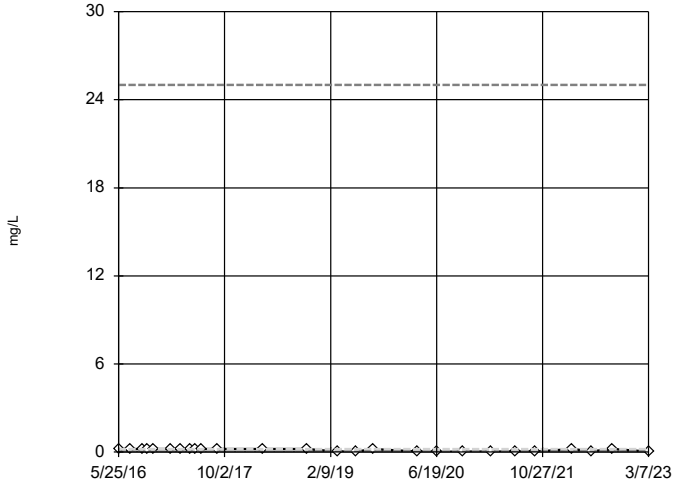
Tukey's Outlier Screening

B-11



n = 26

No outliers found. Tukey's method selected by user.

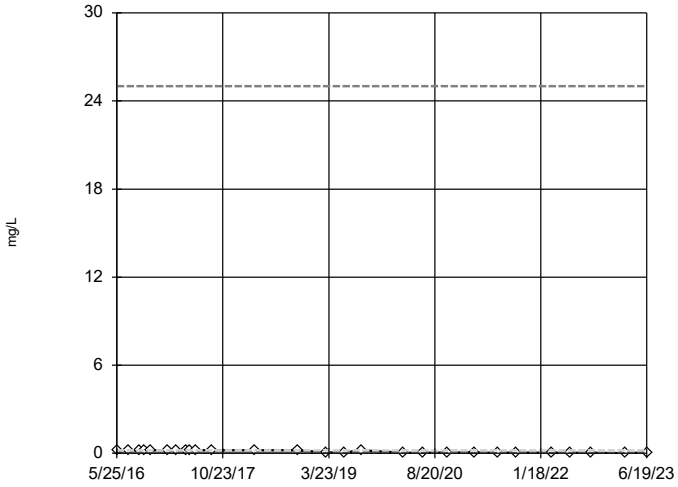
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 25, low cutoff = 0.00032, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:12 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-12 (bg)



n = 27

No outliers found. Tukey's method selected by user.

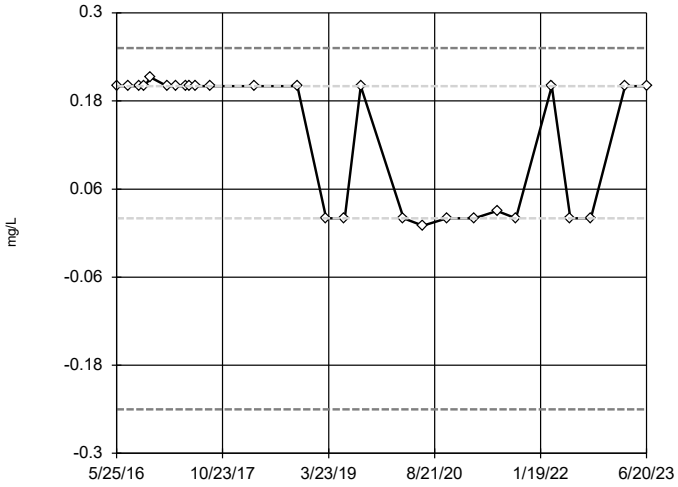
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 25, low cutoff = 0.00032, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:12 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-13 (bg)



n = 27

No outliers found. Tukey's method selected by user.

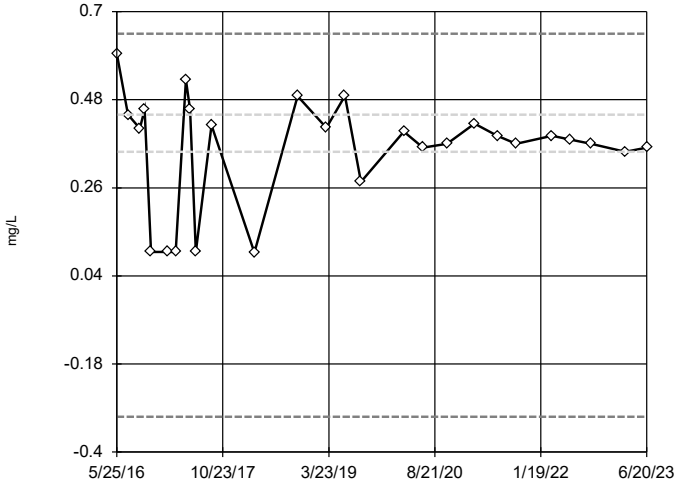
Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.252, low cutoff = -0.2402, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:12 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-1B (bg)



n = 27

No outliers found. Tukey's method selected by user.

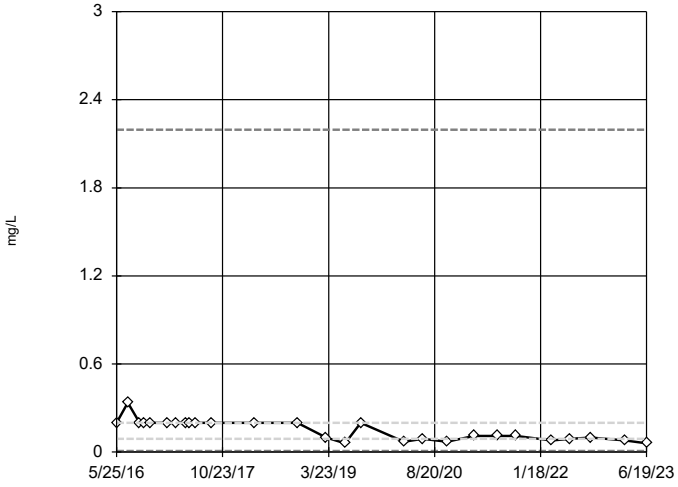
Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.6445, low cutoff = -0.3117, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:12 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-2



n = 27

No outliers found. Tukey's method selected by user.

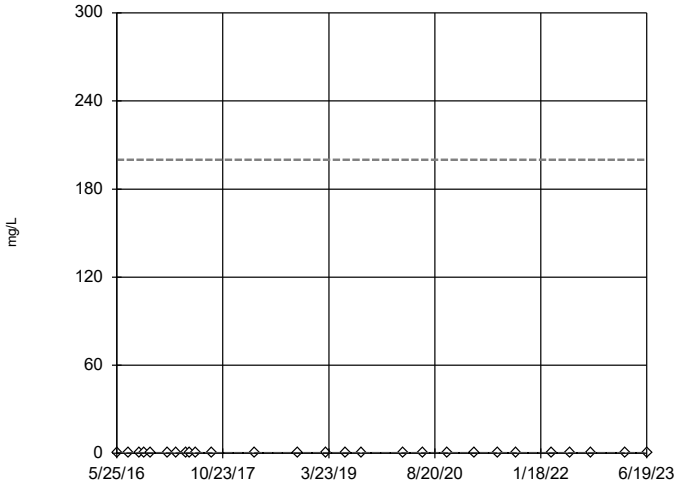
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 2.195, low cutoff = 0.008201, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:12 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-4 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 200, low cutoff = 0.00002, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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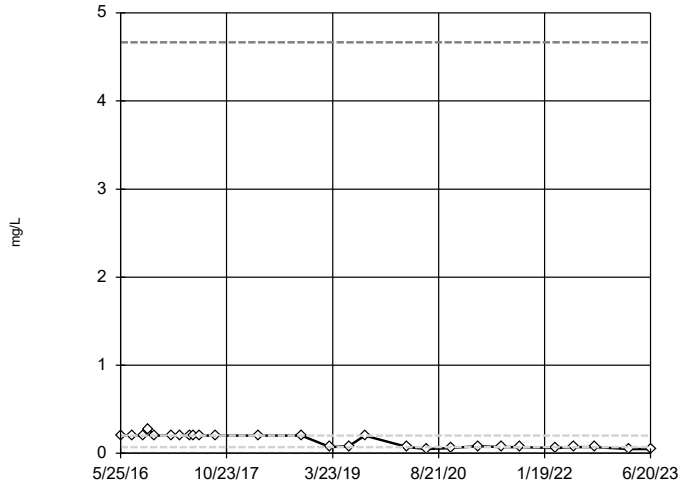
Tukey's Outlier Screening

B-5 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 4.665, low cutoff = 0.003001, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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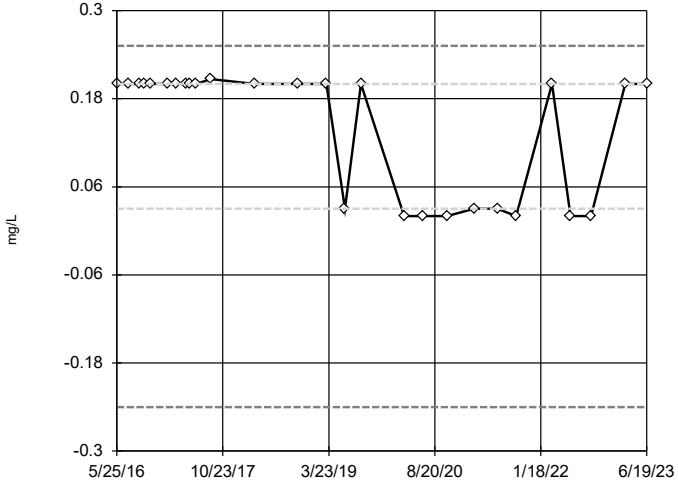
Tukey's Outlier Screening

B-6



n = 27

No outliers found. Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.252, low cutoff = -0.2402, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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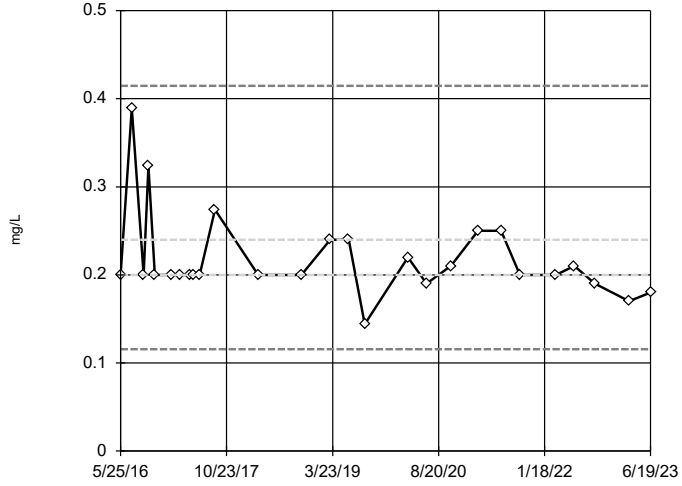
Tukey's Outlier Screening

B-7A (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

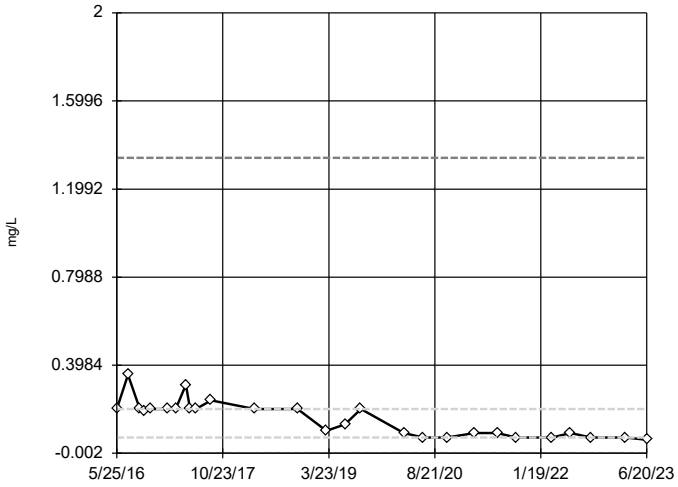
High cutoff = 0.4147, low cutoff = 0.1157, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-9



n = 27

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1.341, low cutoff = -0.001188, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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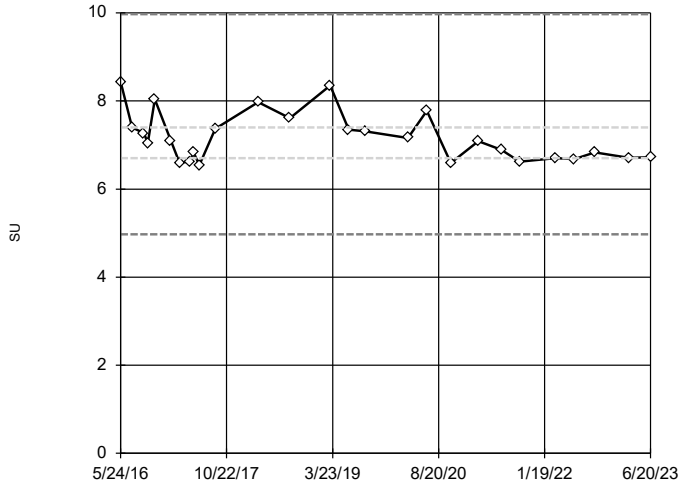
Tukey's Outlier Screening

B-10



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 9.97, low cutoff = 4.973, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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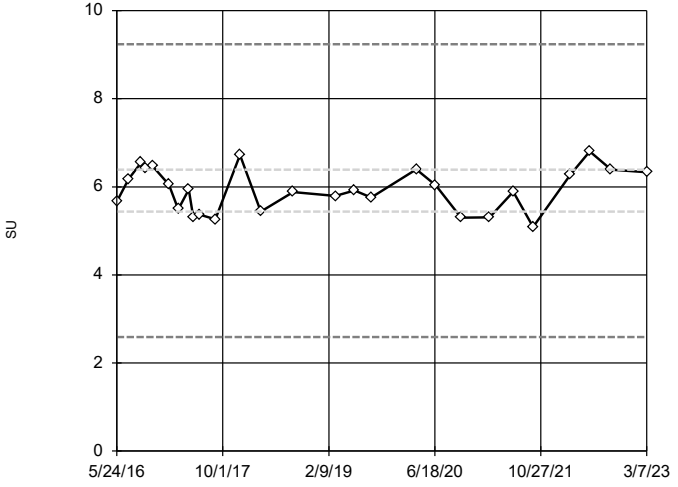
Tukey's Outlier Screening

B-11



n = 27

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 9.24, low cutoff = 2.59, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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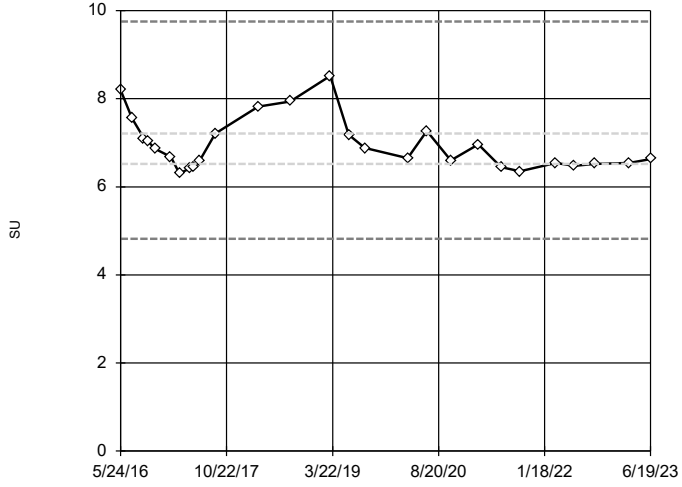
Tukey's Outlier Screening

B-12 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

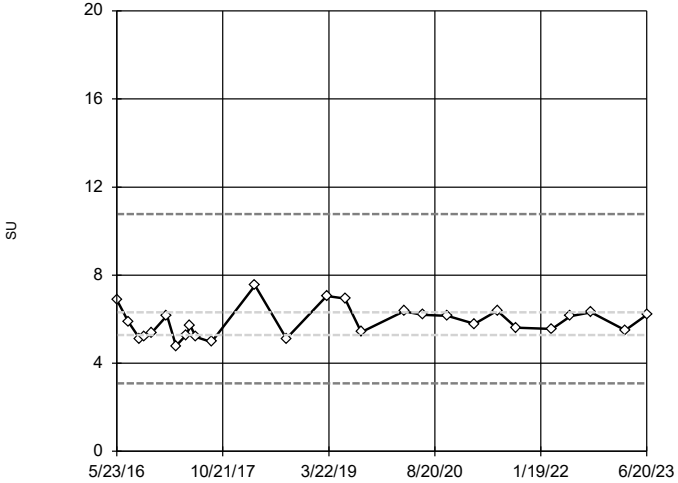
High cutoff = 9.75, low cutoff = 4.822, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-13 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 10.77, low cutoff = 3.093, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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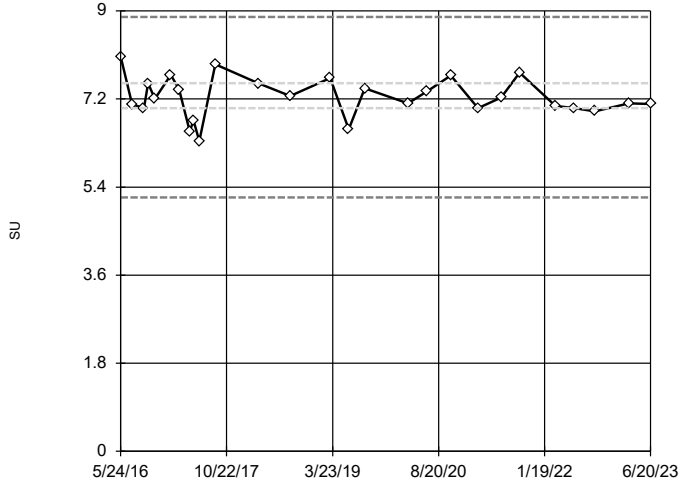
Tukey's Outlier Screening

B-1B (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.876, low cutoff = 5.187, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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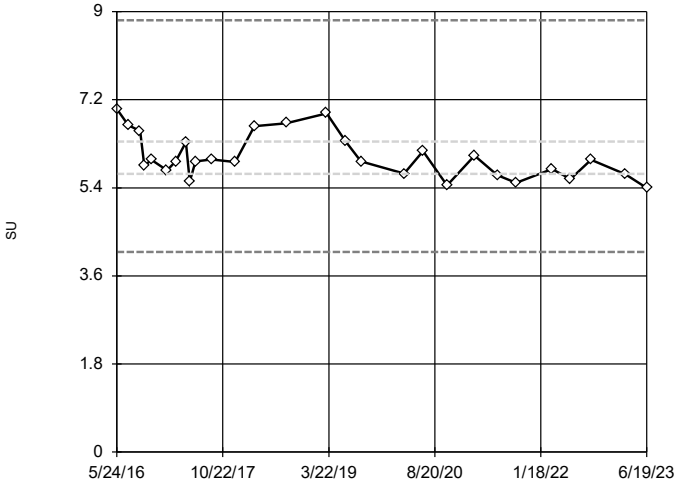
Tukey's Outlier Screening

B-2



n = 28

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.821, low cutoff = 4.089, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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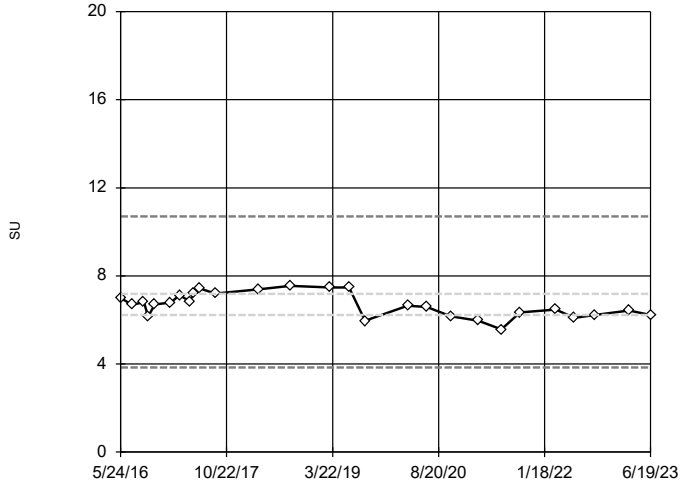
Tukey's Outlier Screening

B-4 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

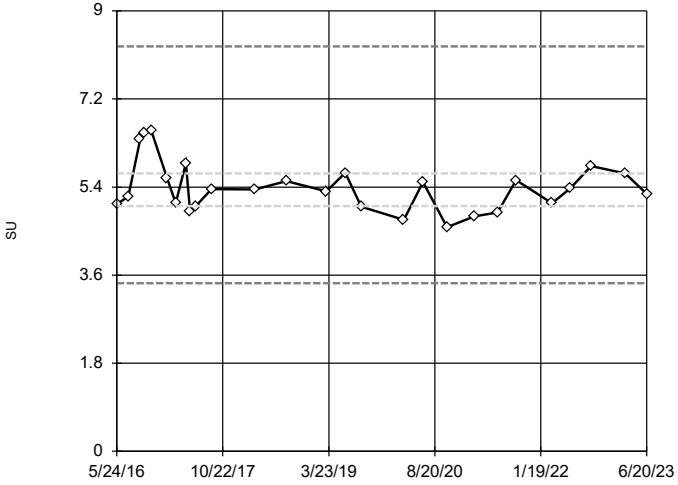
High cutoff = 10.69, low cutoff = 3.84, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-5 (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.277, low cutoff = 3.438, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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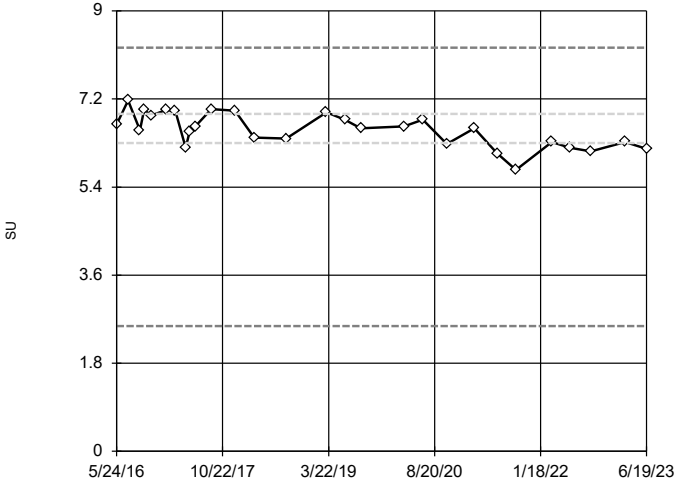
Tukey's Outlier Screening

B-6



n = 28

No outliers found. Tukey's method selected by user.

Data were cube transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.248, low cutoff = 2.559, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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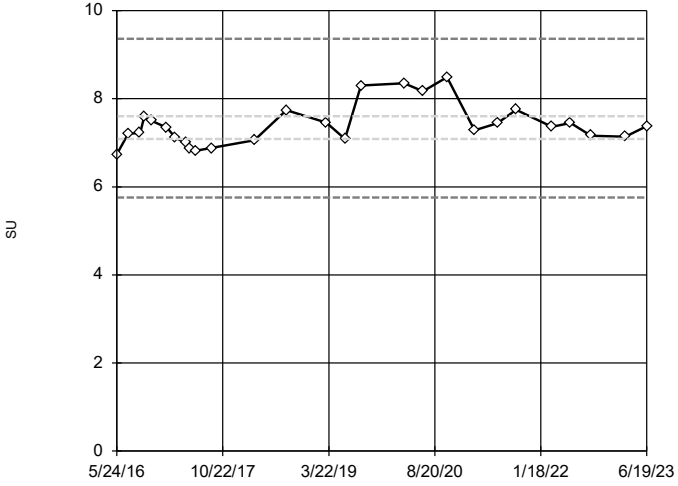
Tukey's Outlier Screening

B-7A (bg)



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 9.361, low cutoff = 5.756, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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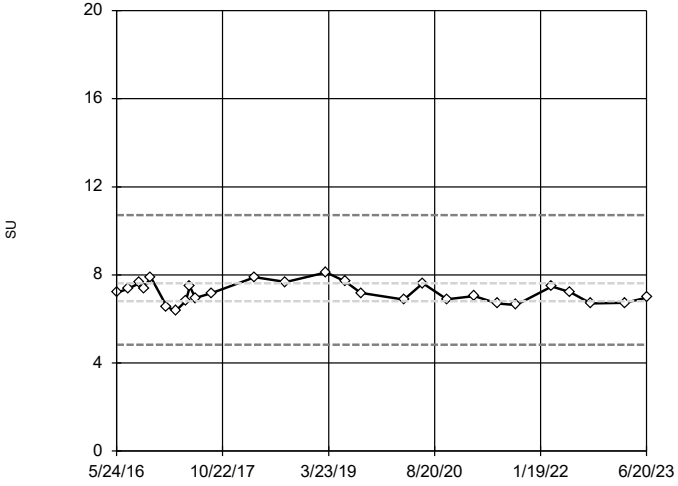
Tukey's Outlier Screening

B-9



n = 27

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

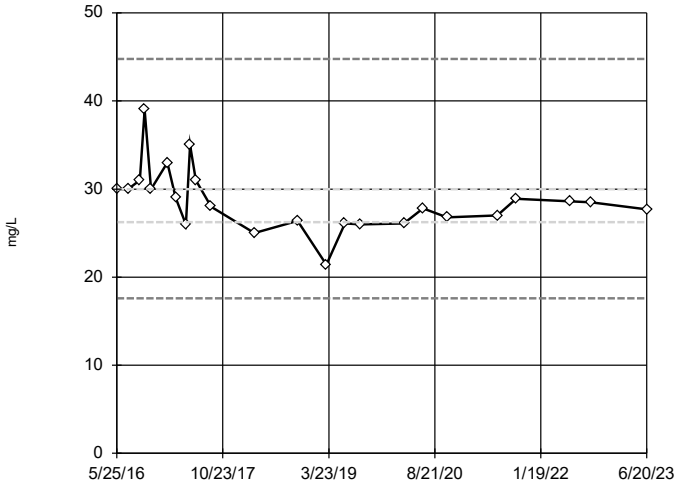
High cutoff = 10.72, low cutoff = 4.832, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-10



n = 24

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 44.78, low cutoff = 17.58, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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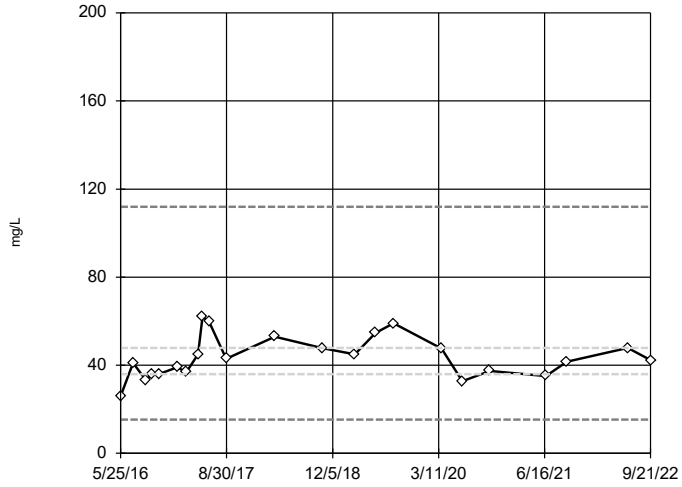
Tukey's Outlier Screening

B-11



n = 23

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 111.9, low cutoff = 15.38, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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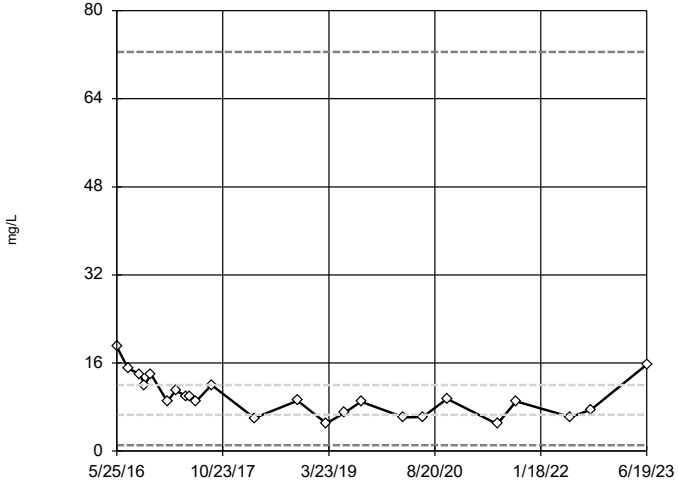
Tukey's Outlier Screening

B-12 (bg)



n = 24

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 72.53, low cutoff = 1.09, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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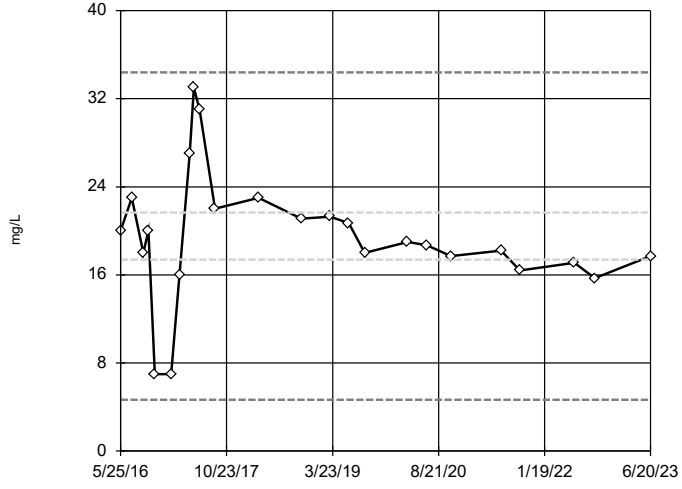
Tukey's Outlier Screening

B-13 (bg)



n = 24

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

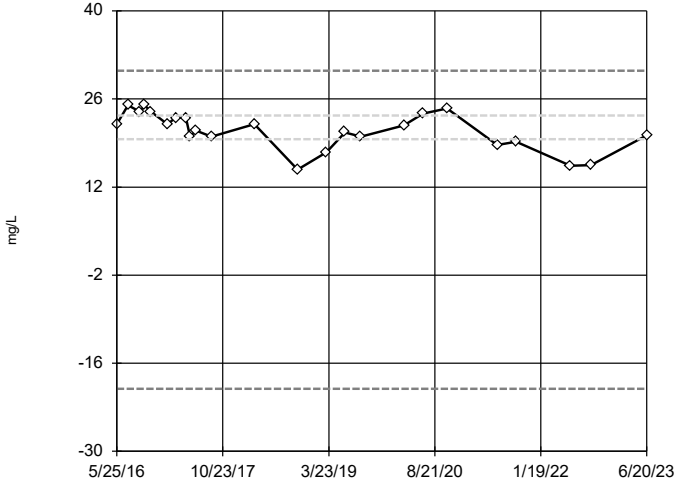
High cutoff = 34.4, low cutoff = 4.65, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-1B (bg)



n = 24

No outliers found. Tukey's method selected by user.

Data were cube transformed to achieve best W statistic (graph shown in original units).

High cutoff = 30.49, low cutoff = -20.05, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:12 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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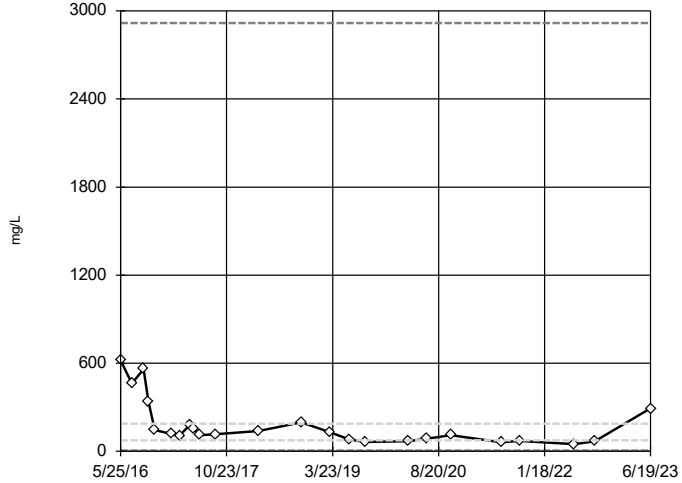
Tukey's Outlier Screening

B-2



n = 24

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 2916, low cutoff = 4.875, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:12 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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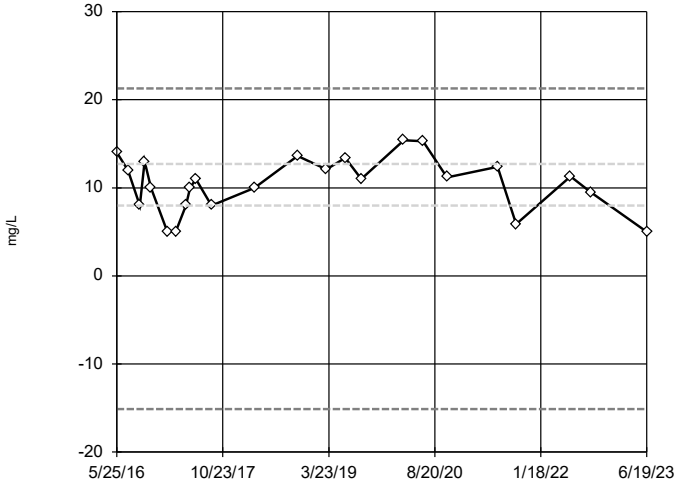
Tukey's Outlier Screening

B-4 (bg)



n = 24

No outliers found. Tukey's method selected by user.

Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 21.3, low cutoff = -15.1, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:12 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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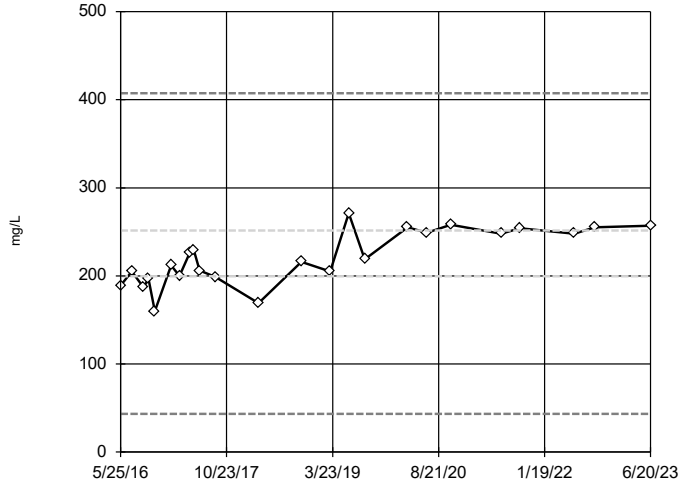
Tukey's Outlier Screening

B-5 (bg)



n = 24

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 407.5, low cutoff = 43.5, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:12 PM View: Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-6

n = 24

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

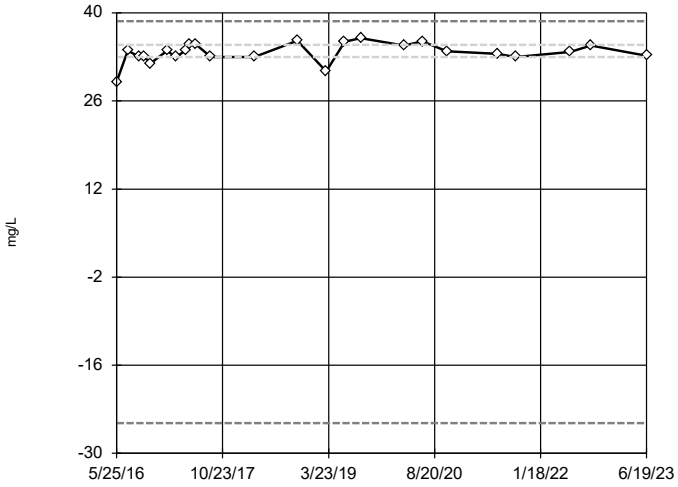
High cutoff = 188.3, low cutoff = 2.393, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-7A (bg)



n = 24

No outliers found. Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

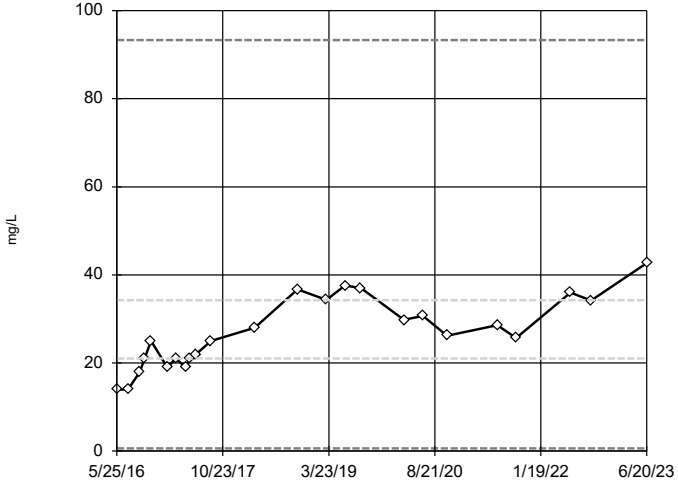
High cutoff = 38.69, low cutoff = -25.19, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-9



n = 24

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

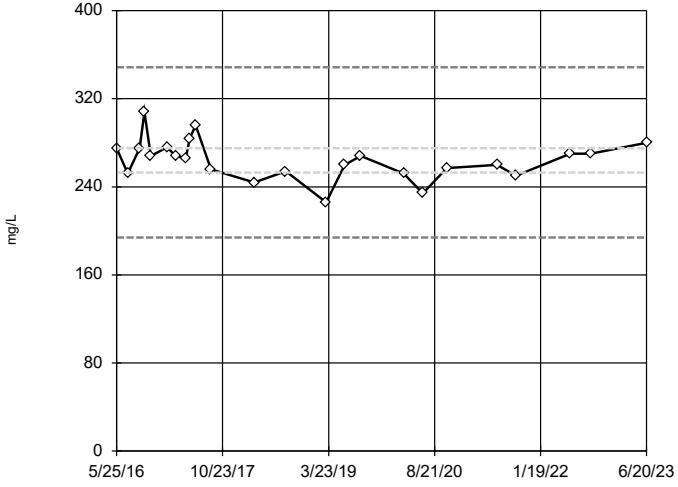
High cutoff = 93.35, low cutoff = 0.5979, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-10



n = 24

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

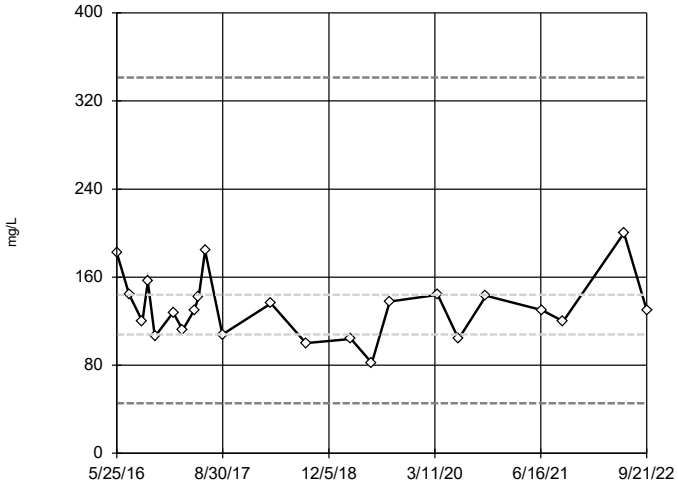
High cutoff = 348.6, low cutoff = 194.1, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-11



n = 23

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 341.3, low cutoff = 45.56, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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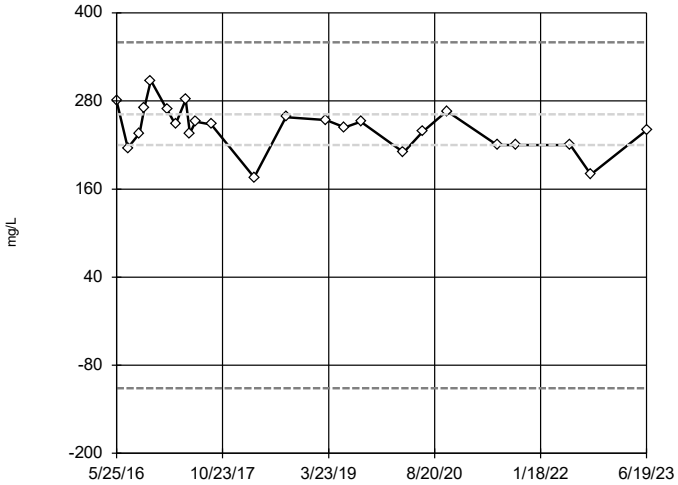
Tukey's Outlier Screening

B-12 (bg)



n = 24

No outliers found. Tukey's method selected by user.

Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 359.8, low cutoff = -111.3, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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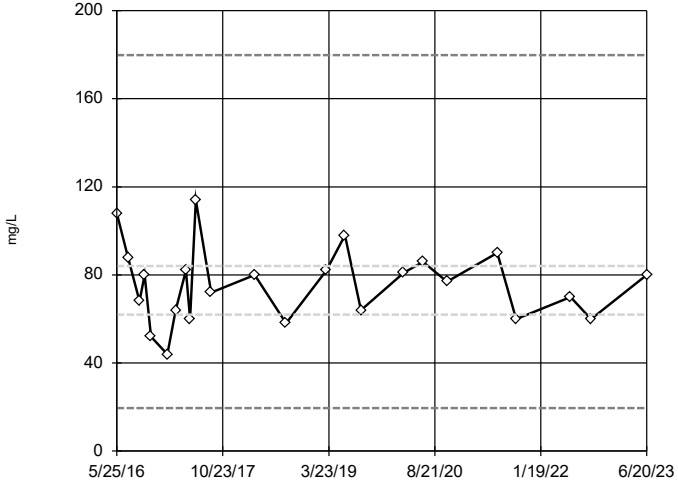
Tukey's Outlier Screening

B-13 (bg)



n = 24

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 179.9, low cutoff = 19.51, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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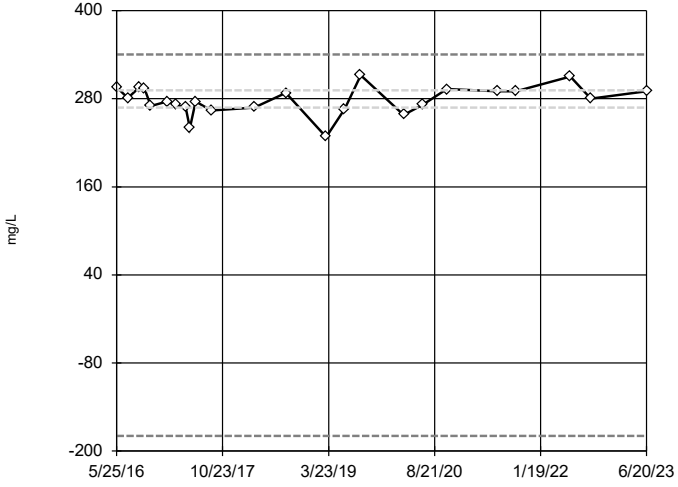
Tukey's Outlier Screening

B-1B (bg)



n = 24

No outliers found. Tukey's method selected by user.

Data were x^4 transformed to achieve best W statistic (graph shown in original units).

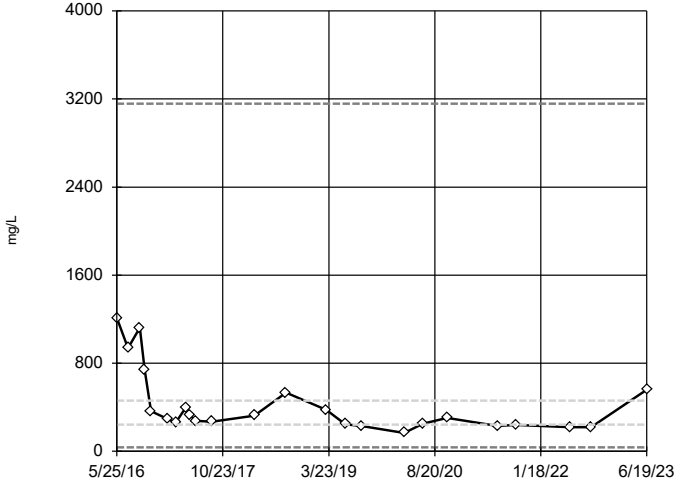
High cutoff = 340.3, low cutoff = -179.1, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-2



n = 24

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 3157, low cutoff = 35.51, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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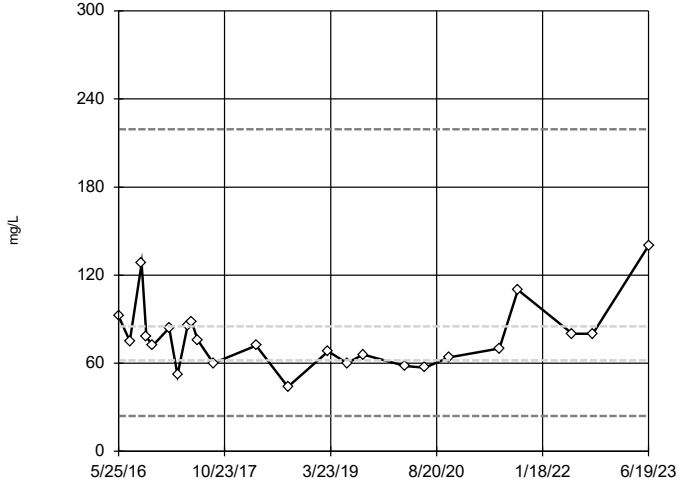
Tukey's Outlier Screening

B-4 (bg)



n = 24

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 219.3, low cutoff = 24.02, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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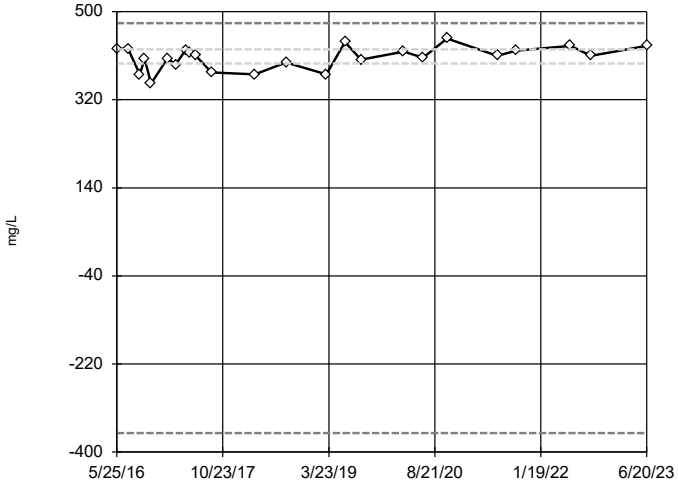
Tukey's Outlier Screening

B-5 (bg)



n = 24

No outliers found. Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 476.4, low cutoff = -361.1, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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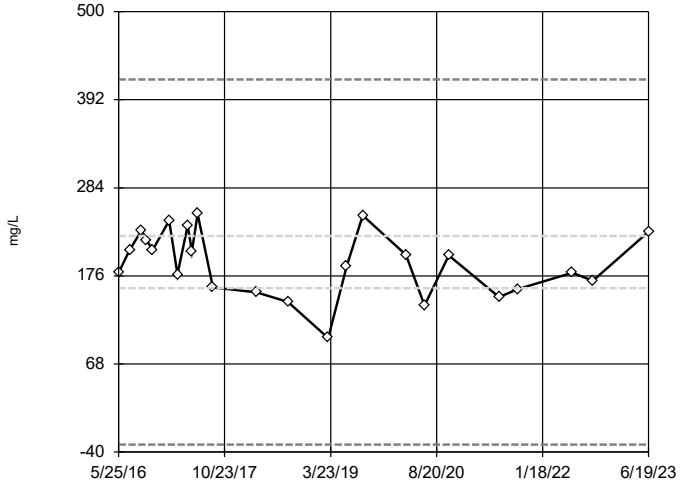
Tukey's Outlier Screening

B-6



n = 24

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

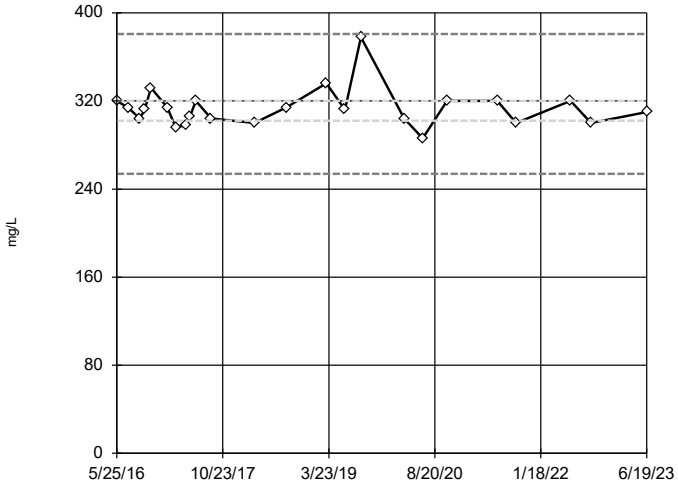
High cutoff = 417, low cutoff = -31, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening

B-7A (bg)



n = 24

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 380.7, low cutoff = 253.8, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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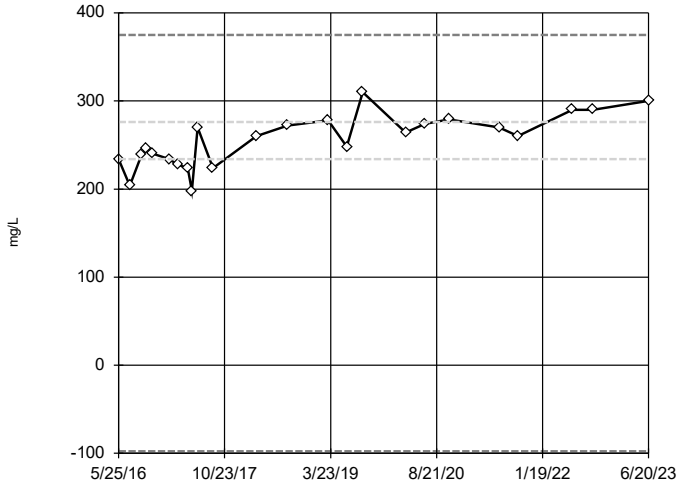
Tukey's Outlier Screening

B-9



n = 24

No outliers found. Tukey's method selected by user.

Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 374.8, low cutoff = -97.55, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:12 PM View: Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Test - Upgradient Wells - Significant Results

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 12/13/2023, 3:53 PM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Barium, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.123,0.123,0.123,0.112,0.112,0.112,0.112,0.112,0**	**NP**	**NaN**	**162**	**0.06056**	**0.02718**	**x^6**	**ChiSquared**
Boron, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.0579,0.0588,0.07,0.07,0.056,0.107,0.1,0.092,0.0**	**NP**	**NaN**	**144**	**0.02949**	**0.01847**	**x^5**	**ChiSquared**
Chromium, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.022,0.004,0.004,0.003,0.003,0.003,0.003,0.003,0**	**NP**	**NaN**	**162**	**0.001399**	**0.002029**	**x^4**	**ChiSquared**
Cobalt, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.003362,0.002846,0.002534,0.002315,0.023,0.00176**	**NP**	**NaN**	**162**	**0.0009518**	**0.002118**	**x^3**	**ChiSquared**
Combined Radium 226 + 228 (pCi/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**4.62,8.375,8.79,4.63,5.15,4.49,6.51,5.96,4.73,5.3**	**NP**	**NaN**	**156**	**2.288**	**2.028**	**x^5**	**ChiSquared**
Fluoride, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.5955,0.4424,0.4087,0.4557,0.53,0.4551,0.416,0.4**	**NP**	**NaN**	**168**	**0.1826**	**0.1227**	**x^4**	**ChiSquared**
Lithium, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.05,0.05,0.05,0.028,0.028,0.028,0.041,0.027,0.02**	**NP**	**NaN**	**162**	**0.01092**	**0.01353**	**x^5**	**ChiSquared**
Selenium, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.0004,0.0004,0.0004,0.0004,0.0004,0.0004,0.0004,**	**NP**	**NaN**	**162**	**0.006504**	**0.01356**	**normal**	**ChiSquared**

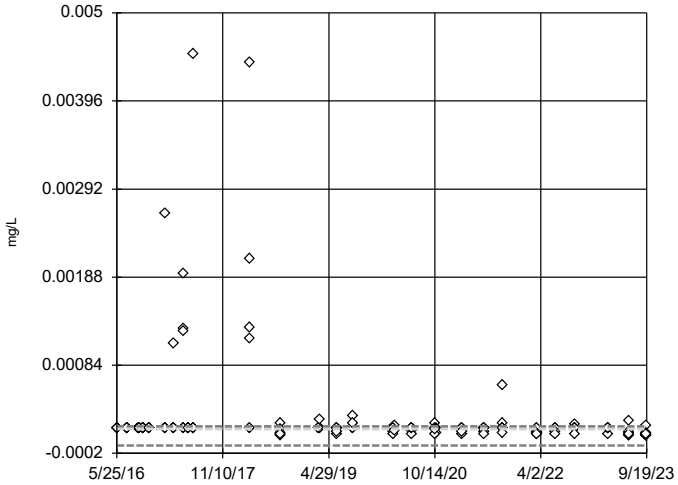
Tukey's Outlier Test - Upgradient Wells - All Results

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 12/13/2023, 3:53 PM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Antimony, total (mg/L)	B-12,B-13,B-1B,B-...	n/a	n/a	NP	NaN	162	0.0002189	0.0005908	unknown	ChiSquared
Arsenic, total (mg/L)	B-12,B-13,B-1B,B-...	n/a	n/a	NP	NaN	162	0.0009426	0.001681	unknown	ChiSquared
Barium, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.123,0.123,0.123,0.112,0.112,0.112,0.112,0.112,0**	**NP**	**NaN**	**162**	**0.06056**	**0.02718**	**x^6**	**ChiSquared**
Beryllium, total (mg/L)	B-12,B-13,B-1B,B-...	n/a	n/a	NP	NaN	162	0.000162	0.0001924	unknown	ChiSquared
Boron, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.0579,0.0588,0.07,0.07,0.056,0.107,0.1,0.092,0.0**	**NP**	**NaN**	**144**	**0.02949**	**0.01847**	**x^5**	**ChiSquared**
Cadmium, total (mg/L)	B-12,B-13,B-1B,B-...	n/a	n/a	NP	NaN	162	0.0000635	0.0001056	unknown	ChiSquared
Chromium, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.022,0.004,0.004,0.003,0.003,0.003,0.003,0.003,0**	**NP**	**NaN**	**162**	**0.001399**	**0.002029**	**x^4**	**ChiSquared**
Cobalt, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.003362,0.002846,0.002534,0.002315,0.023,0.00176**	**NP**	**NaN**	**162**	**0.0009518**	**0.002118**	**x^3**	**ChiSquared**
Combined Radium 226 + 228 (pCi/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**4.62,8.375,8.79,4.63,5.15,4.49,6.51,5.96,4.73,5.3**	**NP**	**NaN**	**156**	**2.288**	**2.028**	**x^5**	**ChiSquared**
Fluoride, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.5955,0.4424,0.4087,0.4557,0.53,0.4551,0.416,0.4**	**NP**	**NaN**	**168**	**0.1826**	**0.1227**	**x^4**	**ChiSquared**
Lead, total (mg/L)	B-12,B-13,B-1B,B-...	n/a	n/a	NP	NaN	162	0.000475	0.001258	unknown	ChiSquared
Lithium, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.05,0.05,0.05,0.028,0.028,0.028,0.041,0.027,0.02**	**NP**	**NaN**	**162**	**0.01092**	**0.01353**	**x^5**	**ChiSquared**
Mercury, total (mg/L)	B-12,B-13,B-1B,B-...	n/a	n/a	NP	NaN	162	0.000008765	0.00001186	unknown	ChiSquared
Molybdenum, total (mg/L)	B-12,B-13,B-1B,B-...	n/a	n/a	NP	NaN	162	0.0006575	0.0006129	unknown	ChiSquared
Selenium, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.0004,0.0004,0.0004,0.0004,0.0004,0.0004,0.0004,**	**NP**	**NaN**	**162**	**0.006504**	**0.01356**	**normal**	**ChiSquared**
Thallium, total (mg/L)	B-12,B-13,B-1B,B-...	n/a	n/a	NP	NaN	162	0.0002267	0.0002145	unknown	ChiSquared

Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 162

No outliers found.
Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Antimony, total Analysis Run 12/13/2023 3:50 PM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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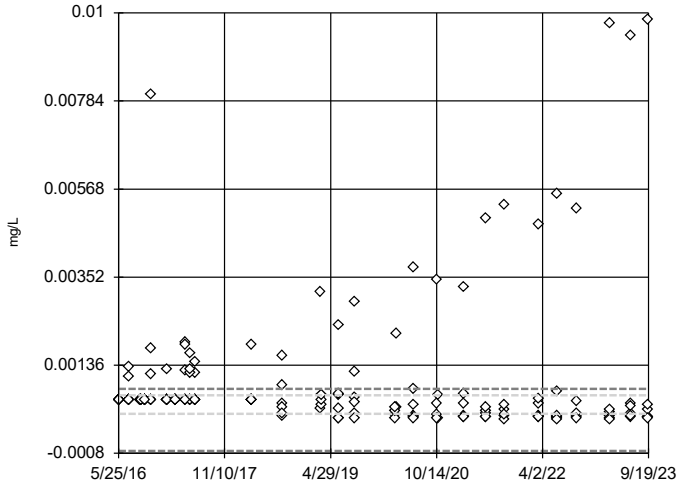
Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 162

No outliers found.
Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Arsenic, total Analysis Run 12/13/2023 3:50 PM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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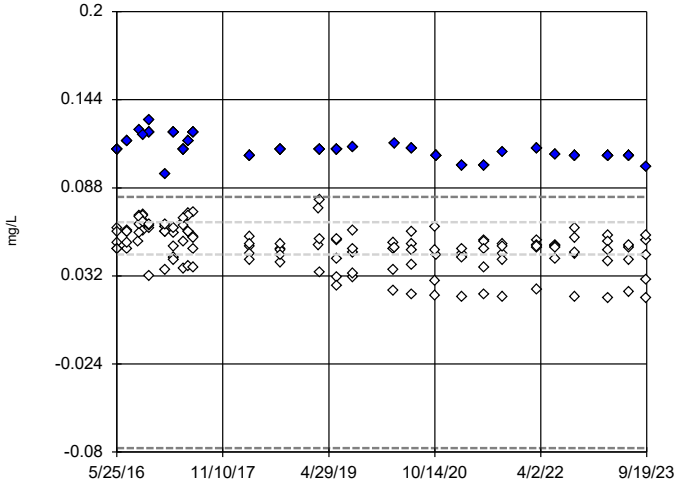
Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 162

Outliers are drawn as solid.
Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.08214, low cutoff = -0.07738, based on IQR multiplier of 3.

Constituent: Barium, total Analysis Run 12/13/2023 3:50 PM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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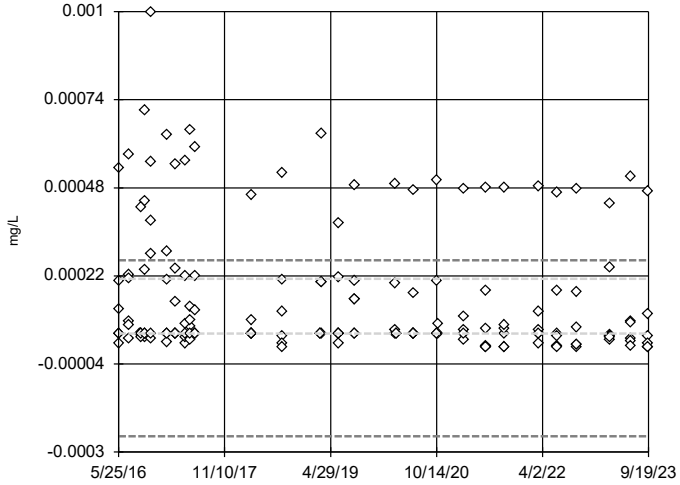
Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 162

No outliers found.
Tukey's method selected by user.

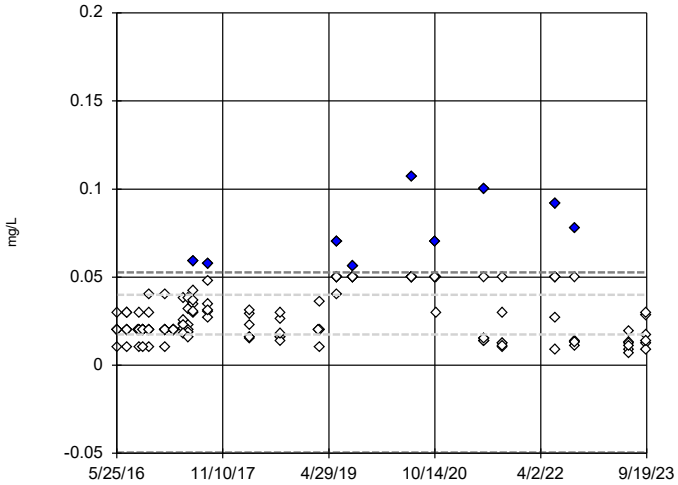
Data were x^6 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Beryllium, total Analysis Run 12/13/2023 3:50 PM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 144

Outliers are drawn as solid.
Tukey's method selected by user.

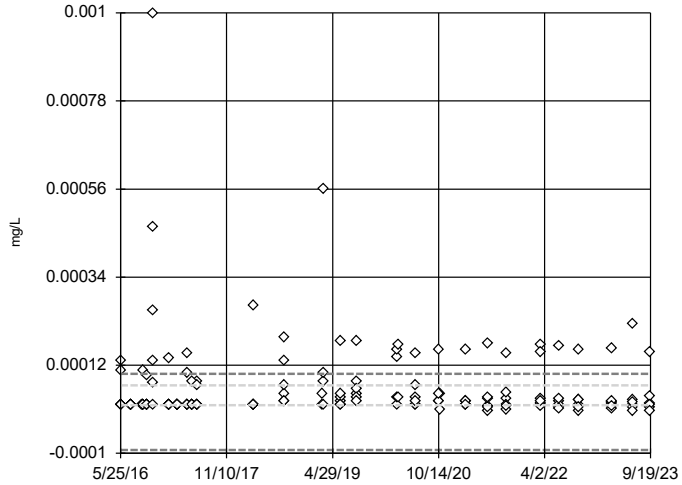
Data were x^5 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.05265, low cutoff = -0.04962, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/13/2023 3:50 PM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 162

No outliers found.
Tukey's method selected by user.

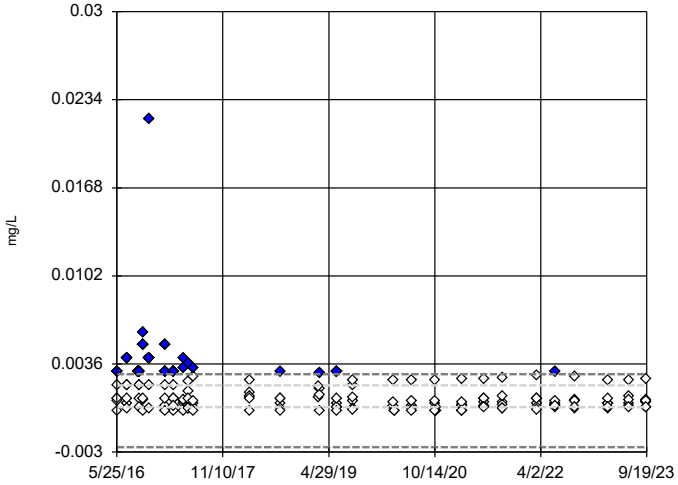
Data were x^4 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Cadmium, total Analysis Run 12/13/2023 3:50 PM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 162

Outliers are drawn as solid.
Tukey's method selected by user.

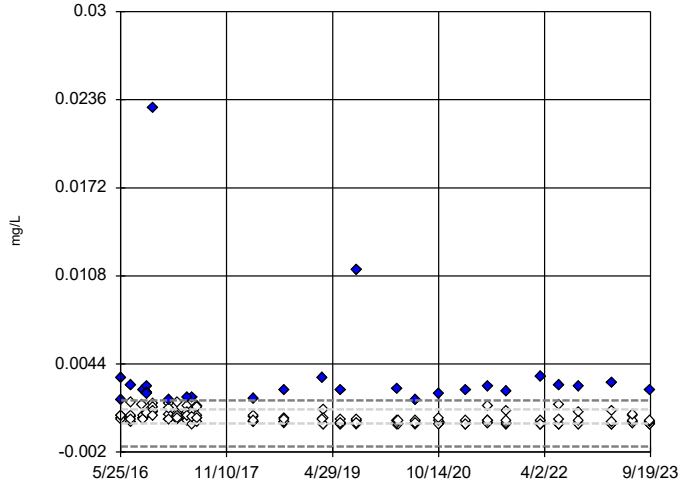
Data were x^4 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.002828, low cutoff = -0.002631, based on IQR multiplier of 3.

Constituent: Chromium, total Analysis Run 12/13/2023 3:50 PM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 162

Outliers are drawn as solid.
Tukey's method selected by user.

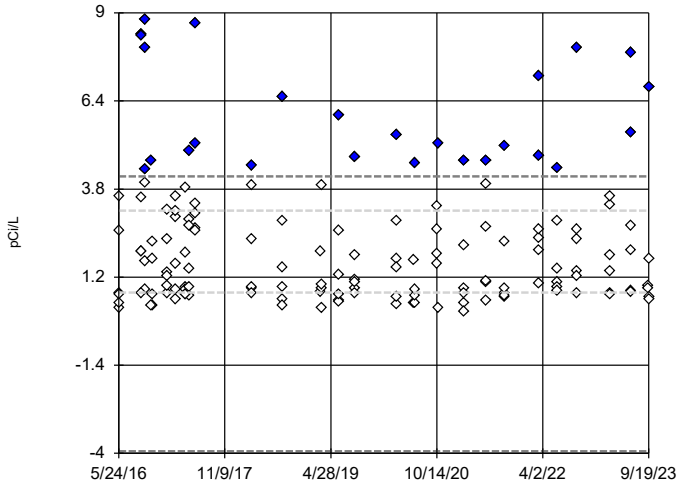
Data were cube transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.001752, low cutoff = -0.001591, based on IQR multiplier of 3.

Constituent: Cobalt, total Analysis Run 12/13/2023 3:50 PM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 156

Outliers are drawn as solid.
Tukey's method selected by user.

Data were x^5 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 4.177, low cutoff = -3.943, based on IQR multiplier of 3.

Constituent: Combined Radium 226 + 228 Analysis Run 12/13/2023 3:50 PM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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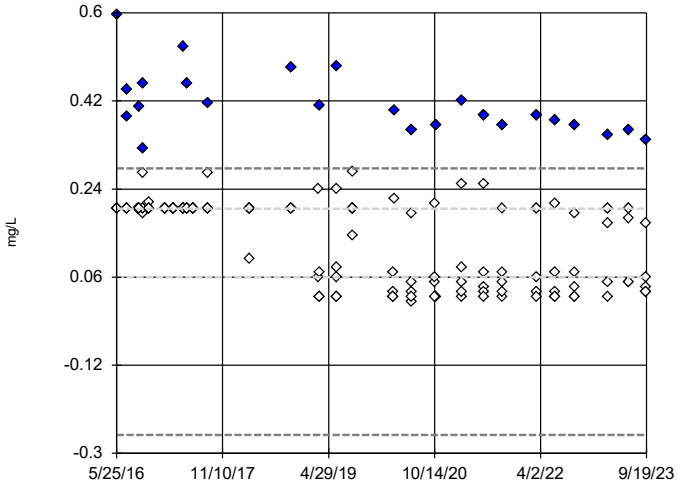
Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 168

Outliers are drawn as solid.
Tukey's method selected by user.

Data were x^4 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.2824, low cutoff = -0.2625, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/13/2023 3:50 PM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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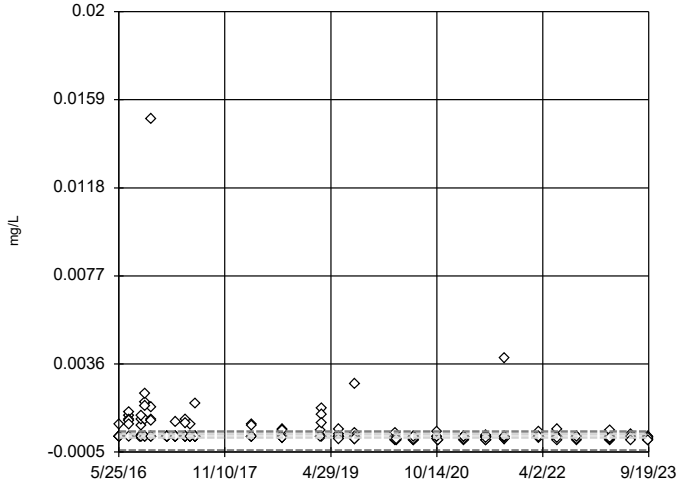
Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 162

No outliers found.
Tukey's method selected by user.

Data were x^4 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Lead, total Analysis Run 12/13/2023 3:50 PM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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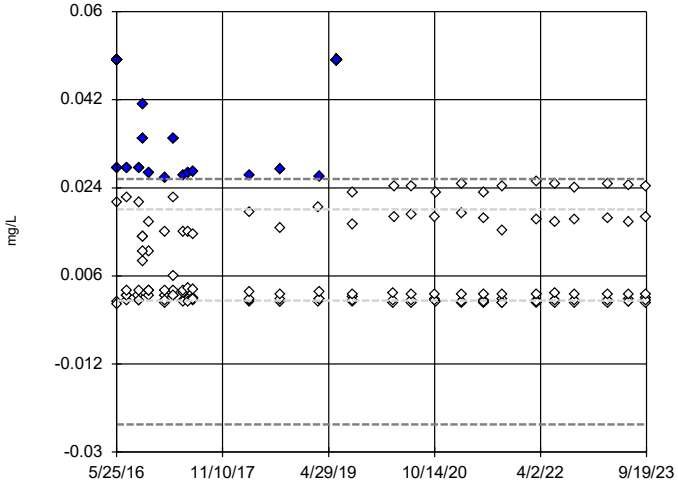
Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 162

Outliers are drawn as solid.
Tukey's method selected by user.

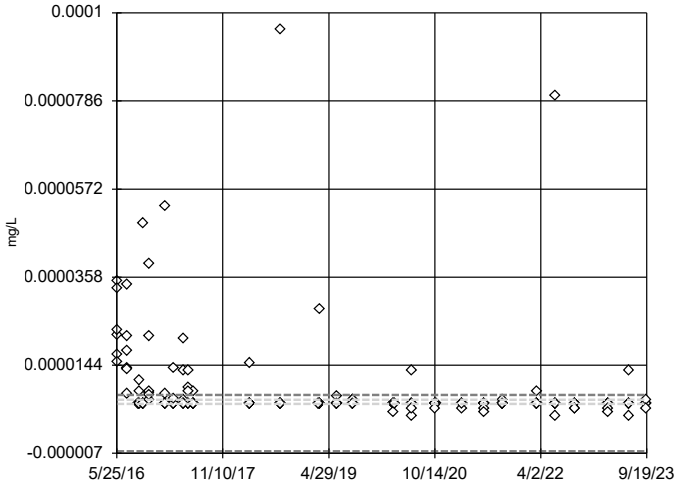
Data were x^5 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.02582, low cutoff = -0.02438, based on IQR multiplier of 3.

Constituent: Lithium, total Analysis Run 12/13/2023 3:50 PM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 162

No outliers found.
Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Mercury, total Analysis Run 12/13/2023 3:50 PM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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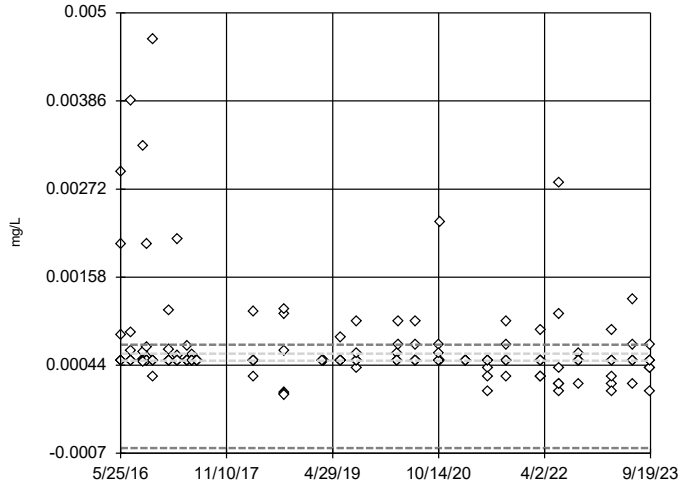
Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 162

No outliers found.
Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Molybdenum, total Analysis Run 12/13/2023 3:50 PM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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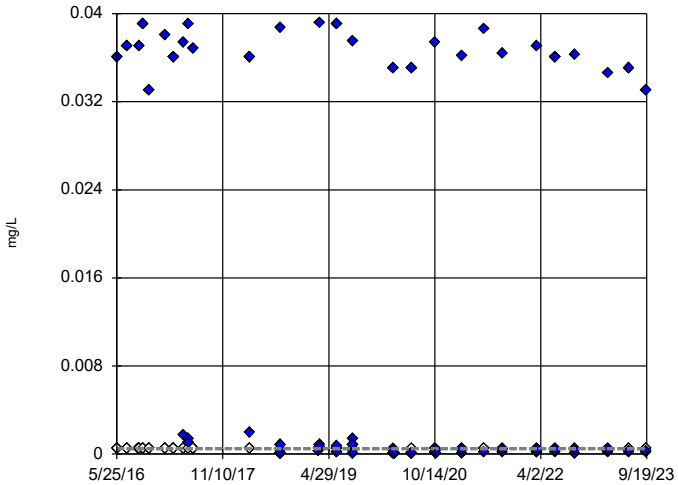
Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 162

Outliers are drawn as solid.
Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.000545, low cutoff = 0.00044, based on IQR multiplier of 3.

Constituent: Selenium, total Analysis Run 12/13/2023 3:50 PM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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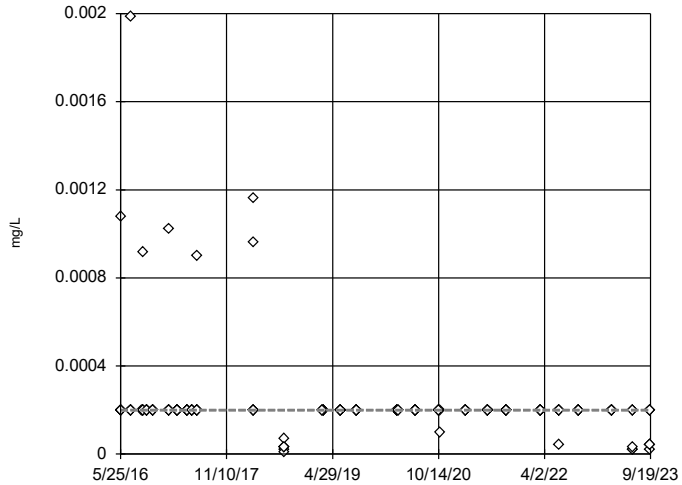
Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 162

No outliers found.
Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Thallium, total Analysis Run 12/13/2023 3:50 PM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

FIGURE D

Mann-Whitney

Welch's t-test/Mann-Whitney - Significant Results

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 12/5/2023, 12:21 PM

Constituent	Well	Calc.	0.01	Alpha	Sig.	Method
Calcium, total (mg/L)	**B-12 (bg)**	**-2.637**	**Yes**	**0.01**	**Yes**	**Mann-W**
Calcium, total (mg/L)	**B-1B (bg)**	**-2.638**	**Yes**	**0.01**	**Yes**	**Mann-W**
Calcium, total (mg/L)	**B-5 (bg)**	**-2.923**	**Yes**	**0.01**	**Yes**	**Mann-W**
Chloride, total (mg/L)	**B-10**	**2.69**	**Yes**	**0.01**	**Yes**	**Mann-W**
Fluoride, total (mg/L)	**B-12 (bg)**	**-3.167**	**Yes**	**0.01**	**Yes**	**Mann-W**
Fluoride, total (mg/L)	**B-2**	**-2.606**	**Yes**	**0.01**	**Yes**	**Mann-W**
Fluoride, total (mg/L)	**B-5 (bg)**	**-3.146**	**Yes**	**0.01**	**Yes**	**Mann-W**
Fluoride, total (mg/L)	**B-7A (bg)**	**-2.605**	**Yes**	**0.01**	**Yes**	**Mann-W**
Fluoride, total (mg/L)	**B-9**	**-3.376**	**Yes**	**0.01**	**Yes**	**Mann-W**
pH, field (SU)	**B-6**	**-3.194**	**Yes**	**0.01**	**Yes**	**Mann-W**
Sulfate, total (mg/L)	**B-5 (bg)**	**3.955**	**Yes**	**0.01**	**Yes**	**Mann-W**
Sulfate, total (mg/L)	**B-9**	**3.196**	**Yes**	**0.01**	**Yes**	**Mann-W**

Welch's t-test/Mann-Whitney - All Results

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 12/5/2023, 12:21 PM

Constituent	Well	Calc.	0.01	Alpha	Sig.	Method
Calcium, total (mg/L)	B-10	-1.379	No	0.01	No	Mann-W
Calcium, total (mg/L)	B-11	0.2392	No	0.01	No	Mann-W
Calcium, total (mg/L)	**B-12 (bg)**	**-2.637**	**Yes**	**0.01**	**Yes**	**Mann-W**
Calcium, total (mg/L)	B-13 (bg)	-0.4472	No	0.01	No	Mann-W
Calcium, total (mg/L)	**B-1B (bg)**	**-2.638**	**Yes**	**0.01**	**Yes**	**Mann-W**
Calcium, total (mg/L)	B-2	0.3307	No	0.01	No	Mann-W
Calcium, total (mg/L)	B-4 (bg)	2.333	No	0.01	No	Mann-W
Calcium, total (mg/L)	**B-5 (bg)**	**-2.923**	**Yes**	**0.01**	**Yes**	**Mann-W**
Calcium, total (mg/L)	B-6	-0.4462	No	0.01	No	Mann-W
Calcium, total (mg/L)	B-7A (bg)	-2.444	No	0.01	No	Mann-W
Calcium, total (mg/L)	B-9	-2.555	No	0.01	No	Mann-W
Chloride, total (mg/L)	**B-10**	**2.69**	**Yes**	**0.01**	**Yes**	**Mann-W**
Chloride, total (mg/L)	B-11	2.536	No	0.01	No	Mann-W
Chloride, total (mg/L)	B-12 (bg)	-2.533	No	0.01	No	Mann-W
Chloride, total (mg/L)	B-13 (bg)	-1.993	No	0.01	No	Mann-W
Chloride, total (mg/L)	B-1B (bg)	-1.248	No	0.01	No	Mann-W
Chloride, total (mg/L)	B-2	-2.11	No	0.01	No	Mann-W
Chloride, total (mg/L)	B-4 (bg)	1.104	No	0.01	No	Mann-W
Chloride, total (mg/L)	B-5 (bg)	2.38	No	0.01	No	Mann-W
Chloride, total (mg/L)	B-6	-1.519	No	0.01	No	Mann-W
Chloride, total (mg/L)	B-7A (bg)	-1.092	No	0.01	No	Mann-W
Chloride, total (mg/L)	B-9	-0.6281	No	0.01	No	Mann-W
Fluoride, total (mg/L)	B-10	-2.541	No	0.01	No	Mann-W
Fluoride, total (mg/L)	B-11	-0.746	No	0.01	No	Mann-W
Fluoride, total (mg/L)	**B-12 (bg)**	**-3.167**	**Yes**	**0.01**	**Yes**	**Mann-W**
Fluoride, total (mg/L)	B-13 (bg)	-0.8325	No	0.01	No	Mann-W
Fluoride, total (mg/L)	B-1B (bg)	-1.14	No	0.01	No	Mann-W
Fluoride, total (mg/L)	**B-2**	**-2.606**	**Yes**	**0.01**	**Yes**	**Mann-W**
Fluoride, total (mg/L)	B-4 (bg)	-1.342	No	0.01	No	Mann-W
Fluoride, total (mg/L)	**B-5 (bg)**	**-3.146**	**Yes**	**0.01**	**Yes**	**Mann-W**
Fluoride, total (mg/L)	B-6	-1.357	No	0.01	No	Mann-W
Fluoride, total (mg/L)	**B-7A (bg)**	**-2.605**	**Yes**	**0.01**	**Yes**	**Mann-W**
Fluoride, total (mg/L)	**B-9**	**-3.376**	**Yes**	**0.01**	**Yes**	**Mann-W**
pH, field (SU)	B-10	-2.304	No	0.01	No	Mann-W
pH, field (SU)	B-11	1.092	No	0.01	No	Mann-W
pH, field (SU)	B-12 (bg)	-2.362	No	0.01	No	Mann-W
pH, field (SU)	B-13 (bg)	0.2917	No	0.01	No	Mann-W
pH, field (SU)	B-1B (bg)	-0.8756	No	0.01	No	Mann-W
pH, field (SU)	B-2	-2.521	No	0.01	No	Mann-W
pH, field (SU)	B-4 (bg)	-2.07	No	0.01	No	Mann-W
pH, field (SU)	B-5 (bg)	0.9333	No	0.01	No	Mann-W
pH, field (SU)	**B-6**	**-3.194**	**Yes**	**0.01**	**Yes**	**Mann-W**
pH, field (SU)	B-7A (bg)	0.3791	No	0.01	No	Mann-W
pH, field (SU)	B-9	-1.458	No	0.01	No	Mann-W
Sulfate, total (mg/L)	B-10	0.1164	No	0.01	No	Mann-W
Sulfate, total (mg/L)	B-11	0.4109	No	0.01	No	Mann-W
Sulfate, total (mg/L)	B-12 (bg)	-0.1552	No	0.01	No	Mann-W
Sulfate, total (mg/L)	B-13 (bg)	-2.249	No	0.01	No	Mann-W
Sulfate, total (mg/L)	B-1B (bg)	-2.291	No	0.01	No	Mann-W
Sulfate, total (mg/L)	B-2	-2.18	No	0.01	No	Mann-W
Sulfate, total (mg/L)	B-4 (bg)	-1.67	No	0.01	No	Mann-W
Sulfate, total (mg/L)	**B-5 (bg)**	**3.955**	**Yes**	**0.01**	**Yes**	**Mann-W**
Sulfate, total (mg/L)	B-6	-0.8918	No	0.01	No	Mann-W
Sulfate, total (mg/L)	B-7A (bg)	-0.3517	No	0.01	No	Mann-W
Sulfate, total (mg/L)	**B-9**	**3.196**	**Yes**	**0.01**	**Yes**	**Mann-W**

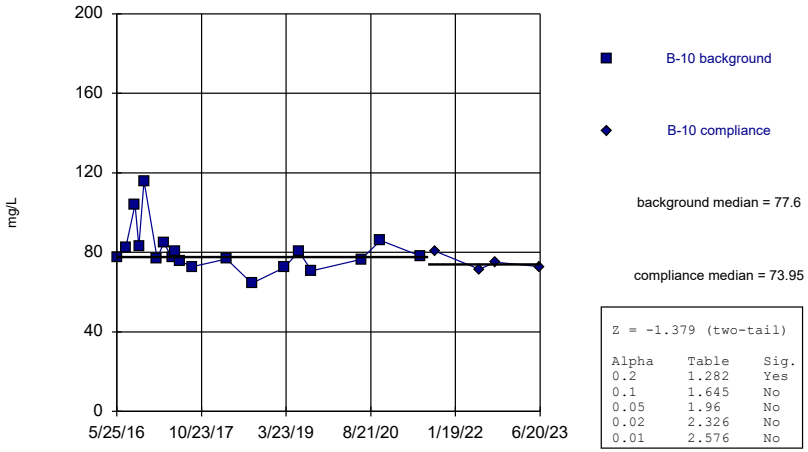
Welch's t-test/Mann-Whitney - All Results

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 12/5/2023, 12:21 PM

Constituent	Well	Calc.	0.01	Alpha	Sig.	Method
Total Dissolved Solids [TDS] (mg/L)	B-10	0.582	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	B-11	0.6401	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	B-12 (bg)	-1.978	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	B-13 (bg)	-1.281	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	B-1B (bg)	1.513	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	B-2	-1.087	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	B-4 (bg)	2.209	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	B-5 (bg)	1.747	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	B-6	-0.5425	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	B-7A (bg)	-0.8192	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	B-9	2.171	No	0.01	No	Mann-W

Mann-Whitney (Wilcoxon Rank Sum)

B-10



Z = -1.379 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Calcium, total Analysis Run 12/5/2023 12:19 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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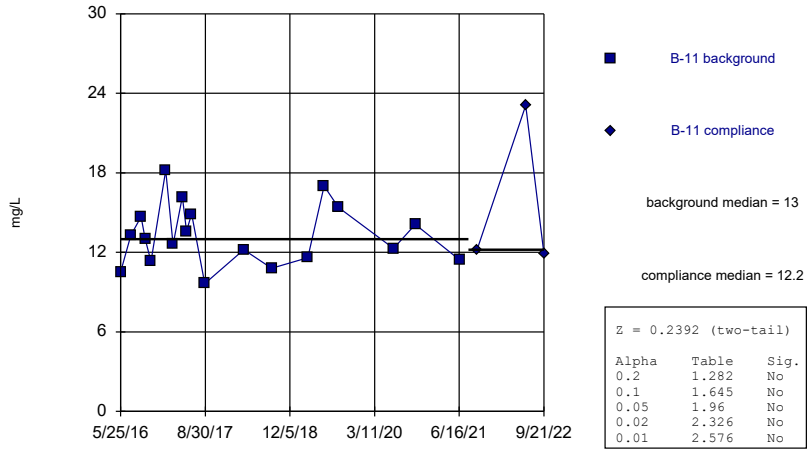
Mann-Whitney (Wilcoxon Rank Sum)

B-11



Z = 0.2392 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Calcium, total Analysis Run 12/5/2023 12:19 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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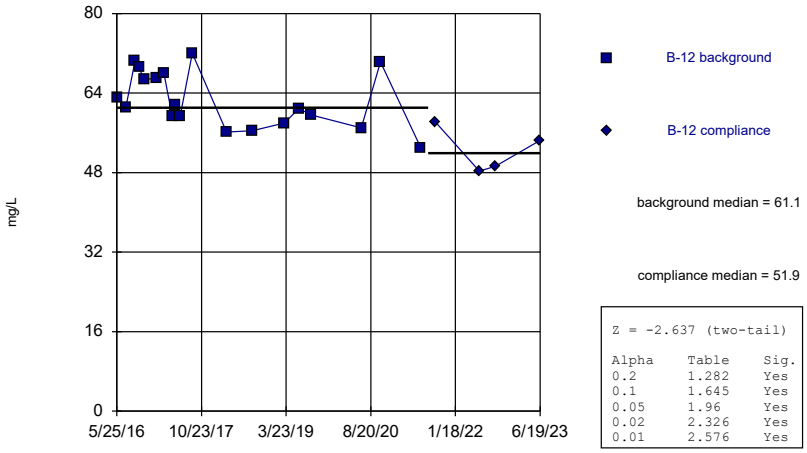
Mann-Whitney (Wilcoxon Rank Sum)

B-12 (bg)



Z = -2.637 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Calcium, total Analysis Run 12/5/2023 12:19 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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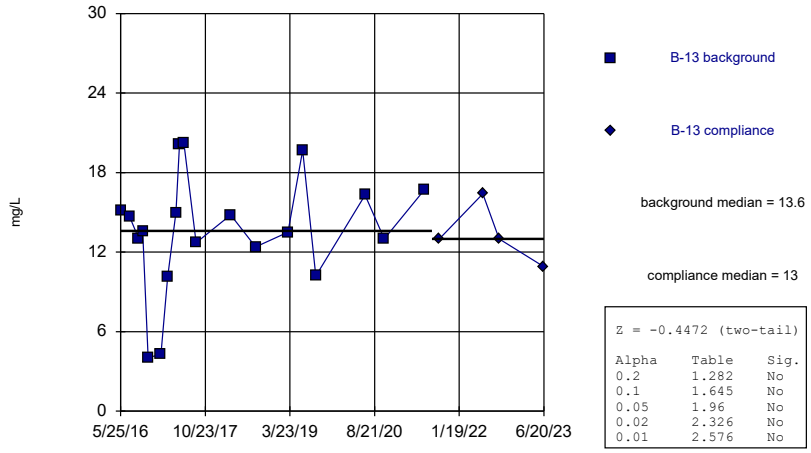
Mann-Whitney (Wilcoxon Rank Sum)

B-13 (bg)



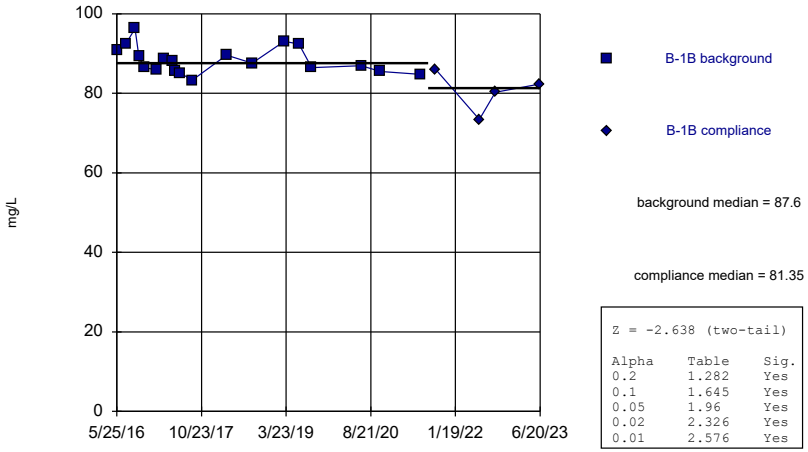
Z = -0.4472 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Calcium, total Analysis Run 12/5/2023 12:19 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-1B (bg)



Z = -2.638 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Calcium, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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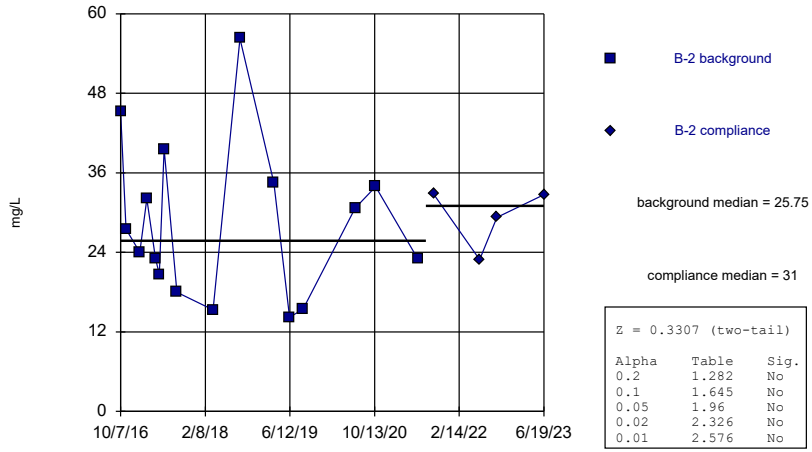
Mann-Whitney (Wilcoxon Rank Sum)

B-2



Z = 0.3307 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Calcium, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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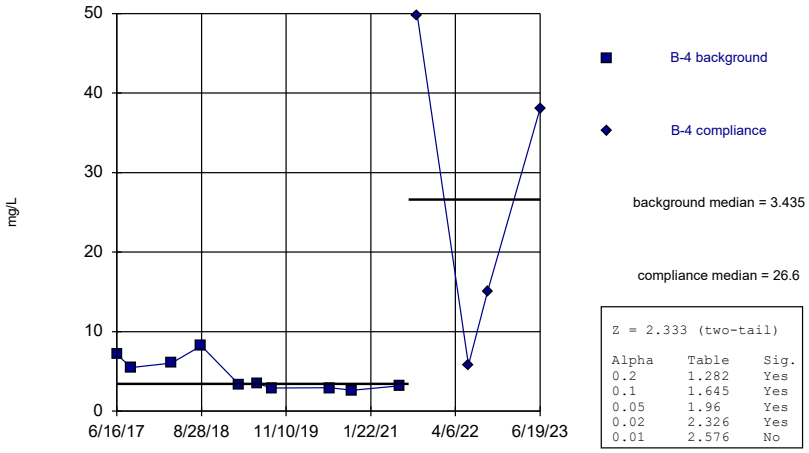
Mann-Whitney (Wilcoxon Rank Sum)

B-4 (bg)



Z = 2.333 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	No

Constituent: Calcium, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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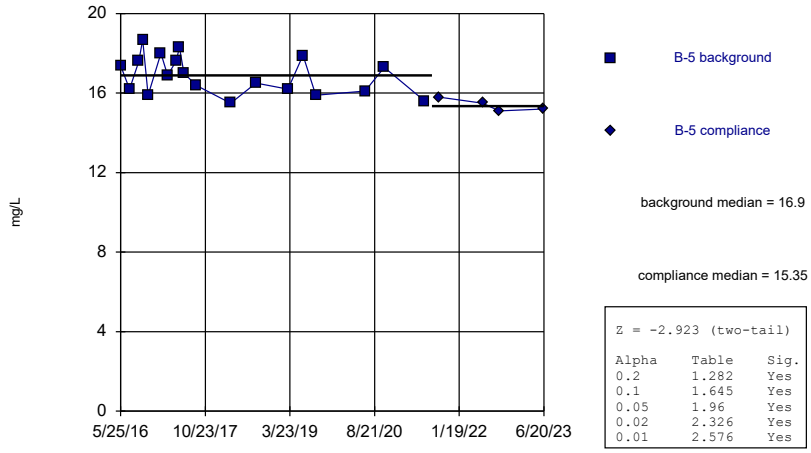
Mann-Whitney (Wilcoxon Rank Sum)

B-5 (bg)



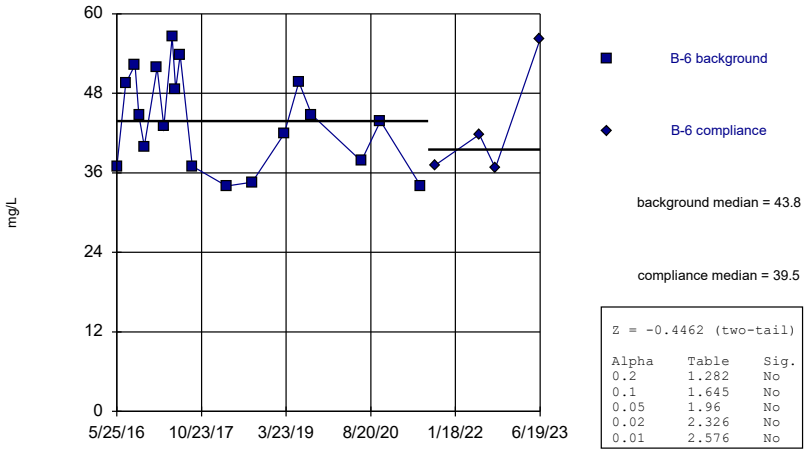
Z = -2.923 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Calcium, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-6



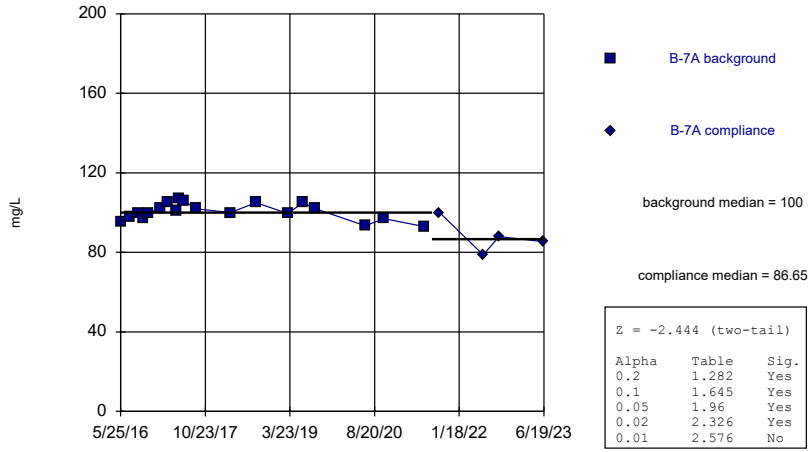
Z = -0.4462 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Calcium, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-7A (bg)



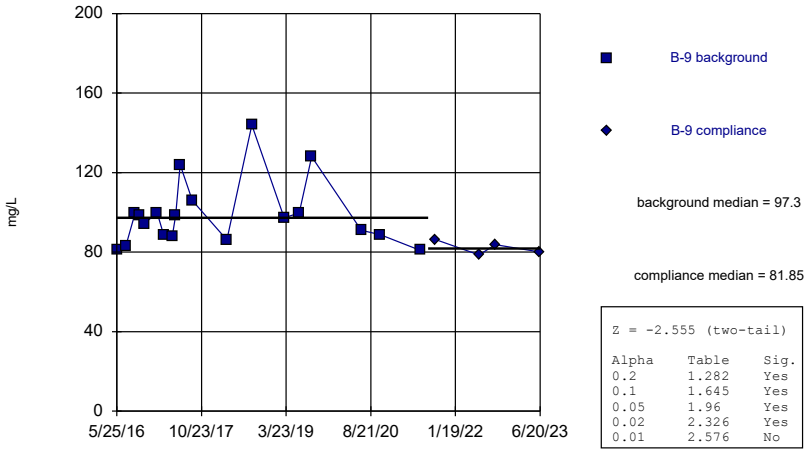
Z = -2.444 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	No

Constituent: Calcium, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-9



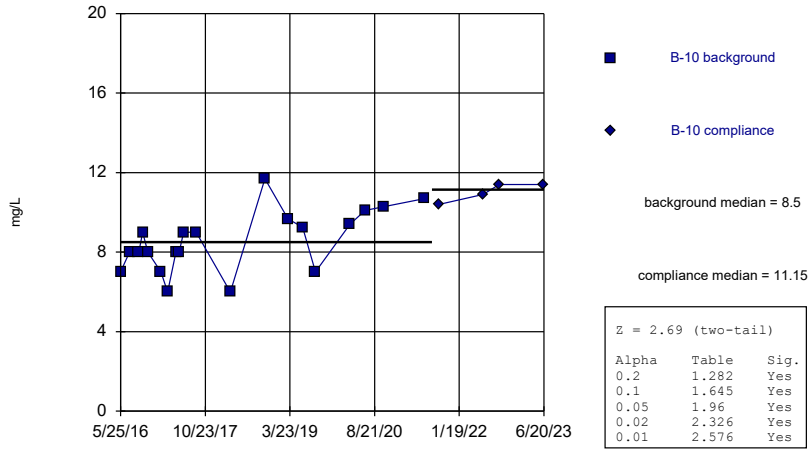
Z = -2.555 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	No

Constituent: Calcium, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-10



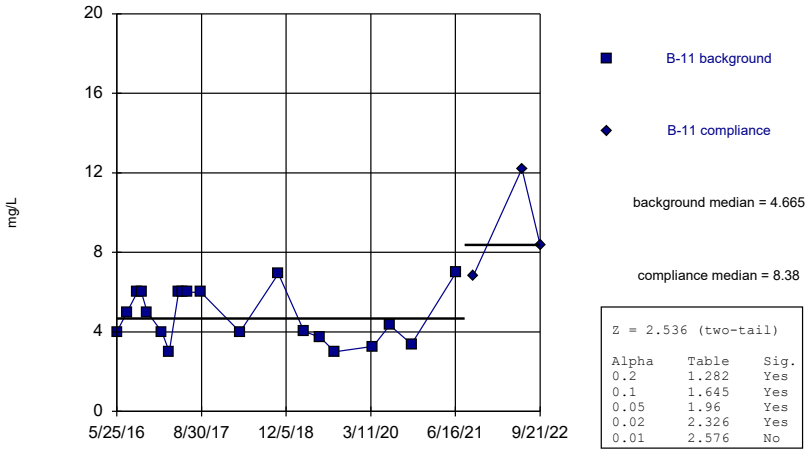
Z = 2.69 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Chloride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-11



Z = 2.536 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	No

Constituent: Chloride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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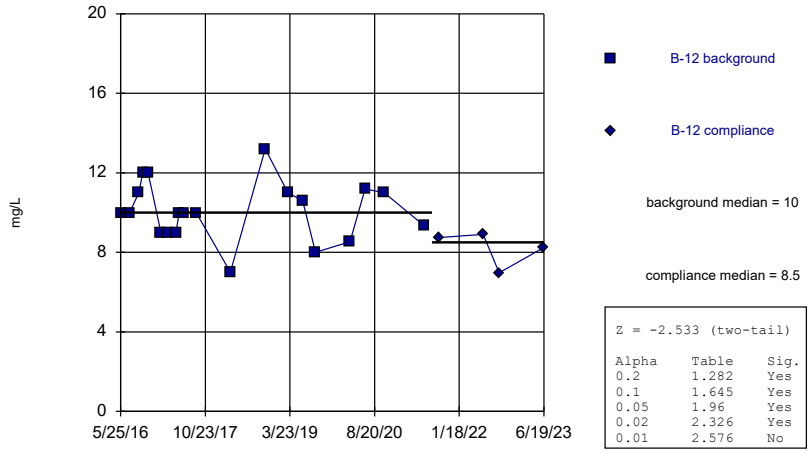
Mann-Whitney (Wilcoxon Rank Sum)

B-12 (bg)



Z = -2.533 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	No

Constituent: Chloride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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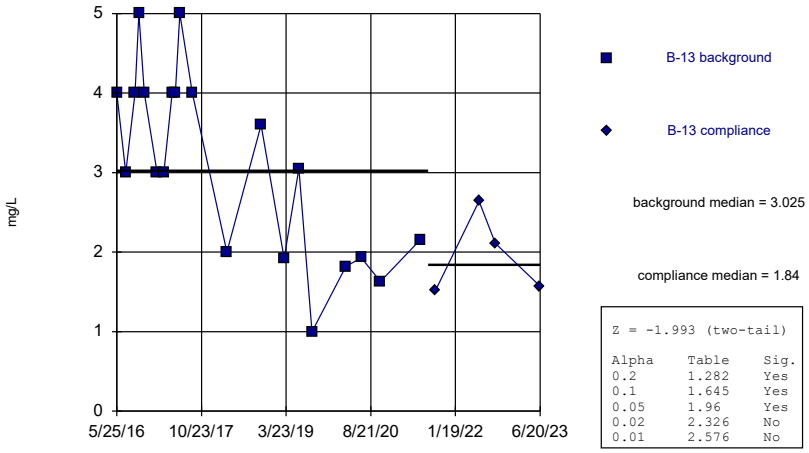
Mann-Whitney (Wilcoxon Rank Sum)

B-13 (bg)



Z = -1.993 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	No
0.01	2.576	No

Constituent: Chloride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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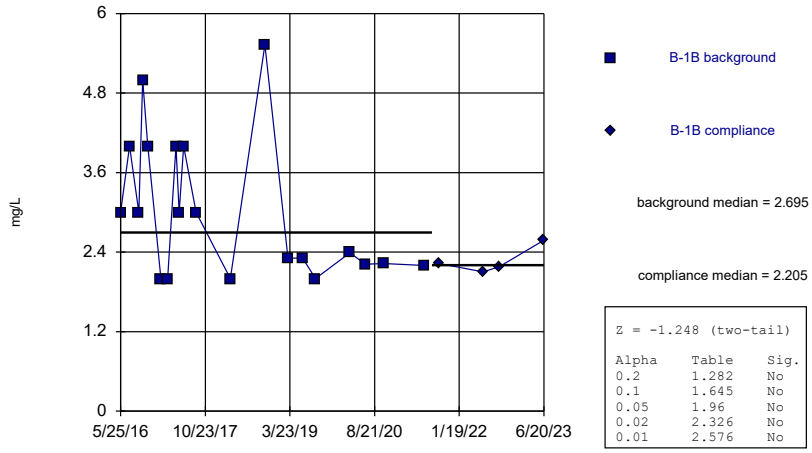
Mann-Whitney (Wilcoxon Rank Sum)

B-1B (bg)



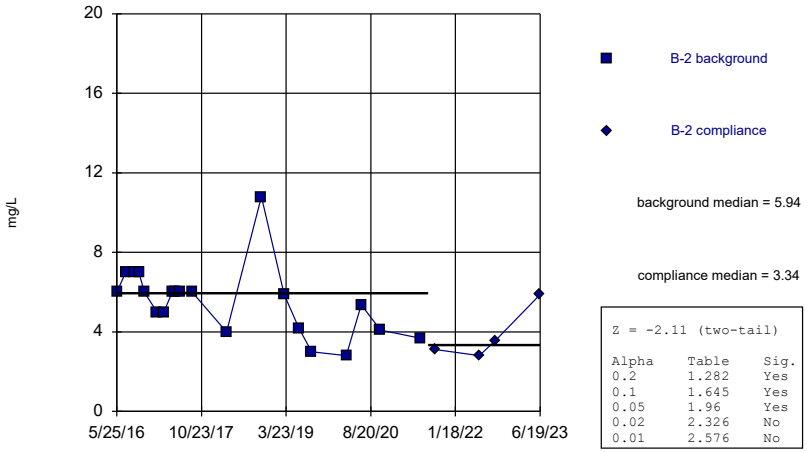
Z = -1.248 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Chloride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-2



Z = -2.11 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	No
0.01	2.576	No

Constituent: Chloride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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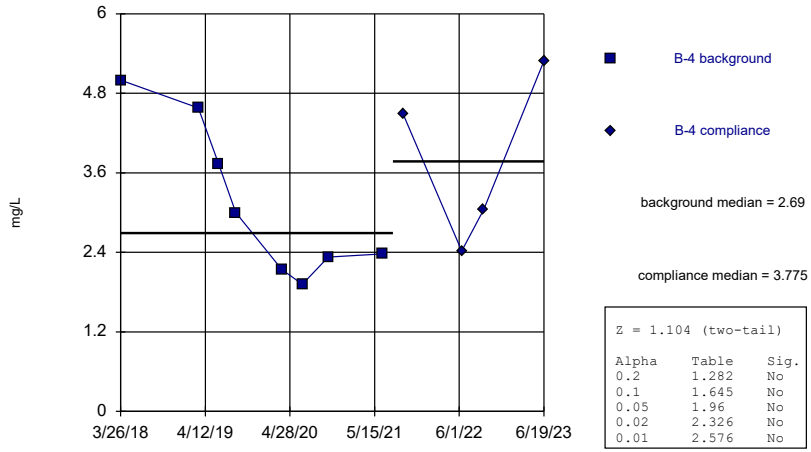
Mann-Whitney (Wilcoxon Rank Sum)

B-4 (bg)



Z = 1.104 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Chloride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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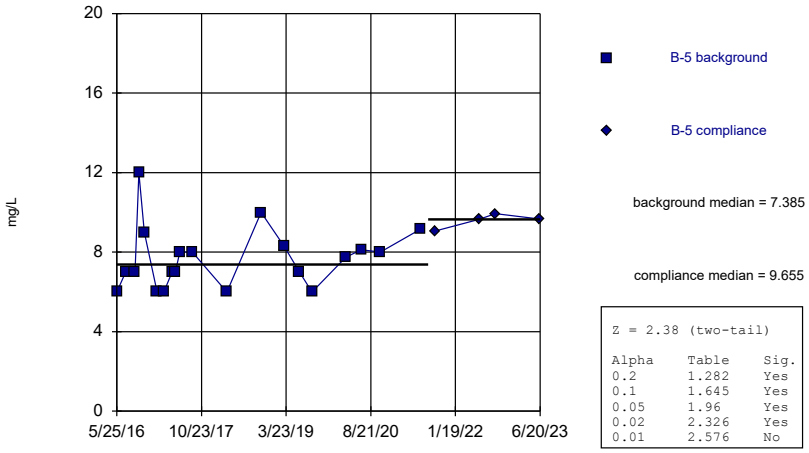
Mann-Whitney (Wilcoxon Rank Sum)

B-5 (bg)



Z = 2.38 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	No

Constituent: Chloride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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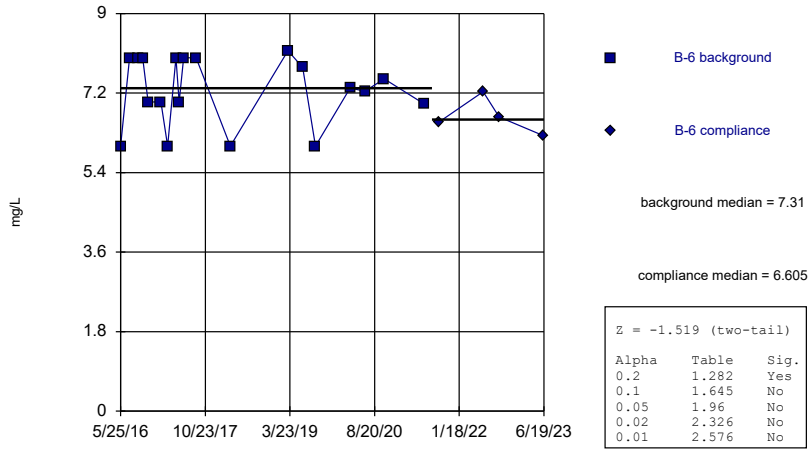
Mann-Whitney (Wilcoxon Rank Sum)

B-6



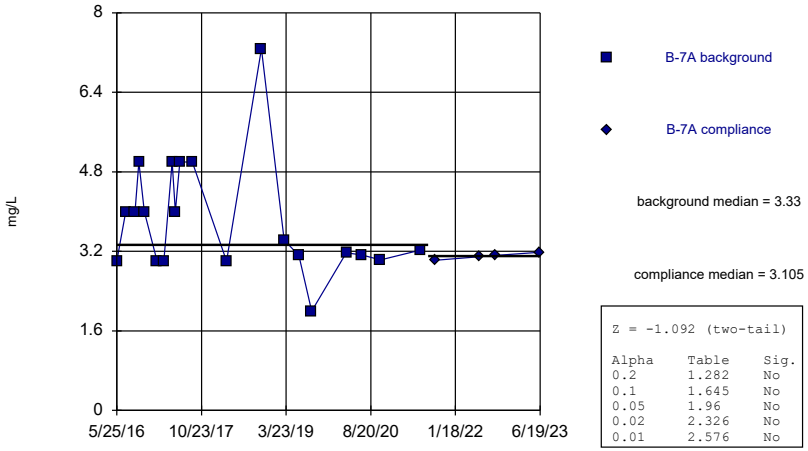
Z = -1.519 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Chloride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-7A (bg)



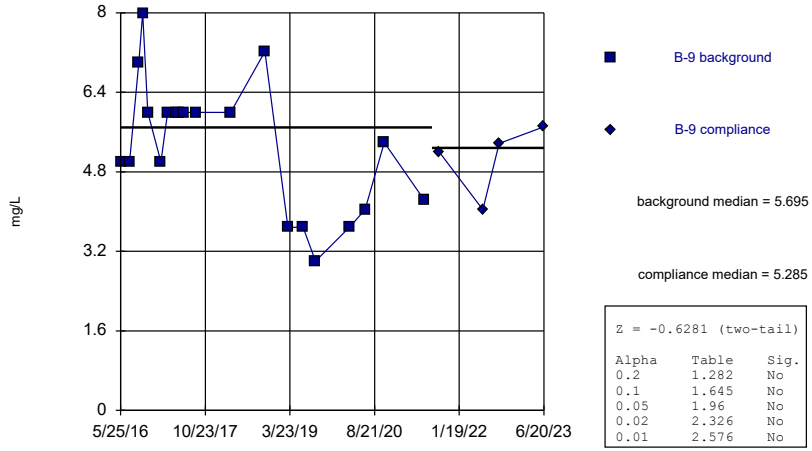
Z = -1.092 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Chloride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-9



Z = -0.6281 (two-tail)

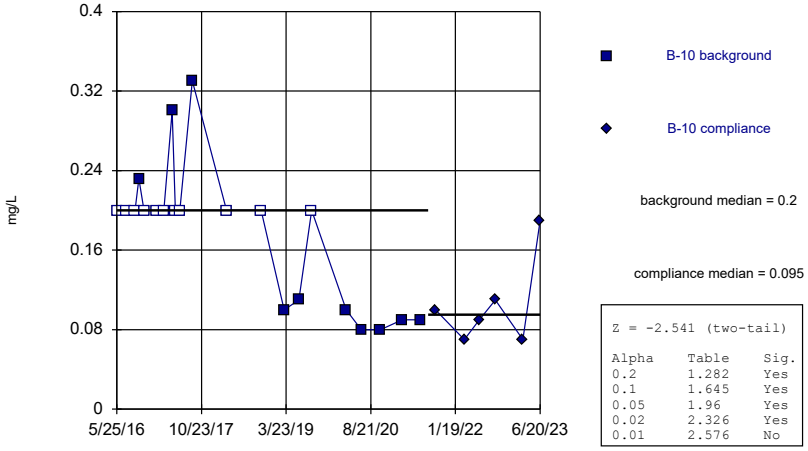
Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Chloride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Hollow symbols indicate censored values.

Mann-Whitney (Wilcoxon Rank Sum)

B-10



Z = -2.541 (two-tail)

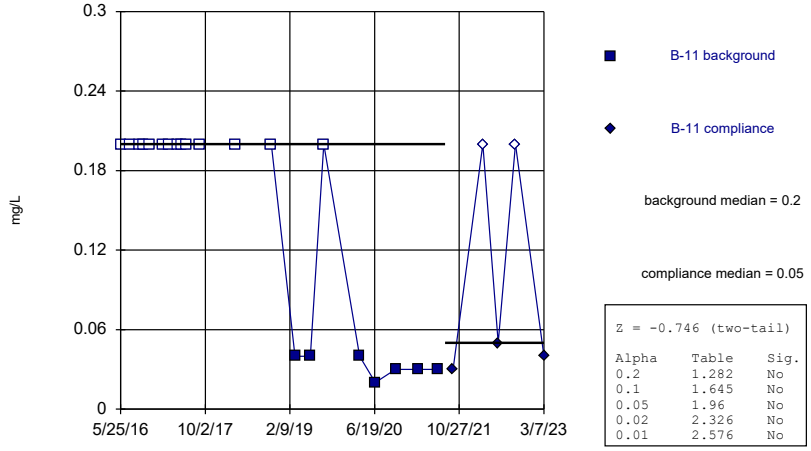
Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	No

Constituent: Fluoride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Hollow symbols indicate censored values.

Mann-Whitney (Wilcoxon Rank Sum)

B-11



Z = -0.746 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Fluoride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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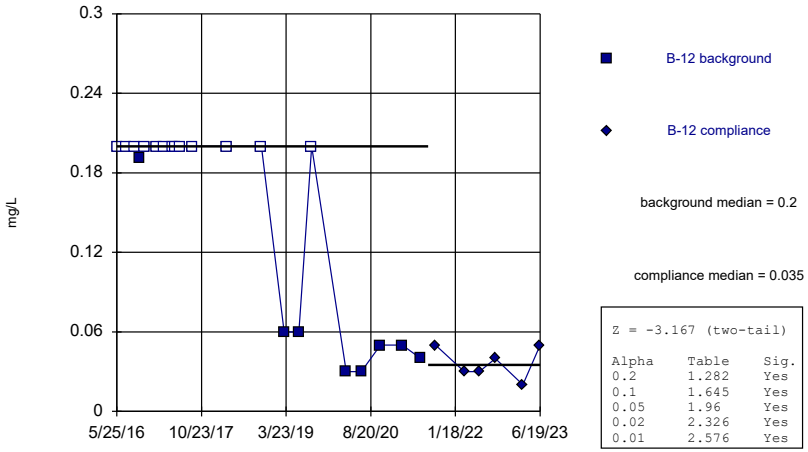
Mann-Whitney (Wilcoxon Rank Sum)

B-12 (bg)



Z = -3.167 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Fluoride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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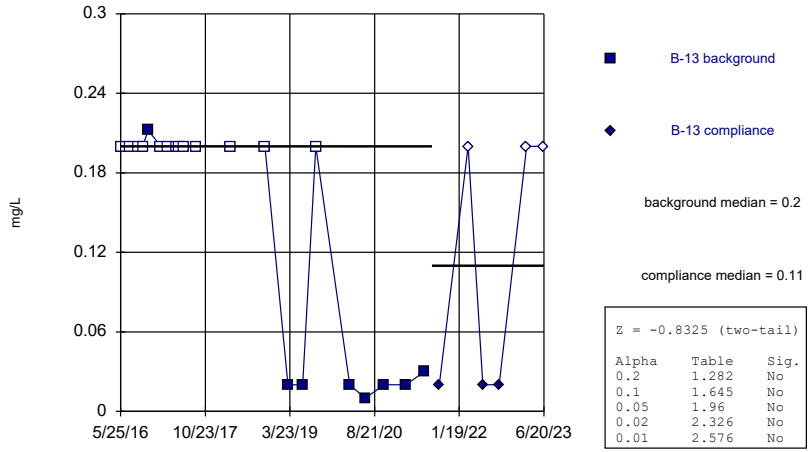
Hollow symbols indicate censored values.

Mann-Whitney (Wilcoxon Rank Sum)

B-13 (bg)



Z = -0.8325 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Fluoride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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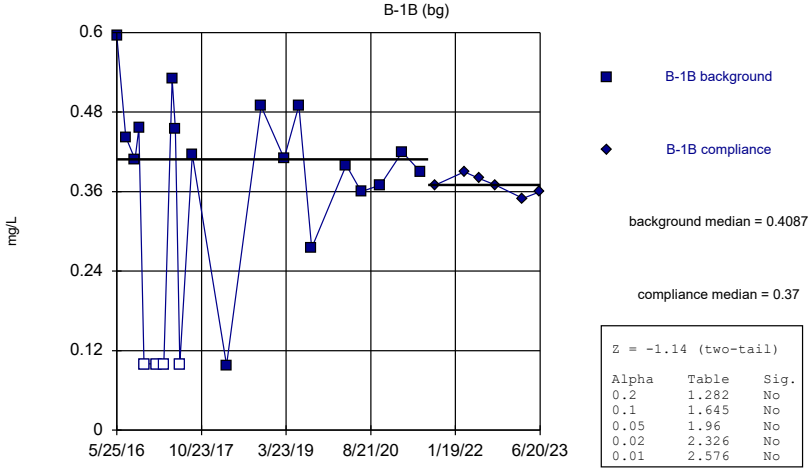
Hollow symbols indicate censored values.

Mann-Whitney (Wilcoxon Rank Sum)

B-1B (bg)



Z = -1.14 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Fluoride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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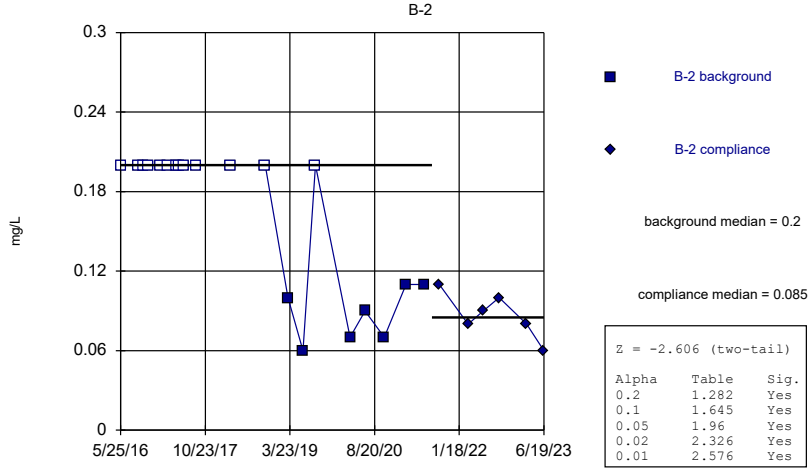
Hollow symbols indicate censored values.

Mann-Whitney (Wilcoxon Rank Sum)

B-2



Z = -2.606 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Fluoride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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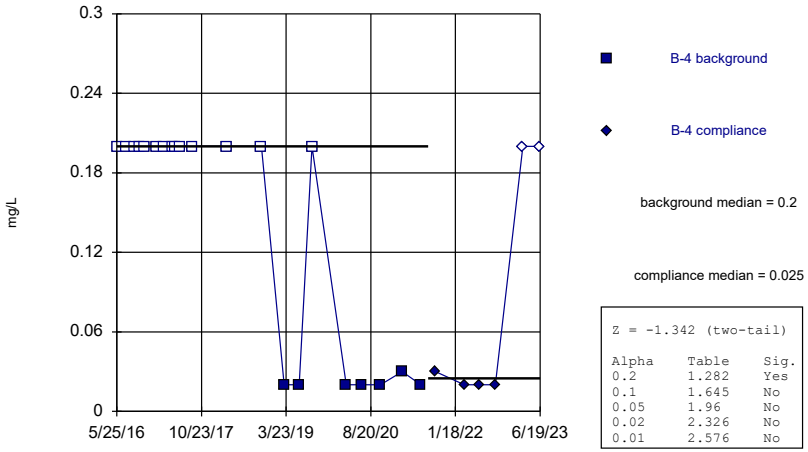
Hollow symbols indicate censored values.

Mann-Whitney (Wilcoxon Rank Sum)

B-4 (bg)



Z = -1.342 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Fluoride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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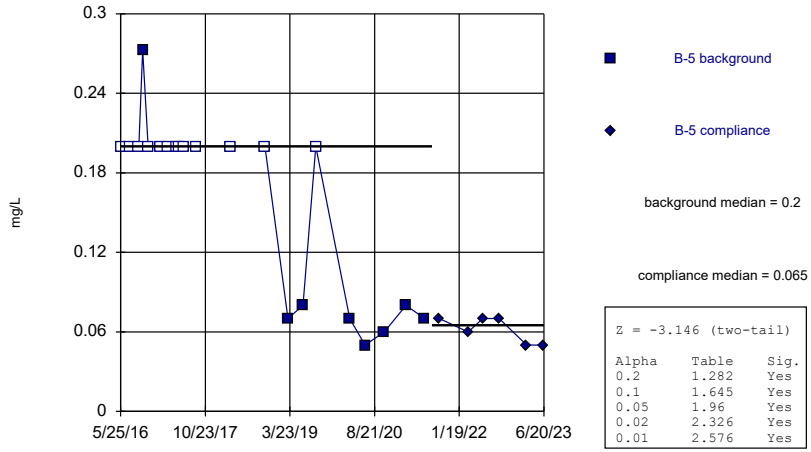
Hollow symbols indicate censored values.

Mann-Whitney (Wilcoxon Rank Sum)

B-5 (bg)



Z = -3.146 (two-tail)

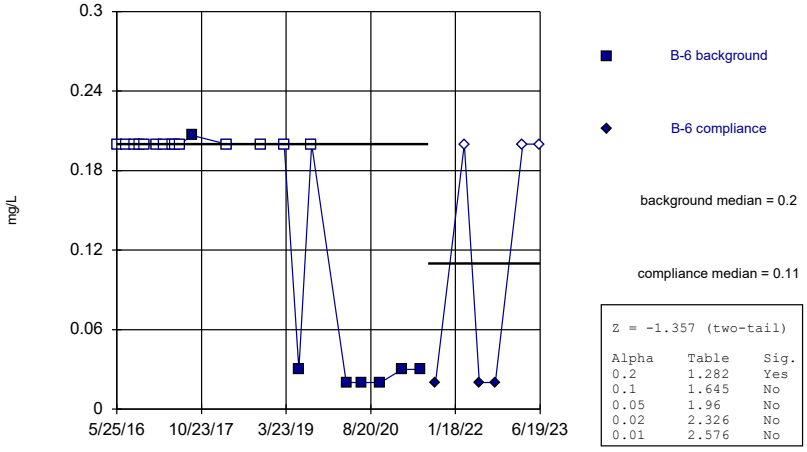
Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Fluoride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG
Hollow symbols indicate censored values.

Mann-Whitney (Wilcoxon Rank Sum)

B-6



Z = -1.357 (two-tail)

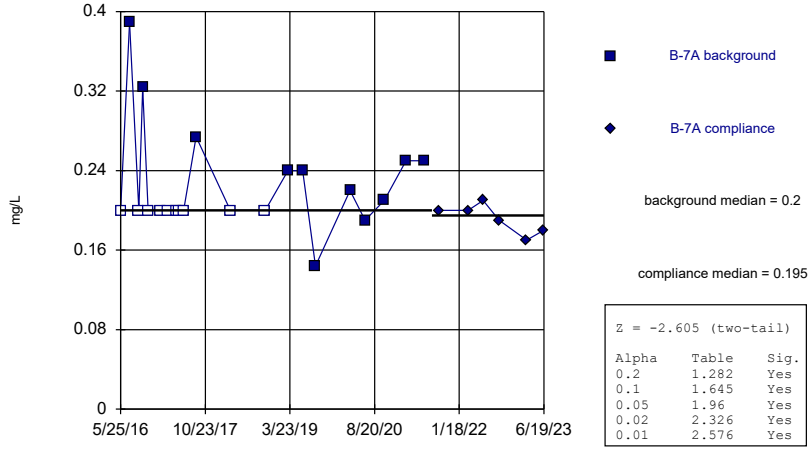
Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Fluoride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG
Hollow symbols indicate censored values.

Mann-Whitney (Wilcoxon Rank Sum)

B-7A (bg)



Z = -2.605 (two-tail)

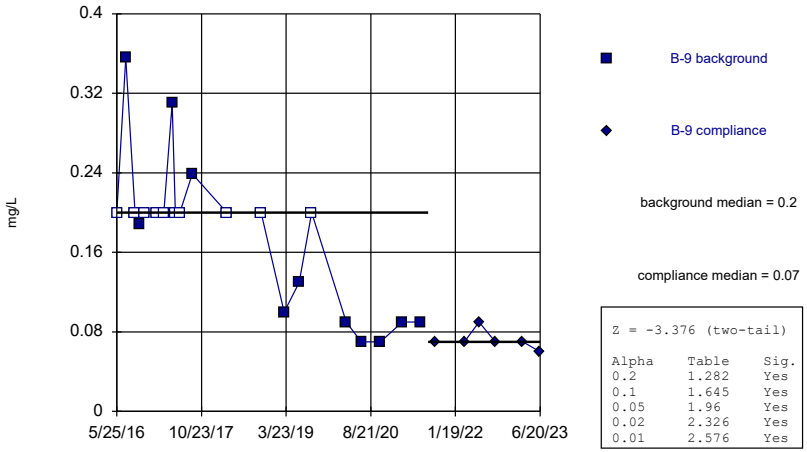
Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Fluoride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Hollow symbols indicate censored values.

Mann-Whitney (Wilcoxon Rank Sum)

B-9



background median = 0.2

compliance median = 0.07

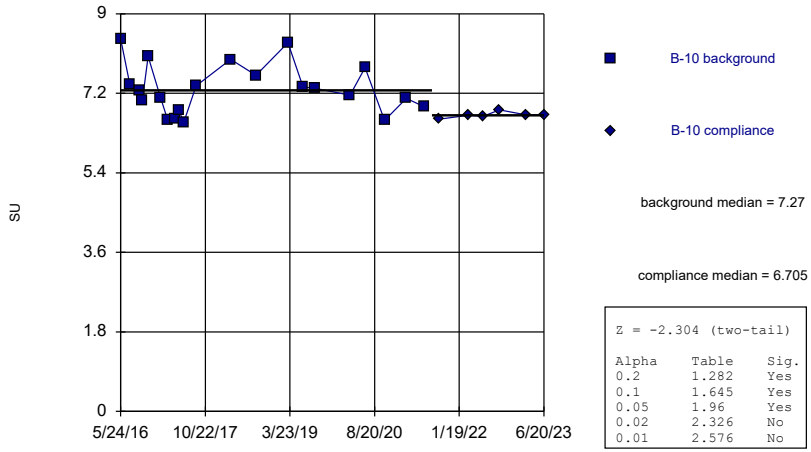
Z = -3.376 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Fluoride, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-10



background median = 7.27

compliance median = 6.705

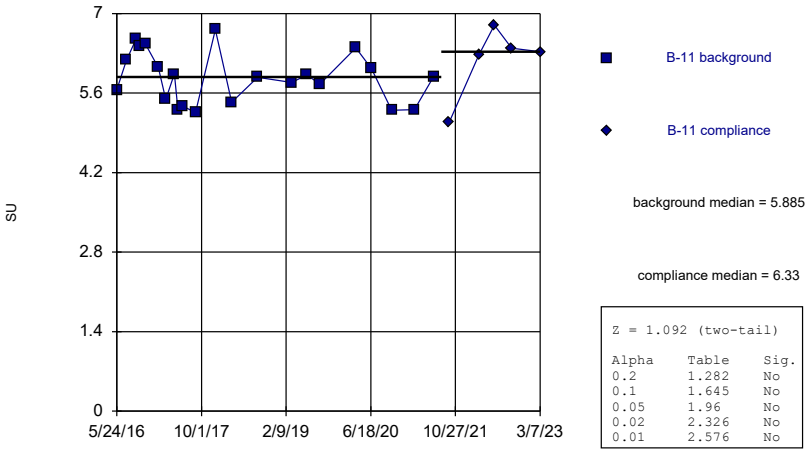
Z = -2.304 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	No
0.01	2.576	No

Constituent: pH, field Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-11



background median = 5.885

compliance median = 6.33

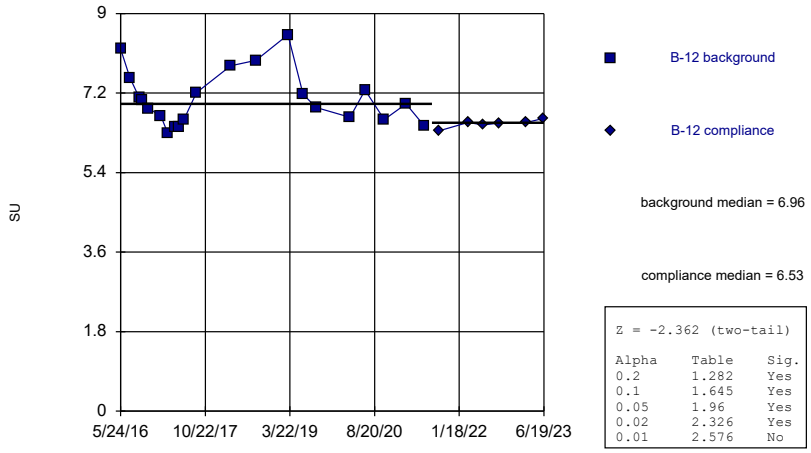
Z = 1.092 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: pH, field Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-12 (bg)



background median = 6.96

compliance median = 6.53

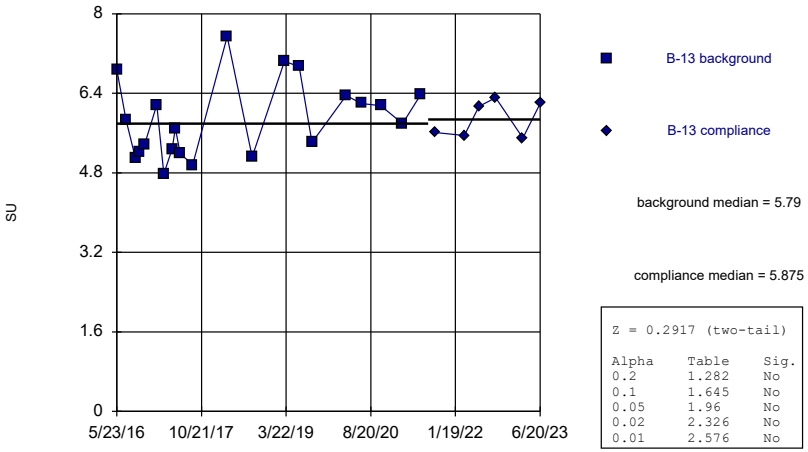
Z = -2.362 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	No

Constituent: pH, field Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-13 (bg)



background median = 5.79

compliance median = 5.875

Z = 0.2917 (two-tail)

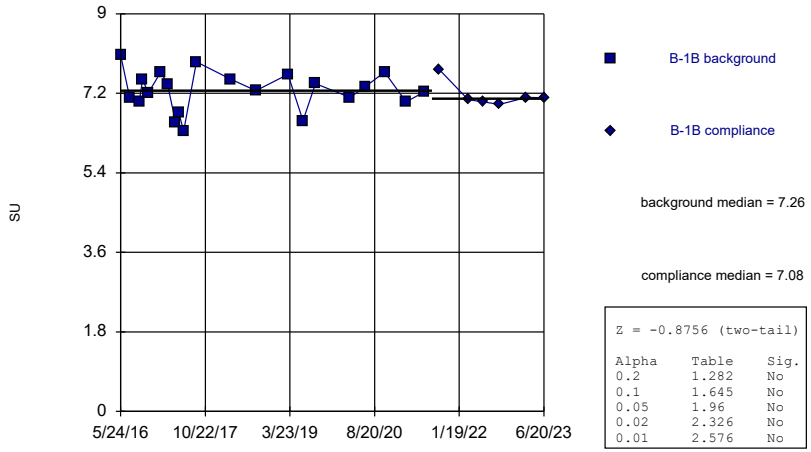
Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: pH, field Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-1B (bg)



background median = 7.26

compliance median = 7.08

Z = -0.8756 (two-tail)

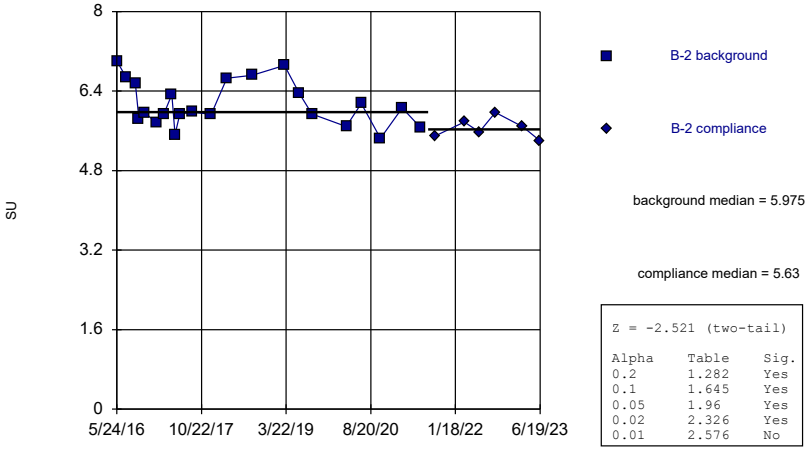
Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: pH, field Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-2



background median = 5.975

compliance median = 5.63

Z = -2.521 (two-tail)

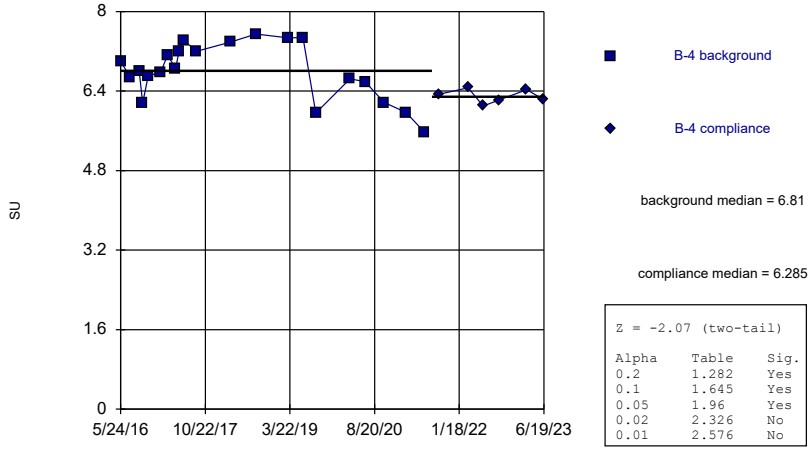
Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	No

Constituent: pH, field Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-4 (bg)



background median = 6.81

compliance median = 6.285

Z = -2.07 (two-tail)

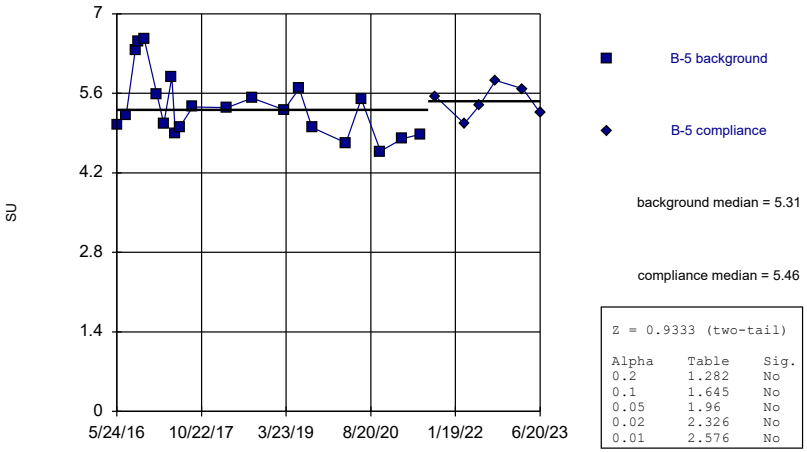
Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	No
0.01	2.576	No

Constituent: pH, field Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-5 (bg)



background median = 5.31

compliance median = 5.46

Z = 0.9333 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: pH, field Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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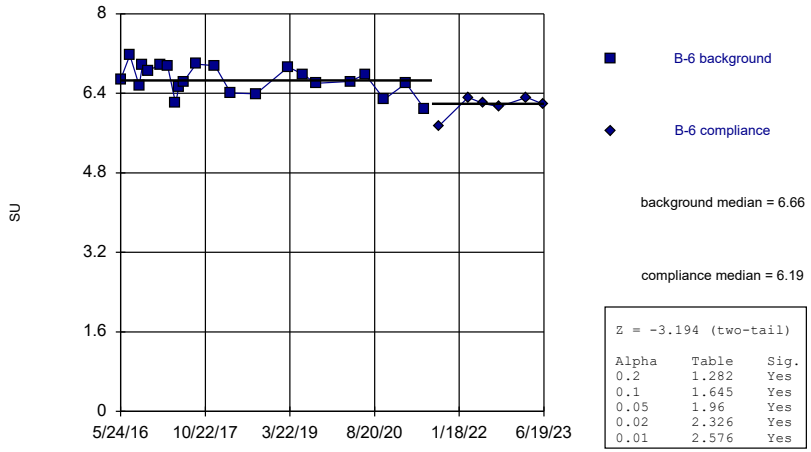
Mann-Whitney (Wilcoxon Rank Sum)

B-6



background median = 6.66

compliance median = 6.19

Z = -3.194 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: pH, field Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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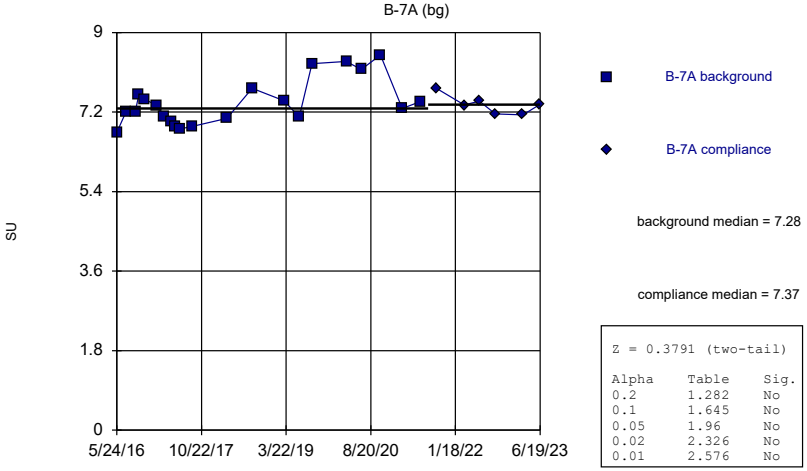
Mann-Whitney (Wilcoxon Rank Sum)

B-7A (bg)



background median = 7.28

compliance median = 7.37

Z = 0.3791 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: pH, field Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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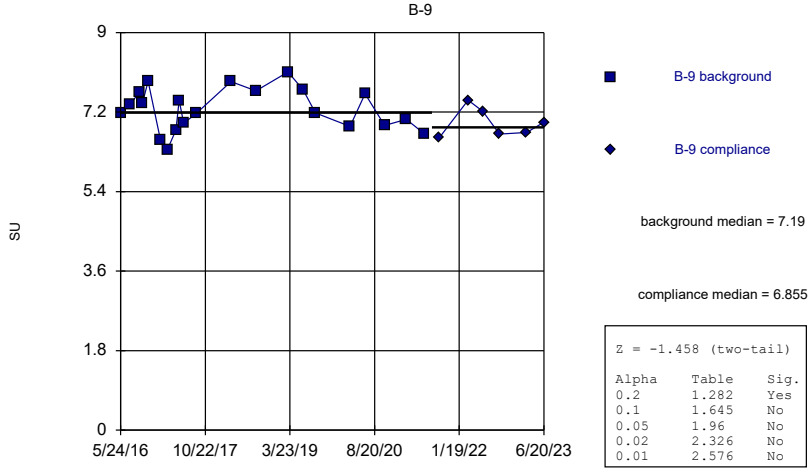
Mann-Whitney (Wilcoxon Rank Sum)

B-9



background median = 7.19

compliance median = 6.855

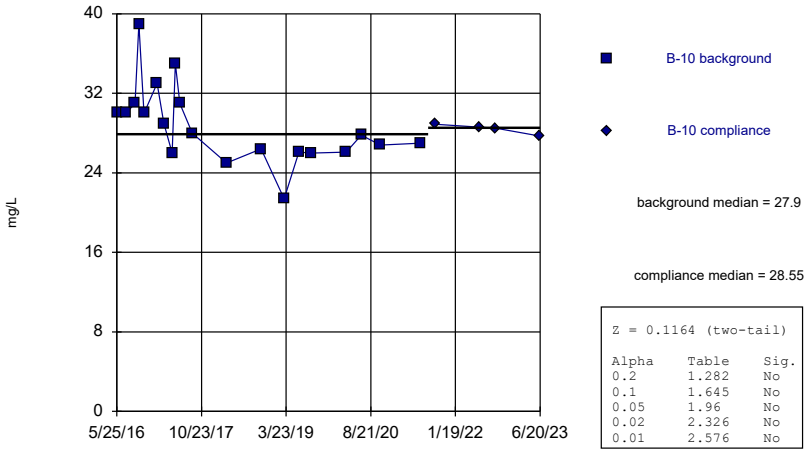
Z = -1.458 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: pH, field Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-10



Z = 0.1164 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Sulfate, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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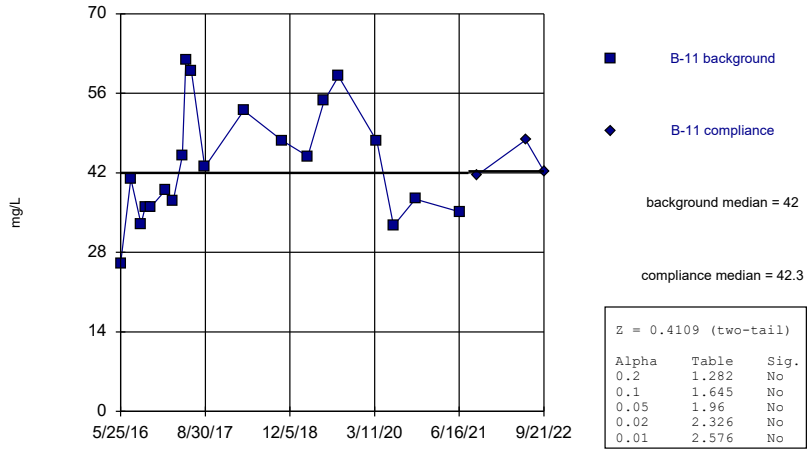
Mann-Whitney (Wilcoxon Rank Sum)

B-11



Z = 0.4109 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Sulfate, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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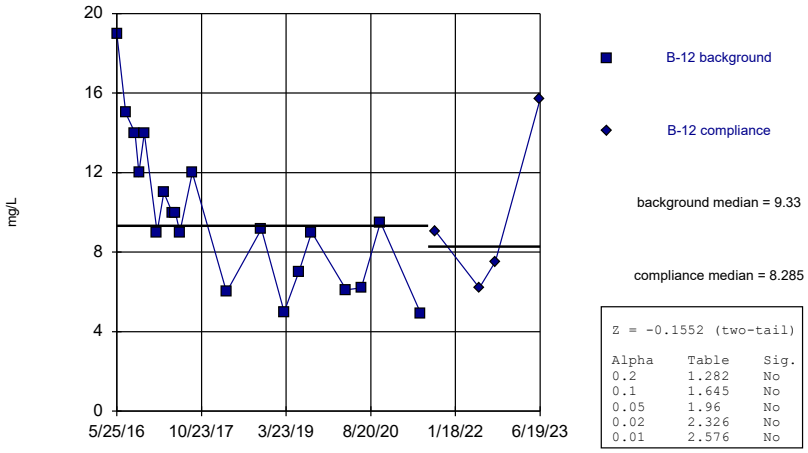
Mann-Whitney (Wilcoxon Rank Sum)

B-12 (bg)



Z = -0.1552 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Sulfate, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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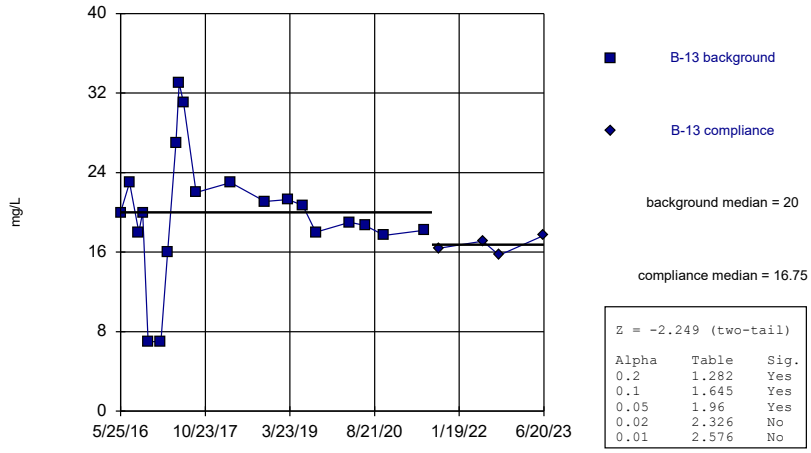
Mann-Whitney (Wilcoxon Rank Sum)

B-13 (bg)



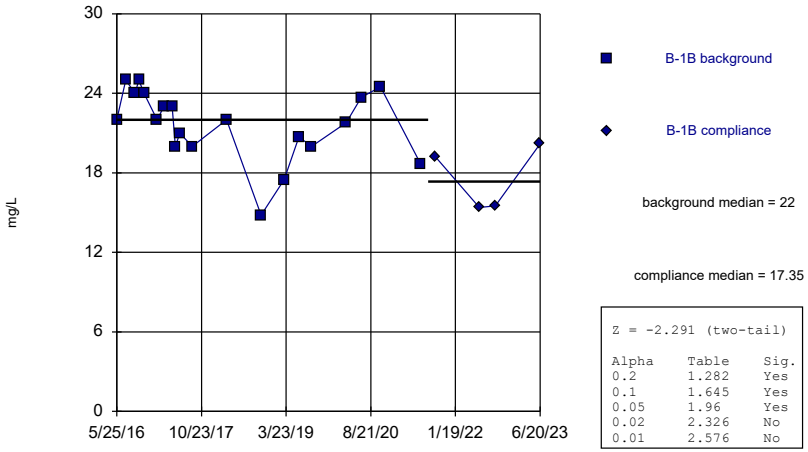
Z = -2.249 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	No
0.01	2.576	No

Constituent: Sulfate, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-1B (bg)



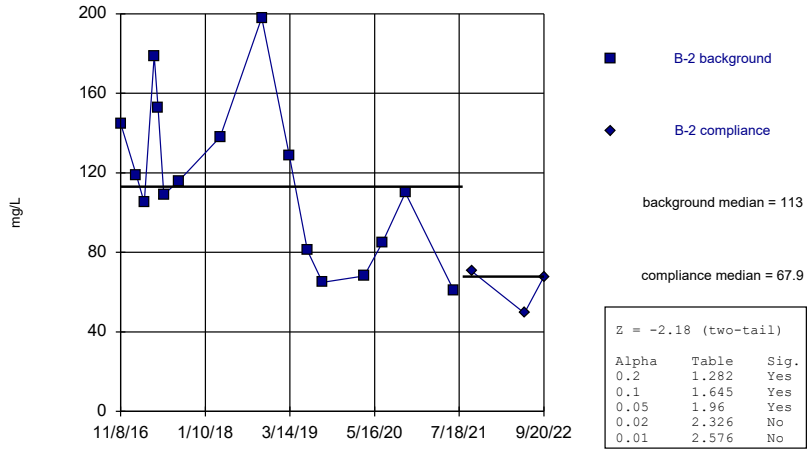
Z = -2.291 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	No
0.01	2.576	No

Constituent: Sulfate, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-2



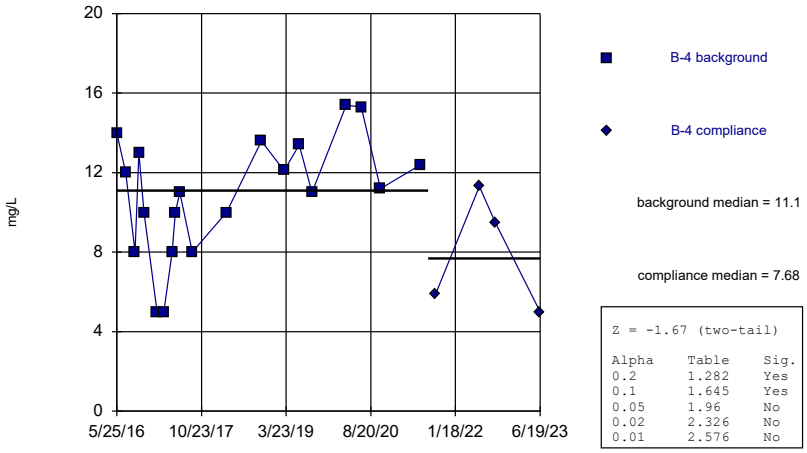
Z = -2.18 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	No
0.01	2.576	No

Constituent: Sulfate, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-4 (bg)



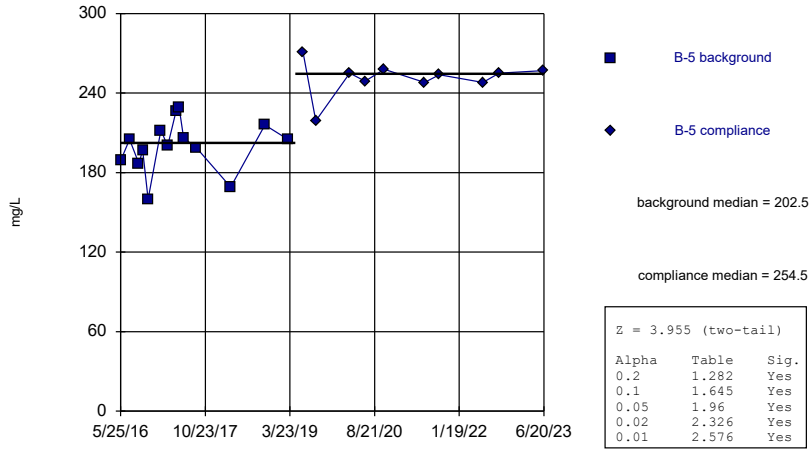
Z = -1.67 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Sulfate, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-5 (bg)



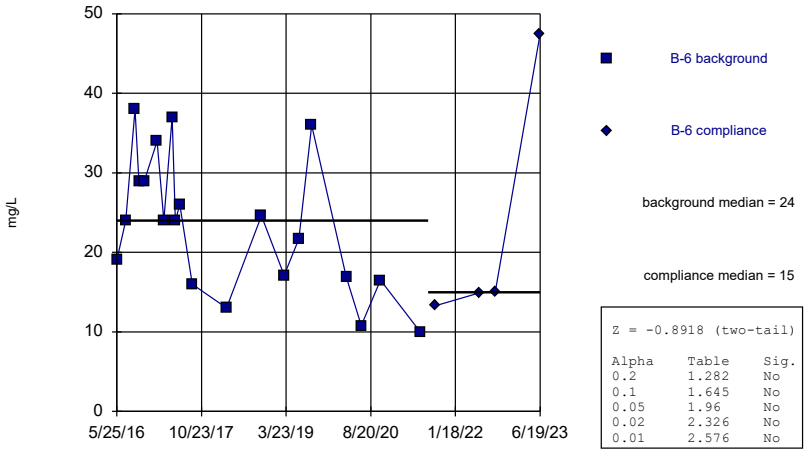
Z = 3.955 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Sulfate, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-6



Z = -0.8918 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Sulfate, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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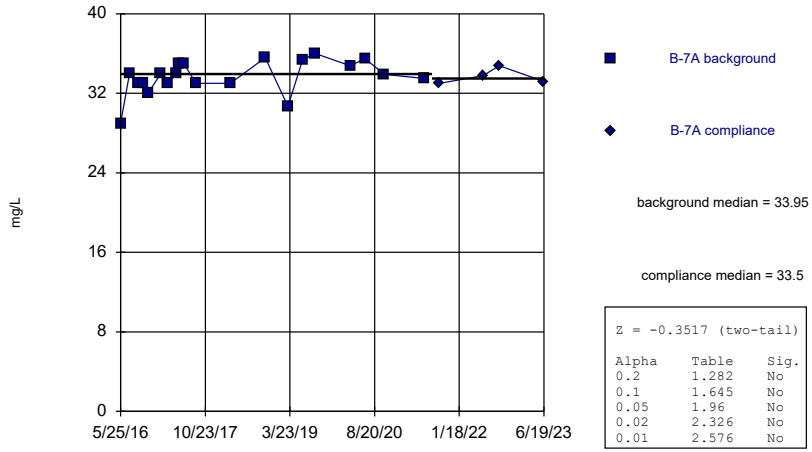
Mann-Whitney (Wilcoxon Rank Sum)

B-7A (bg)



Z = -0.3517 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Sulfate, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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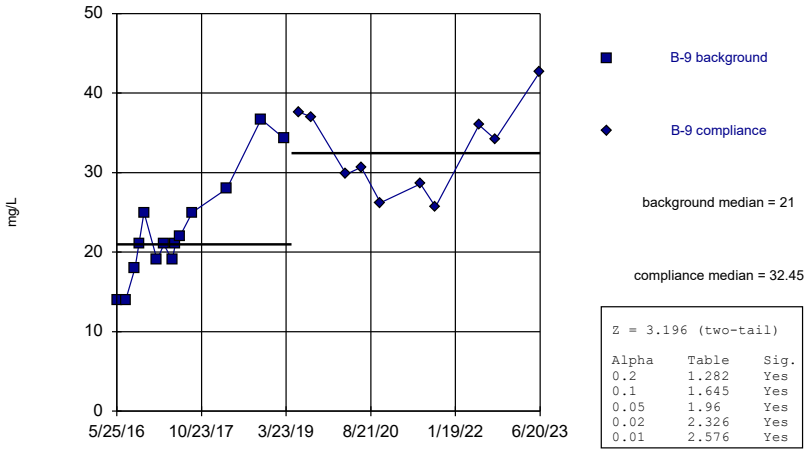
Mann-Whitney (Wilcoxon Rank Sum)

B-9



Z = 3.196 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	Yes
0.01	2.576	Yes

Constituent: Sulfate, total Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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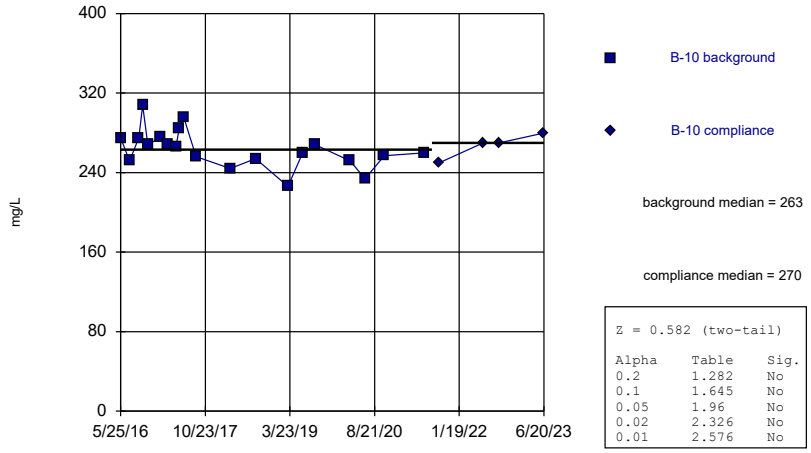
Mann-Whitney (Wilcoxon Rank Sum)

B-10



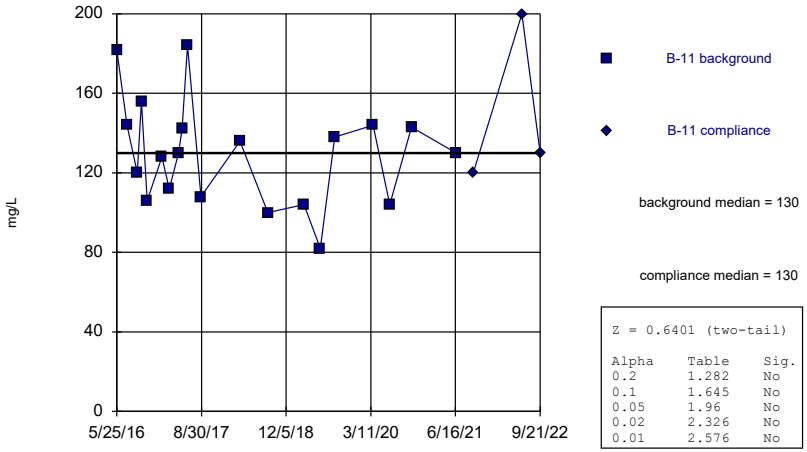
Z = 0.582 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-11



Z = 0.6401 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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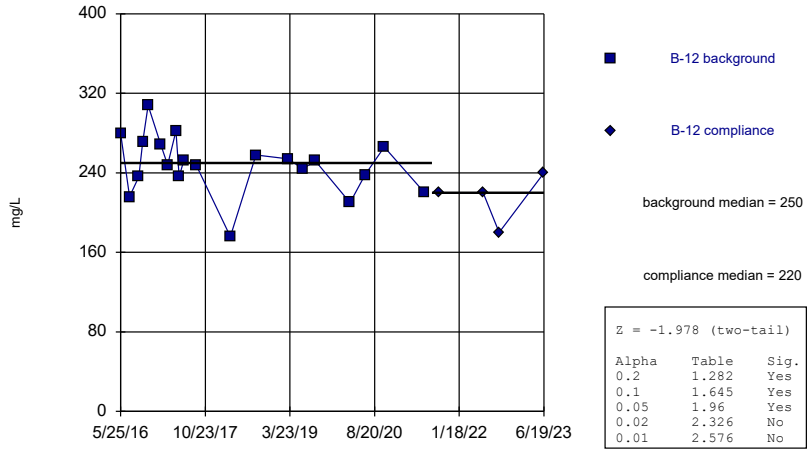
Mann-Whitney (Wilcoxon Rank Sum)

B-12 (bg)



Z = -1.978 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	No
0.01	2.576	No

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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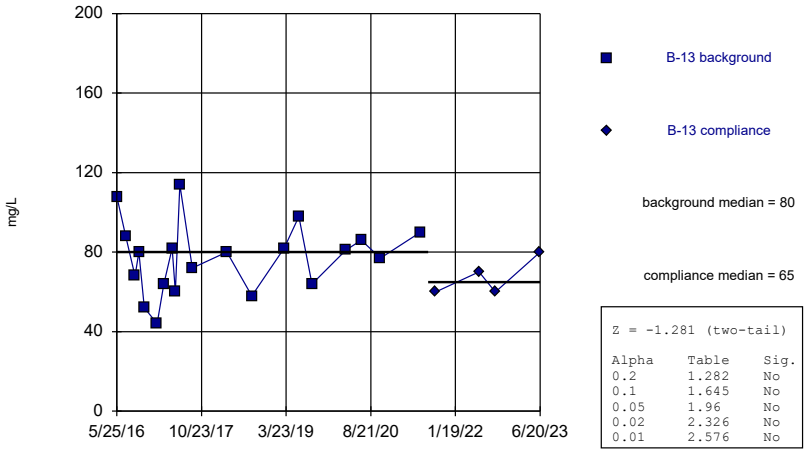
Mann-Whitney (Wilcoxon Rank Sum)

B-13 (bg)



Z = -1.281 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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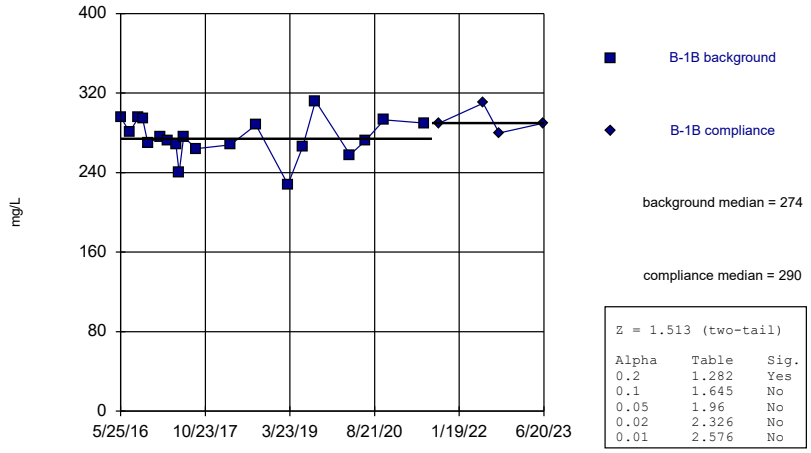
Mann-Whitney (Wilcoxon Rank Sum)

B-1B (bg)



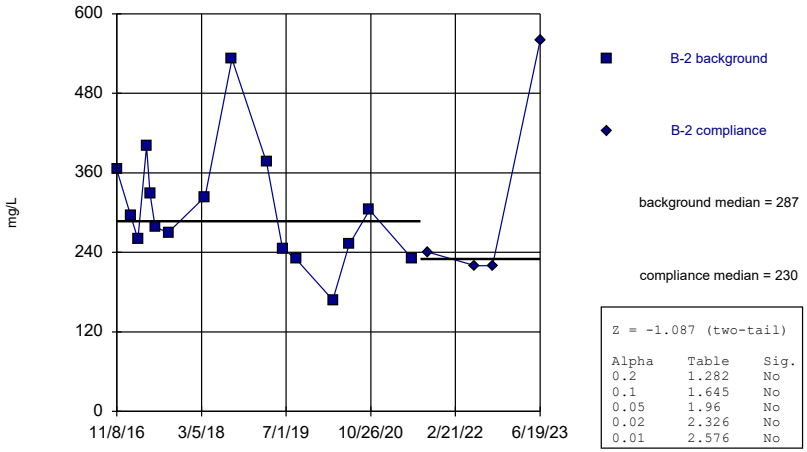
Z = 1.513 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-2



Z = -1.087 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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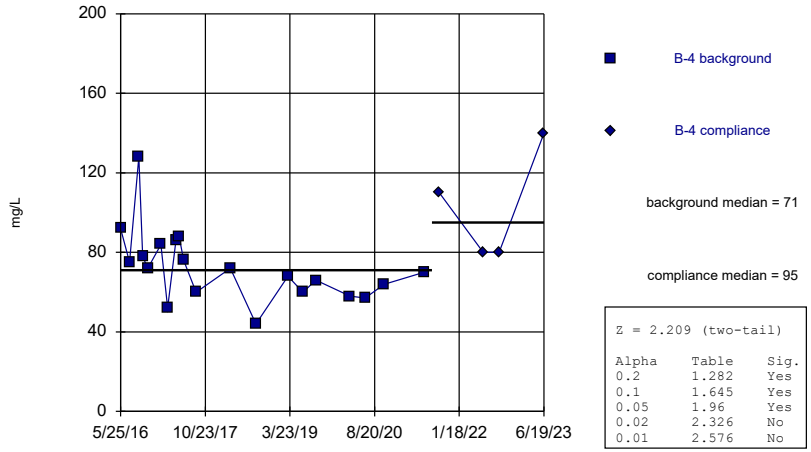
Mann-Whitney (Wilcoxon Rank Sum)

B-4 (bg)



Z = 2.209 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	No
0.01	2.576	No

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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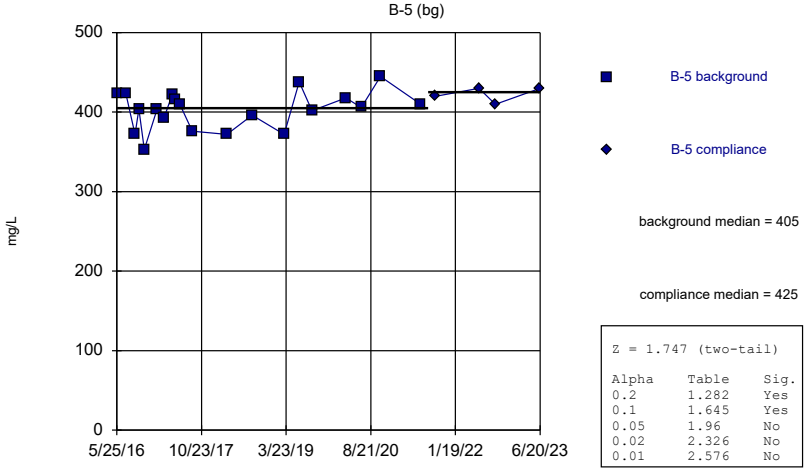
Mann-Whitney (Wilcoxon Rank Sum)

B-5 (bg)



Z = 1.747 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:20 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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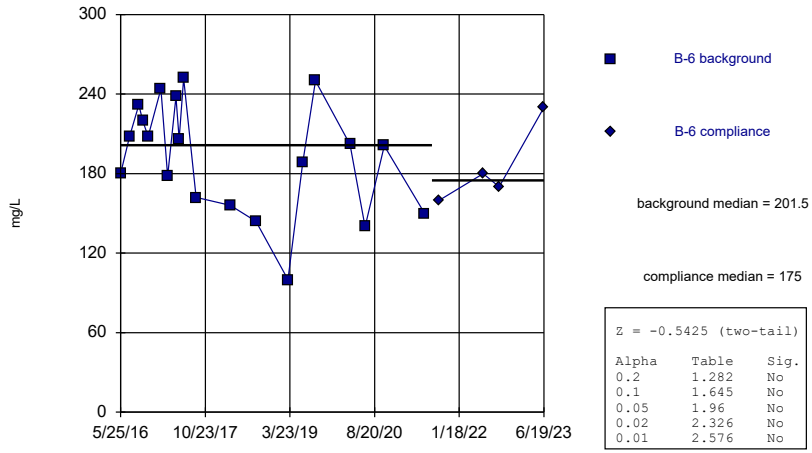
Mann-Whitney (Wilcoxon Rank Sum)

B-6



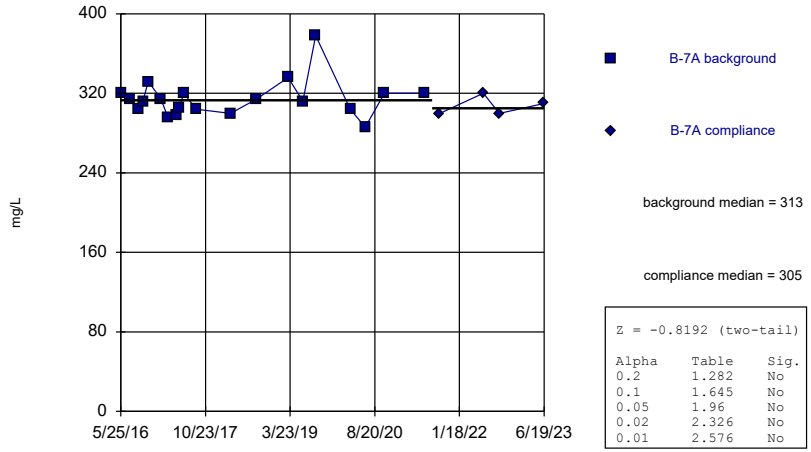
Z = -0.5425 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:21 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Mann-Whitney (Wilcoxon Rank Sum)

B-7A (bg)



Z = -0.8192 (two-tail)

Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:21 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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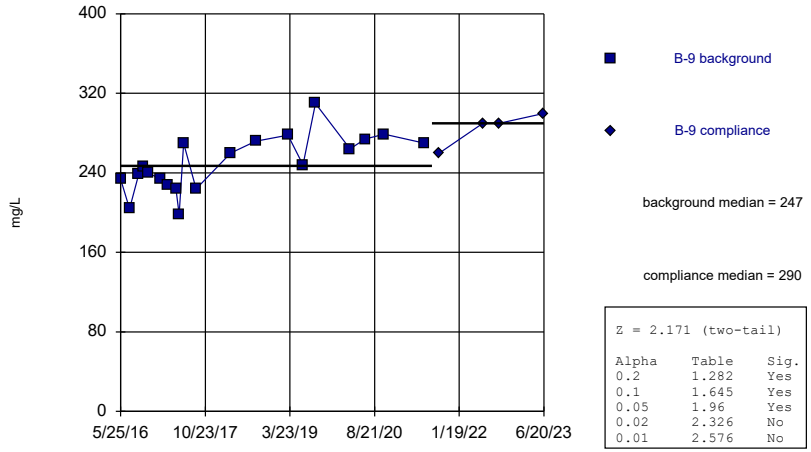
Mann-Whitney (Wilcoxon Rank Sum)

B-9



Z = 2.171 (two-tail)

Alpha	Table	Sig.
0.2	1.282	Yes
0.1	1.645	Yes
0.05	1.96	Yes
0.02	2.326	No
0.01	2.576	No

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:21 PM View: Mann-Whitney
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

FIGURE E
Upgradient Trend Tests

Upgradient Trend Tests - All Results (No Significant)

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 11/30/2023, 12:03 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Boron, total (mg/L)	B-12 (bg)	-0.0009934	-57	-105	No	24	12.5	n/a	0.01	NP
Boron, total (mg/L)	B-13 (bg)	0	13	105	No	24	16.67	n/a	0.01	NP
Boron, total (mg/L)	B-1B (bg)	-0.0000915	-32	-105	No	24	12.5	n/a	0.01	NP
Boron, total (mg/L)	B-4 (bg)	0.007245	76	105	No	24	0	n/a	0.01	NP
Boron, total (mg/L)	B-5 (bg)	0.005386	89	105	No	24	33.33	n/a	0.01	NP
Boron, total (mg/L)	B-7A (bg)	0	-33	-105	No	24	20.83	n/a	0.01	NP

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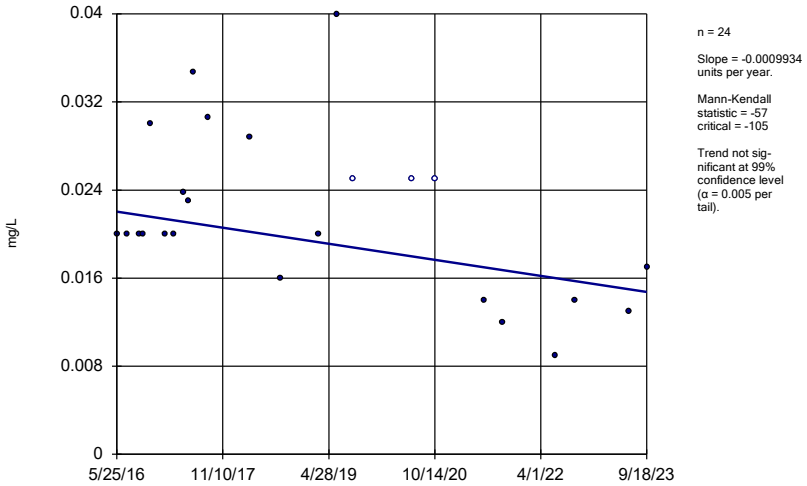
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-12 (bg)



n = 24

Slope = -0.0009934 units per year.

Mann-Kendall statistic = -57
critical = -105

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 11/30/2023 12:03 PM View: Appendix III - Interwell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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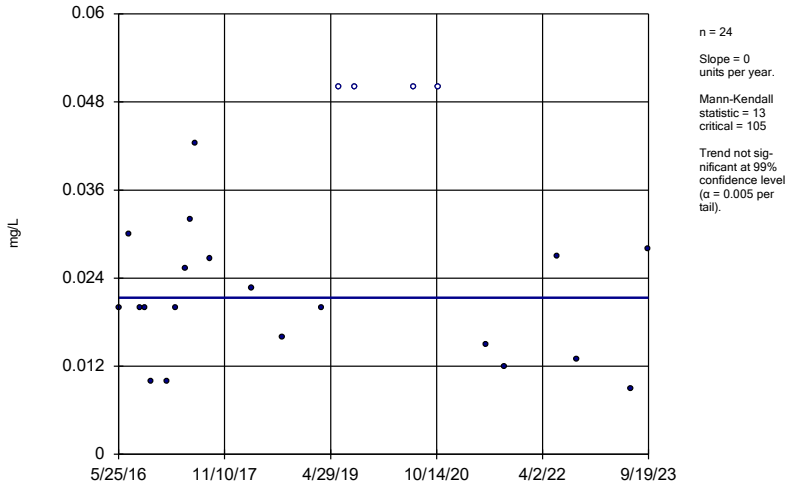
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-13 (bg)



n = 24

Slope = 0 units per year.

Mann-Kendall statistic = 13
critical = 105

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 11/30/2023 12:03 PM View: Appendix III - Interwell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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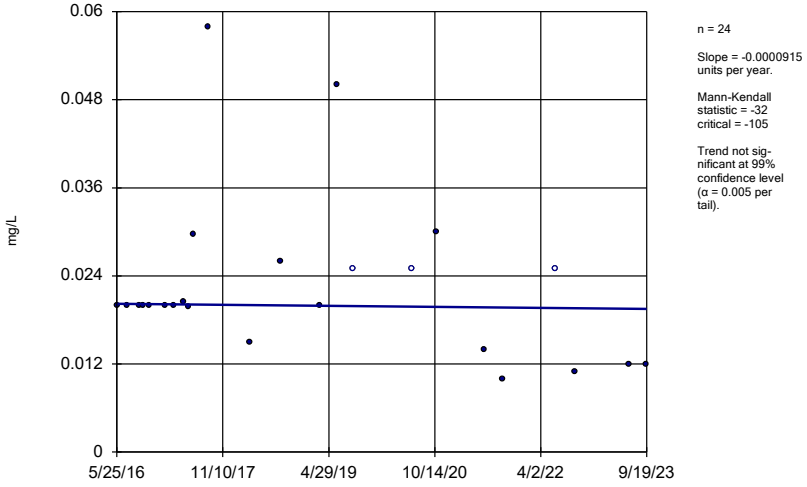
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-1B (bg)



n = 24

Slope = -0.0000915 units per year.

Mann-Kendall statistic = -32
critical = -105

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 11/30/2023 12:03 PM View: Appendix III - Interwell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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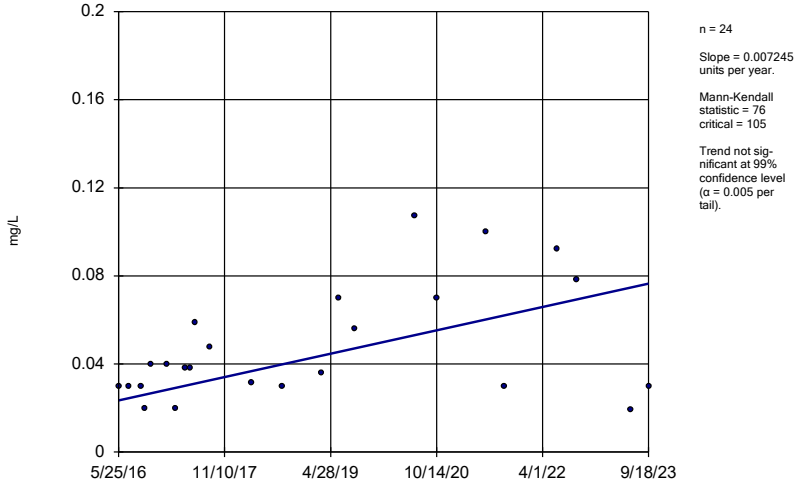
Sen's Slope Estimator

B-4 (bg)



n = 24

Slope = 0.007245 units per year.

Mann-Kendall statistic = 76
critical = 105

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 11/30/2023 12:03 PM View: Appendix III - Interwell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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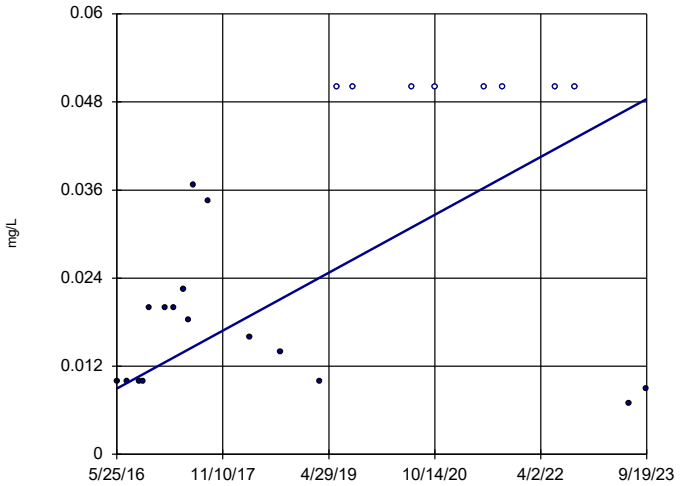
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-5 (bg)



n = 24

Slope = 0.005386 units per year.

Mann-Kendall statistic = 89
critical = 105

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 11/30/2023 12:03 PM View: Appendix III - Interwell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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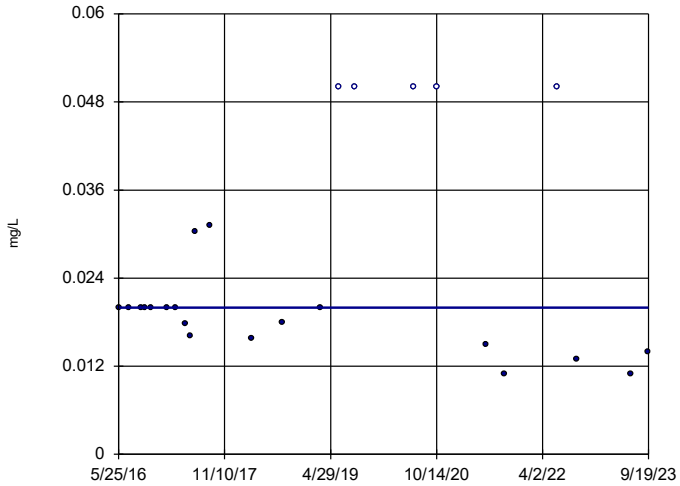
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-7A (bg)



n = 24

Slope = 0 units per year.

Mann-Kendall statistic = -33
critical = -105

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 11/30/2023 12:03 PM View: Appendix III - Interwell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

FIGURE F

Intrawell PLs

Appendix III Intrawell Prediction Limits - All Results

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 12/5/2023, 12:38 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Calcium, total (mg/L)	B-10	116	n/a	n/a	1 future	n/a	23	n/a	n/a	0	n/a	n/a	0.003415	NP Intra (normality) 1 of 2
Calcium, total (mg/L)	B-11	19.79	n/a	n/a	1 future	n/a	22	13.63	3.033	0	None	No	0.001504	Param Intra 1 of 2
Calcium, total (mg/L)	B-12	74.3	n/a	n/a	1 future	n/a	23	60.86	6.666	0	None	No	0.001504	Param Intra 1 of 2
Calcium, total (mg/L)	B-13	21.84	n/a	n/a	1 future	n/a	23	13.6	4.087	0	None	No	0.001504	Param Intra 1 of 2
Calcium, total (mg/L)	B-1B	96.53	n/a	n/a	1 future	n/a	23	86.98	4.734	0	None	No	0.001504	Param Intra 1 of 2
Calcium, total (mg/L)	B-2	50.36	n/a	n/a	1 future	n/a	20	28.57	10.59	0	None	No	0.001504	Param Intra 1 of 2
Calcium, total (mg/L)	B-4	41.5	n/a	n/a	1 future	n/a	23	3.323	1.546	0	None	sqrt(x)	0.001504	Param Intra 1 of 2
Calcium, total (mg/L)	B-5	18.75	n/a	n/a	1 future	n/a	23	16.63	1.048	0	None	No	0.001504	Param Intra 1 of 2
Calcium, total (mg/L)	B-6	58.47	n/a	n/a	1 future	n/a	23	43.77	7.287	0	None	No	0.001504	Param Intra 1 of 2
Calcium, total (mg/L)	B-7A	112.2	n/a	n/a	1 future	n/a	23	98.27	6.928	0	None	No	0.001504	Param Intra 1 of 2
Calcium, total (mg/L)	B-9	130	n/a	n/a	1 future	n/a	23	4.551	0.157	0	None	ln(x)	0.001504	Param Intra 1 of 2
Chloride, total (mg/L)	B-10	12.36	n/a	n/a	1 future	n/a	24	8.968	1.692	0	None	No	0.001504	Param Intra 1 of 2
Chloride, total (mg/L)	B-11	9.816	n/a	n/a	1 future	n/a	23	2.286	0.4199	0	None	sqrt(x)	0.001504	Param Intra 1 of 2
Chloride, total (mg/L)	B-12	12.89	n/a	n/a	1 future	n/a	24	9.78	1.554	0	None	No	0.001504	Param Intra 1 of 2
Chloride, total (mg/L)	B-13	5.227	n/a	n/a	1 future	n/a	24	2.915	1.154	0	None	No	0.001504	Param Intra 1 of 2
Chloride, total (mg/L)	B-1B	5.53	n/a	n/a	1 future	n/a	24	n/a	n/a	0	n/a	n/a	0.003124	NP Intra (normality) 1 of 2
Chloride, total (mg/L)	B-2	8.88	n/a	n/a	1 future	n/a	24	5.256	1.809	0	None	No	0.001504	Param Intra 1 of 2
Chloride, total (mg/L)	B-4	5.962	n/a	n/a	1 future	n/a	11	3.214	1.145	0	None	No	0.001504	Param Intra 1 of 2
Chloride, total (mg/L)	B-5	11.16	n/a	n/a	1 future	n/a	24	7.986	1.585	0	None	No	0.001504	Param Intra 1 of 2
Chloride, total (mg/L)	B-6	8.695	n/a	n/a	1 future	n/a	23	7.158	0.762	0	None	No	0.001504	Param Intra 1 of 2
Chloride, total (mg/L)	B-7A	7.28	n/a	n/a	1 future	n/a	24	n/a	n/a	0	n/a	n/a	0.003124	NP Intra (normality) 1 of 2
Chloride, total (mg/L)	B-9	7.78	n/a	n/a	1 future	n/a	24	5.303	1.236	0	None	No	0.001504	Param Intra 1 of 2
Fluoride, total (mg/L)	B-10	0.3304	n/a	n/a	1 future	n/a	27	n/a	n/a	40.74	n/a	n/a	0.002502	NP Intra (normality) 1 of 2
Fluoride, total (mg/L)	B-11	0.2	n/a	n/a	1 future	n/a	26	n/a	n/a	61.54	n/a	n/a	0.002667	NP Intra (NDs) 1 of 2
Fluoride, total (mg/L)	B-12	0.2	n/a	n/a	1 future	n/a	27	n/a	n/a	48.15	n/a	n/a	0.002502	NP Intra (normality) 1 of 2
Fluoride, total (mg/L)	B-13	0.2121	n/a	n/a	1 future	n/a	27	n/a	n/a	59.26	n/a	n/a	0.002502	NP Intra (NDs) 1 of 2
Fluoride, total (mg/L)	B-1B	0.5611	n/a	n/a	1 future	n/a	27	0.1458	0.08571	14.81	None	x^2	0.001504	Param Intra 1 of 2
Fluoride, total (mg/L)	B-2	0.2	n/a	n/a	1 future	n/a	26	n/a	n/a	50	n/a	n/a	0.002667	NP Intra (normality) 1 of 2
Fluoride, total (mg/L)	B-4	0.2	n/a	n/a	1 future	n/a	27	n/a	n/a	59.26	n/a	n/a	0.002502	NP Intra (NDs) 1 of 2
Fluoride, total (mg/L)	B-5	0.2728	n/a	n/a	1 future	n/a	27	n/a	n/a	48.15	n/a	n/a	0.002502	NP Intra (normality) 1 of 2
Fluoride, total (mg/L)	B-6	0.2066	n/a	n/a	1 future	n/a	27	n/a	n/a	62.96	n/a	n/a	0.002502	NP Intra (NDs) 1 of 2
Fluoride, total (mg/L)	B-7A	0.3892	n/a	n/a	1 future	n/a	27	n/a	n/a	37.04	n/a	n/a	0.002502	NP Intra (normality) 1 of 2
Fluoride, total (mg/L)	B-9	0.3556	n/a	n/a	1 future	n/a	27	n/a	n/a	37.04	n/a	n/a	0.002502	NP Intra (normality) 1 of 2
pH, field (SU)	B-10	8.279	6.123	n/a	1 future	n/a	27	2.676	0.1021	0	None	sqrt(x)	0.000752	Param Intra 1 of 2
pH, field (SU)	B-11	6.897	4.957	n/a	1 future	n/a	27	5.927	0.4919	0	None	No	0.000752	Param Intra 1 of 2
pH, field (SU)	B-12	8.52	6.3	n/a	1 future	n/a	27	n/a	n/a	0	n/a	n/a	0.005004	NP Intra (normality) 1 of 2
pH, field (SU)	B-13	7.259	4.5	n/a	1 future	n/a	27	5.88	0.6994	0	None	No	0.000752	Param Intra 1 of 2
pH, field (SU)	B-1B	8.051	6.414	n/a	1 future	n/a	27	7.233	0.415	0	None	No	0.000752	Param Intra 1 of 2
pH, field (SU)	B-2	6.93	5.142	n/a	1 future	n/a	28	6.036	0.4552	0	None	No	0.000752	Param Intra 1 of 2
pH, field (SU)	B-4	7.763	5.61	n/a	1 future	n/a	27	6.687	0.5459	0	None	No	0.000752	Param Intra 1 of 2
pH, field (SU)	B-5	6.409	4.379	n/a	1 future	n/a	27	5.394	0.5146	0	None	No	0.000752	Param Intra 1 of 2
pH, field (SU)	B-6	7.253	5.883	n/a	1 future	n/a	28	6.568	0.3488	0	None	No	0.000752	Param Intra 1 of 2
pH, field (SU)	B-7A	8.334	6.475	n/a	1 future	n/a	27	7.404	0.4711	0	None	No	0.000752	Param Intra 1 of 2
pH, field (SU)	B-9	8.103	6.287	n/a	1 future	n/a	27	7.195	0.4603	0	None	No	0.000752	Param Intra 1 of 2
Sulfate, total (mg/L)	B-10	35.78	n/a	n/a	1 future	n/a	24	28.68	3.546	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-11	62.57	n/a	n/a	1 future	n/a	23	43.56	9.427	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-12	17.2	n/a	n/a	1 future	n/a	24	9.848	3.671	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-13	31.17	n/a	n/a	1 future	n/a	24	19.53	5.814	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-1B	26.95	n/a	n/a	1 future	n/a	24	20.96	2.991	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-2	194.8	n/a	n/a	1 future	n/a	19	107.8	41.8	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-4	16.7	n/a	n/a	1 future	n/a	24	10.42	3.135	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-5	291.6	n/a	n/a	1 future	n/a	17	233.2	27.47	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-6	42.9	n/a	n/a	1 future	n/a	24	23.22	9.823	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-7A	36.87	n/a	n/a	1 future	n/a	24	33.68	1.593	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-9	44.48	n/a	n/a	1 future	n/a	17	30.26	6.682	0	None	No	0.001504	Param Intra 1 of 2

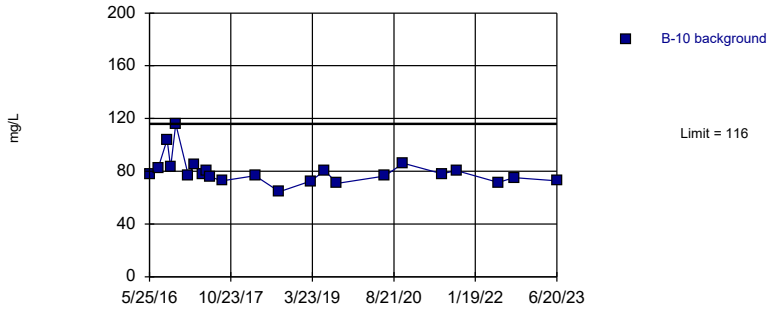
Appendix III Intrawell Prediction Limits - All Results

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 12/5/2023, 12:38 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Total Dissolved Solids [TDS] (mg/L)	B-10	300.9	n/a	n/a	1 future	n/a	24	264.5	18.17	0	None	No	0.001504	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-11	190	n/a	n/a	1 future	n/a	23	132.3	28.62	0	None	No	0.001504	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-12	304	n/a	n/a	1 future	n/a	24	242.6	30.65	0	None	No	0.001504	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-13	109.8	n/a	n/a	1 future	n/a	24	75.75	16.98	0	None	No	0.001504	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-1B	317.6	n/a	n/a	1 future	n/a	24	278.3	19.65	0	None	No	0.001504	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-2	522.3	n/a	n/a	1 future	n/a	20	17.26	2.718	0	None	sqrt(x)	0.001504	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-4	122.6	n/a	n/a	1 future	n/a	24	77.5	22.53	0	None	No	0.001504	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-5	453	n/a	n/a	1 future	n/a	24	406.1	23.4	0	None	No	0.001504	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-6	270.8	n/a	n/a	1 future	n/a	24	191.6	39.53	0	None	No	0.001504	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-7A	378	n/a	n/a	1 future	n/a	24	n/a	n/a	0	n/a	n/a	0.003124	NP Intra (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-9	314.5	n/a	n/a	1 future	n/a	24	255.7	29.35	0	None	No	0.001504	Param Intra 1 of 2

Prediction Limit

Intrawell Non-parametric, B-10

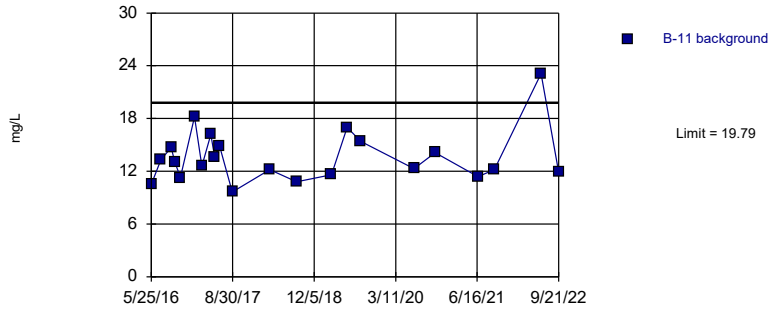


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 23 background values. Well-constituent pair annual alpha = 0.006819. Individual comparison alpha = 0.003415 (1 of 2). Assumes 1 future value.

Constituent: Calcium, total Analysis Run 12/5/2023 12:36 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-11

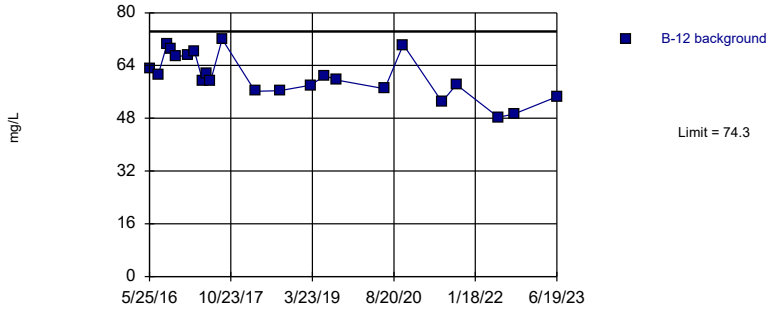


Background Data Summary: Mean=13.63, Std. Dev.=3.033, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8801, critical = 0.878. Kappa = 2.031 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 12/5/2023 12:36 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-12 (bg)

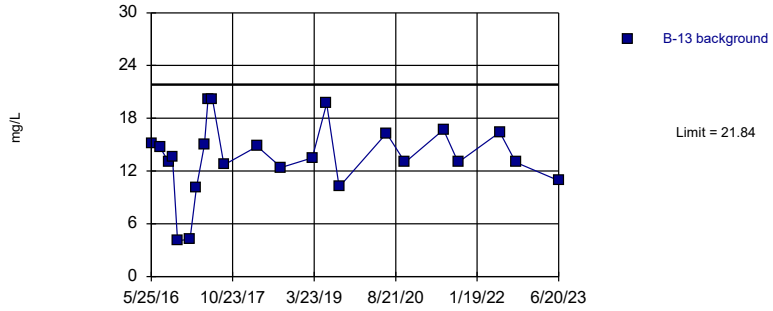


Background Data Summary: Mean=60.86, Std. Dev.=6.666, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9616, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 12/5/2023 12:36 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-13 (bg)

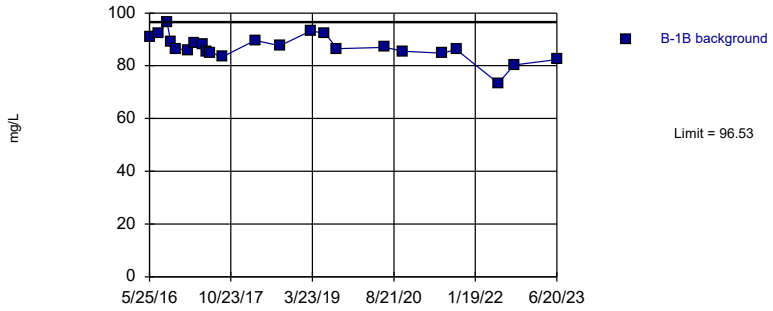


Background Data Summary: Mean=13.6, Std. Dev.=4.087, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9195, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-1B (bg)



Background Data Summary: Mean=86.98, Std. Dev.=4.734, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9497, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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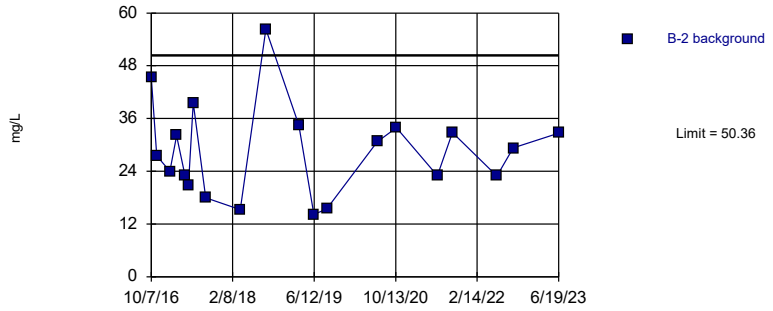
Prediction Limit

Intrawell Parametric, B-2



Background Data Summary: Mean=28.57, Std. Dev.=10.59, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9369, critical = 0.868. Kappa = 2.058 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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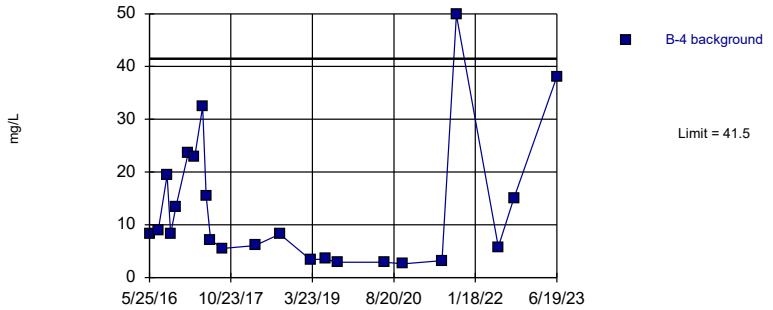
Prediction Limit

Intrawell Parametric, B-4 (bg)



Background Data Summary (based on square root transformation): Mean=3.323, Std. Dev.=1.546, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8974, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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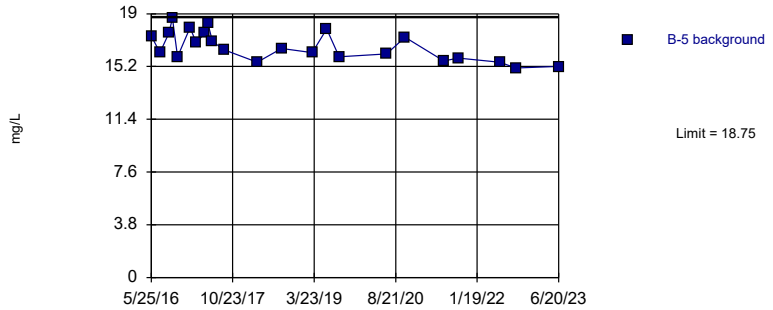
Prediction Limit

Intrawell Parametric, B-5 (bg)

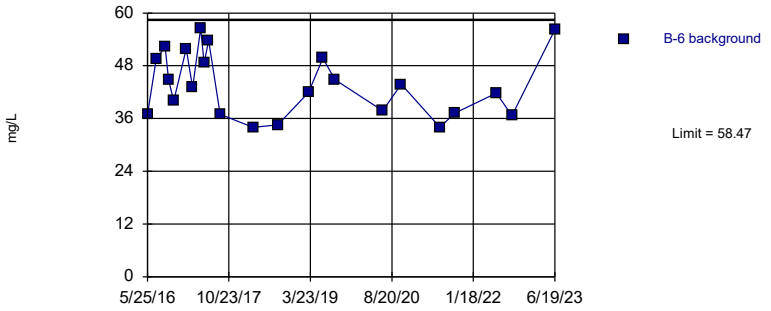


Background Data Summary: Mean=16.63, Std. Dev.=1.048, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9514, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-6

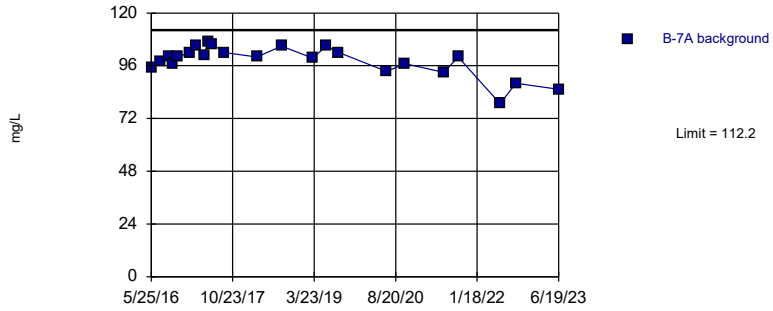


Background Data Summary: Mean=43.77, Std. Dev.=7.287, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9311, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-7A (bg)

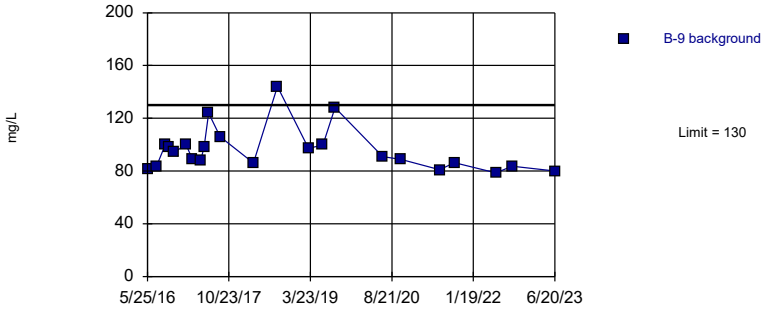


Background Data Summary: Mean=98.27, Std. Dev.=6.928, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8881, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-9

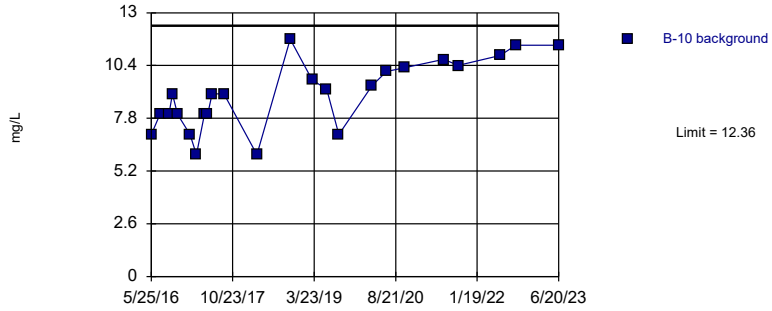


Background Data Summary (based on natural log transformation): Mean=4.551, Std. Dev.=0.157, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8813, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-10

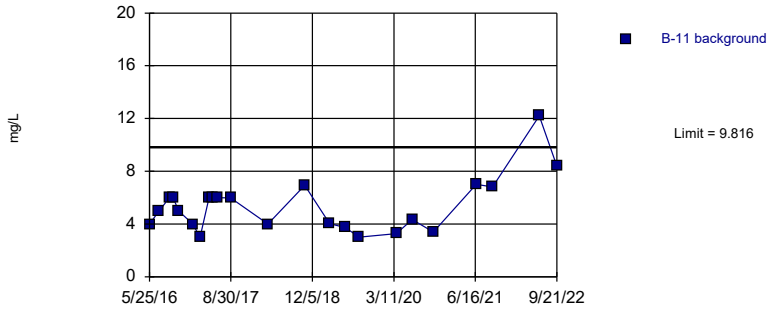


Background Data Summary: Mean=8.968, Std. Dev.=1.692, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9561, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-11

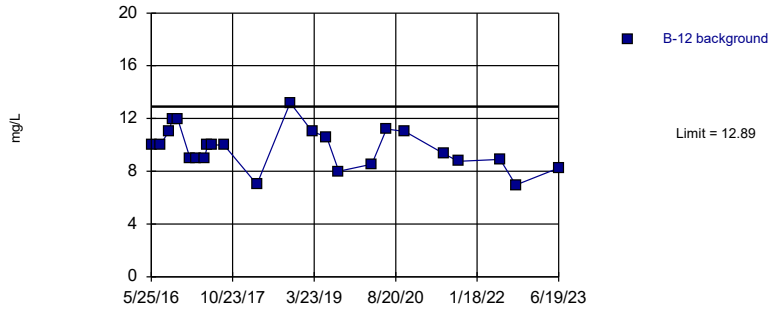


Background Data Summary (based on square root transformation): Mean=2.286, Std. Dev.=0.4199, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9152, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-12 (bg)

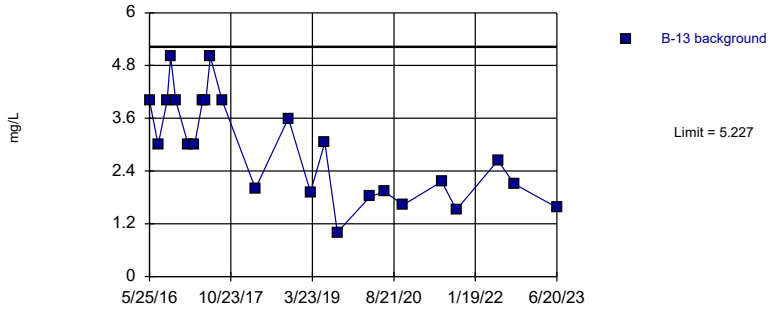


Background Data Summary: Mean=9.78, Std. Dev.=1.554, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9764, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-13 (bg)

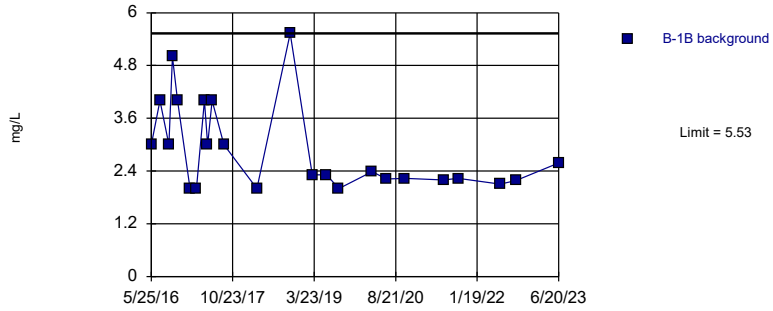


Background Data Summary: Mean=2.915, Std. Dev.=1.154, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9321, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Non-parametric, B-1B (bg)

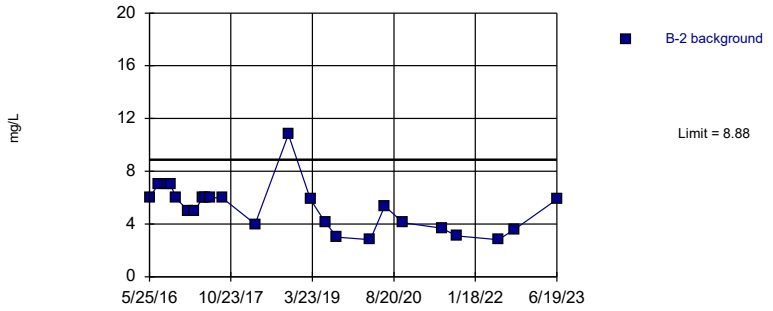


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 24 background values. Well-constituent pair annual alpha = 0.006238. Individual comparison alpha = 0.003124 (1 of 2). Assumes 1 future value.

Constituent: Chloride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-2

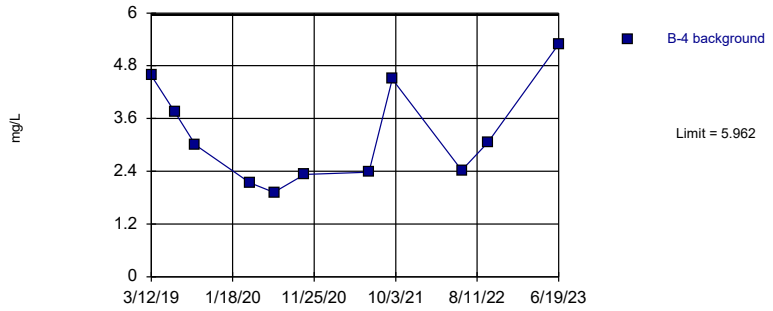


Background Data Summary: Mean=5.256, Std. Dev.=1.809, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8946, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-4 (bg)

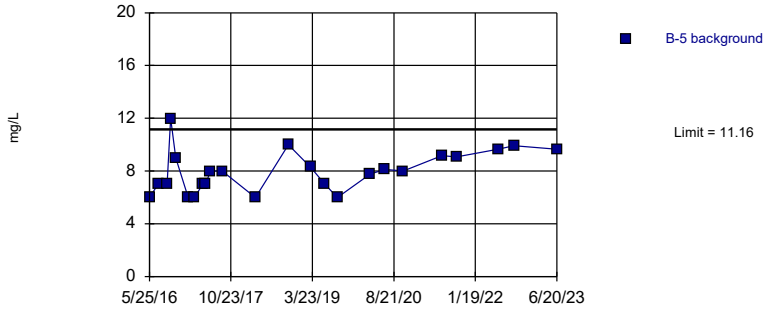


Background Data Summary: Mean=3.214, Std. Dev.=1.145, n=11. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8945, critical = 0.85. Kappa = 2.4 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-5 (bg)

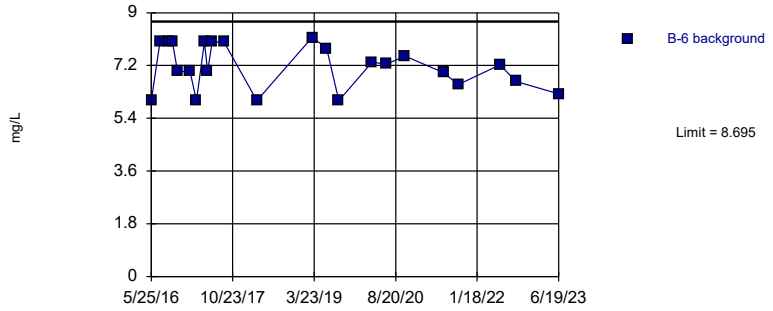


Background Data Summary: Mean=7.986, Std. Dev.=1.585, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9302, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-6

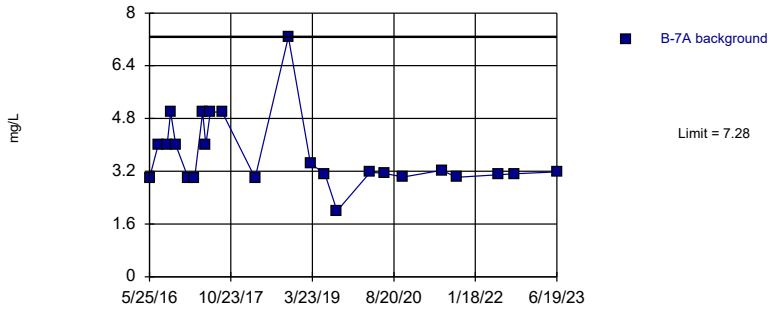


Background Data Summary: Mean=7.158, Std. Dev.=0.762, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8906, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Non-parametric, B-7A (bg)



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 24 background values. Well-constituent pair annual alpha = 0.006238. Individual comparison alpha = 0.003124 (1 of 2). Assumes 1 future value.

Constituent: Chloride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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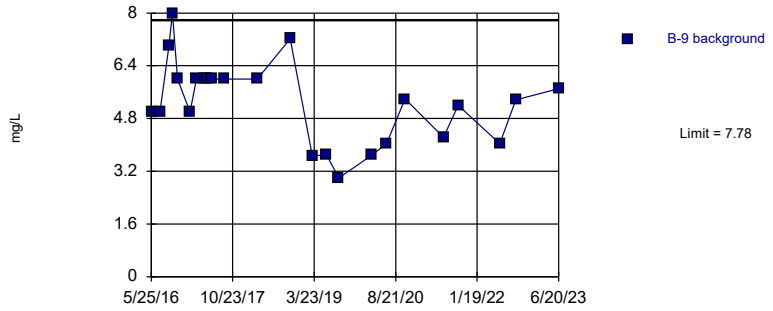
Prediction Limit

Intrawell Parametric, B-9



Background Data Summary: Mean=5.303, Std. Dev.=1.236, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.957, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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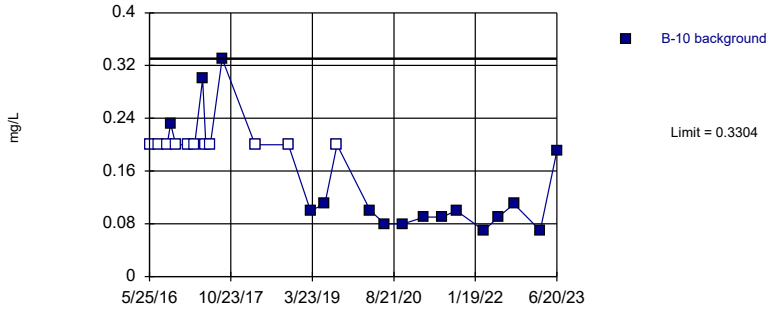
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-10



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 40.74% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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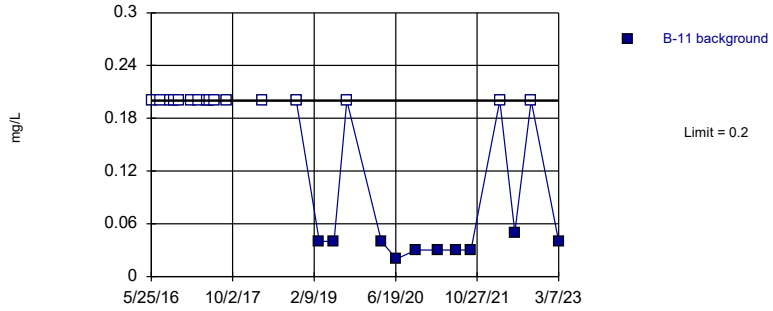
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-11



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 26 background values. 61.54% NDs. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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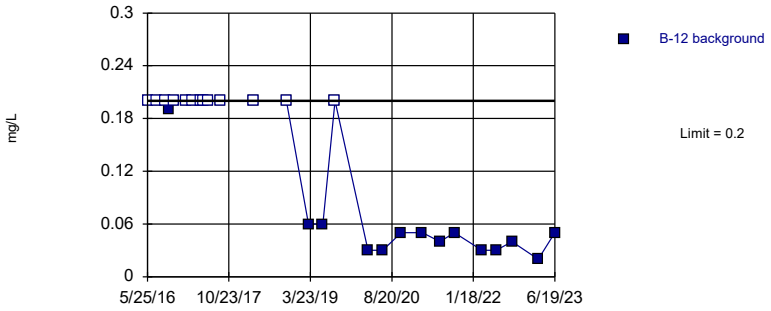
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-12 (bg)



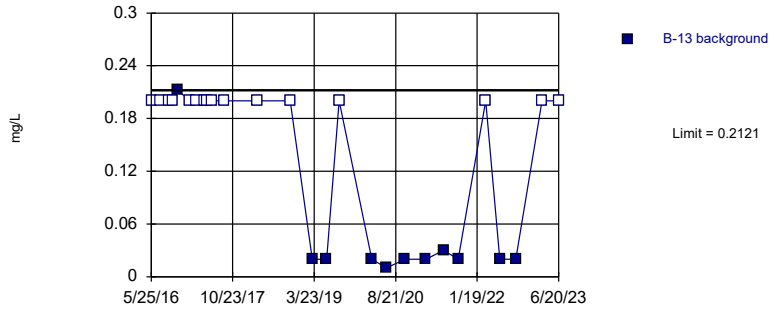
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 48.15% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-13 (bg)



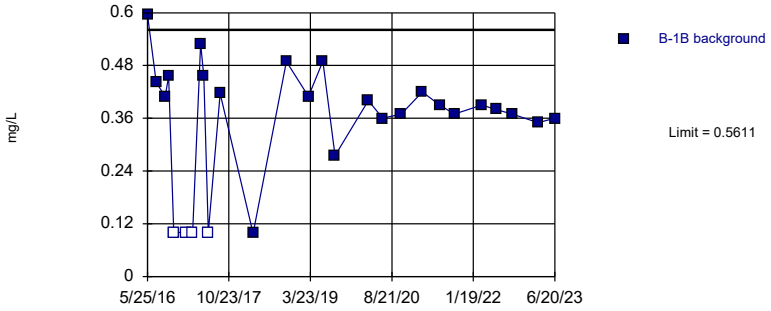
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 59.26% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Parametric, B-1B (bg)



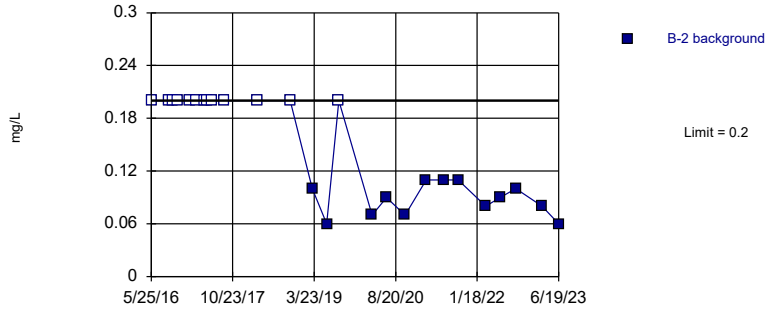
Background Data Summary (based on square transformation): Mean=0.1458, Std. Dev.=0.08571, n=27, 14.81% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9284, critical = 0.894. Kappa = 1.972 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-2



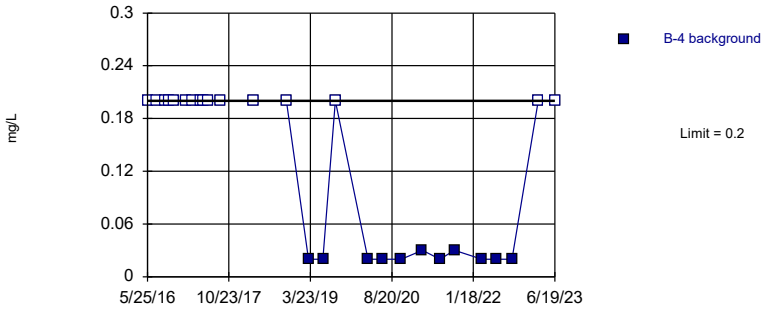
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 26 background values. 50% NDs. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-4 (bg)



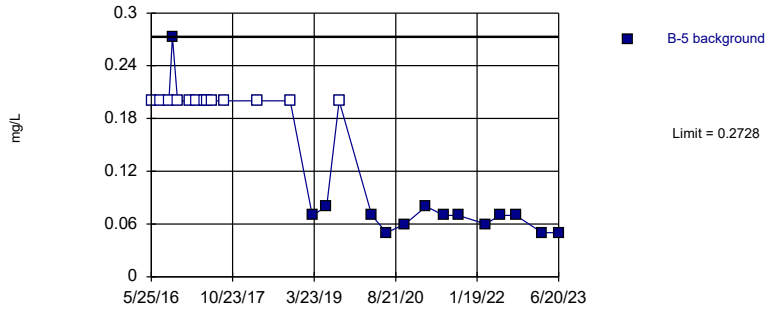
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 59.26% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-5 (bg)



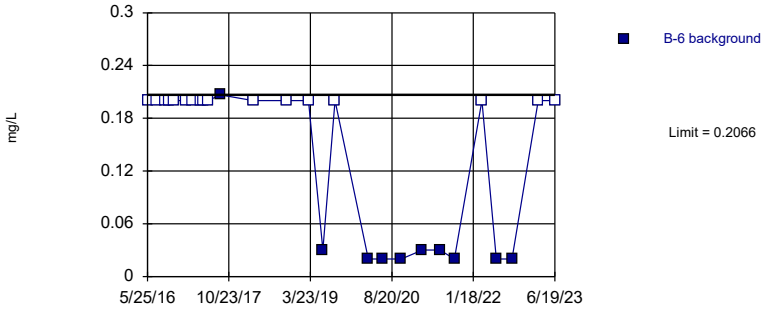
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 48.15% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-6



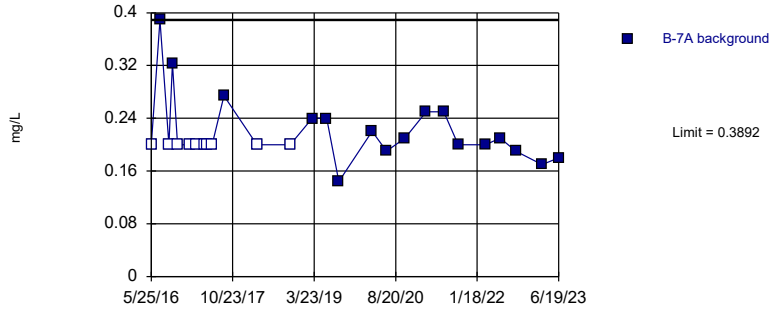
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 62.96% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.15 Software licensed to . UG
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-7A (bg)



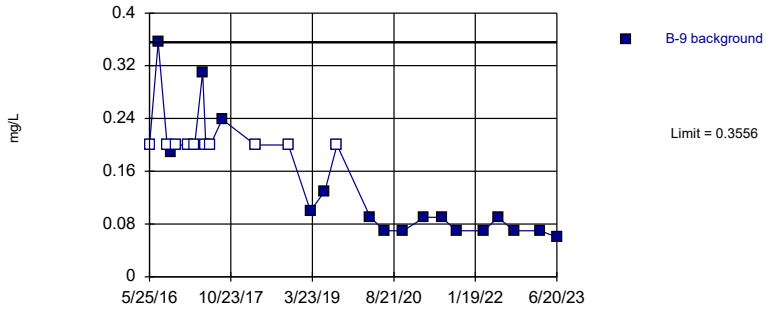
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 37.04% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-9

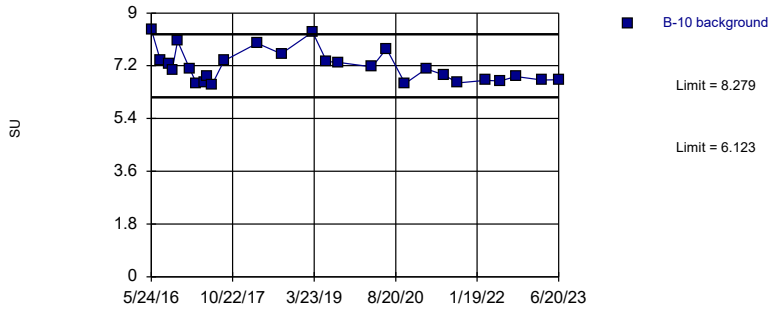


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 37.04% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-10

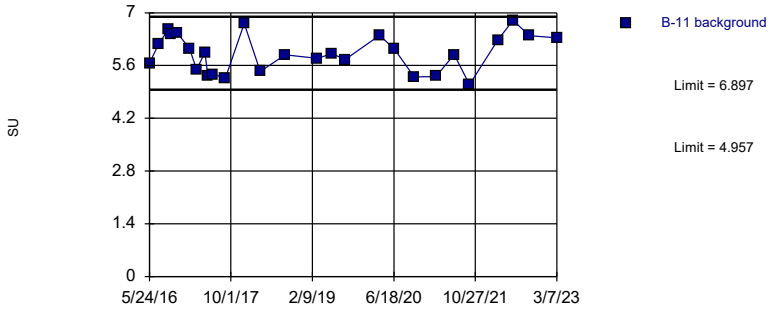


Background Data Summary (based on square root transformation): Mean=2.676, Std. Dev.=0.1021, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.899, critical = 0.894. Kappa = 1.972 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-11

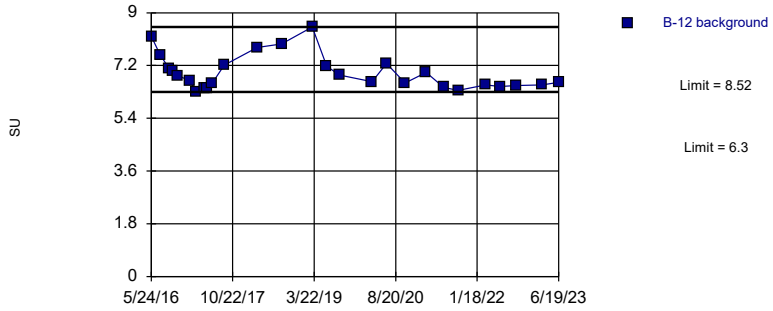


Background Data Summary: Mean=5.927, Std. Dev.=0.4919, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9549, critical = 0.894. Kappa = 1.972 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Non-parametric, B-12 (bg)

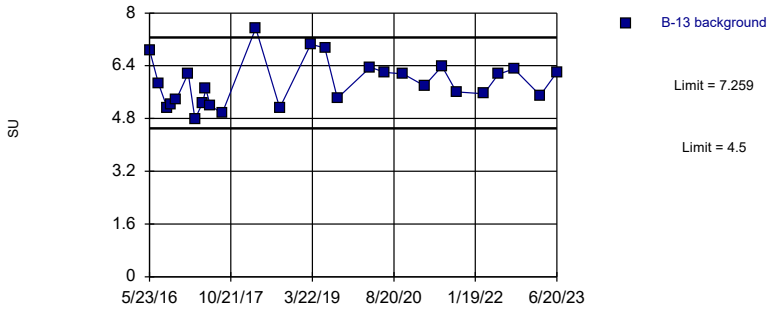


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 27 background values. Well-constituent pair annual alpha = 0.009996. Individual comparison alpha = 0.005004 (1 of 2). Assumes 1 future value.

Constituent: pH, field Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-13 (bg)



Background Data Summary: Mean=5.88, Std. Dev.=0.6994, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.957, critical = 0.894. Kappa = 1.972 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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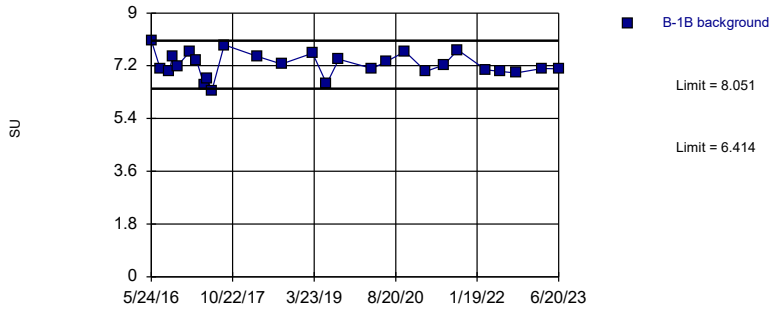
Prediction Limit

Intrawell Parametric, B-1B (bg)



Background Data Summary: Mean=7.233, Std. Dev.=0.415, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.982, critical = 0.894. Kappa = 1.972 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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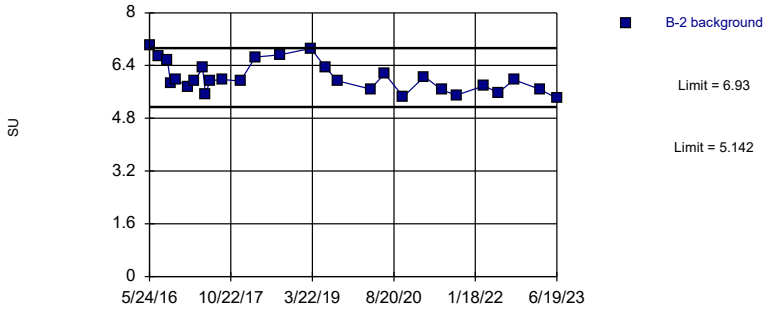
Prediction Limit

Intrawell Parametric, B-2



Background Data Summary: Mean=6.036, Std. Dev.=0.4552, n=28. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9226, critical = 0.896. Kappa = 1.964 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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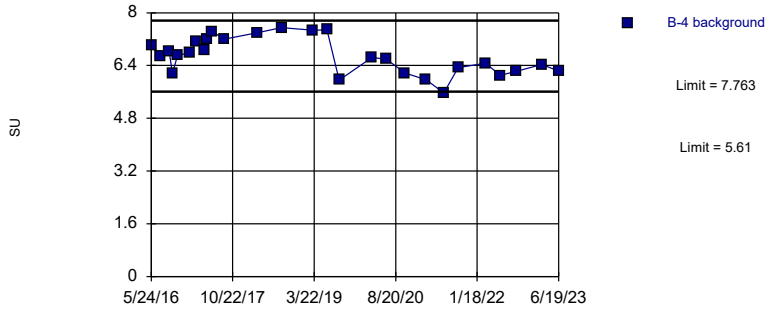
Prediction Limit

Intrawell Parametric, B-4 (bg)

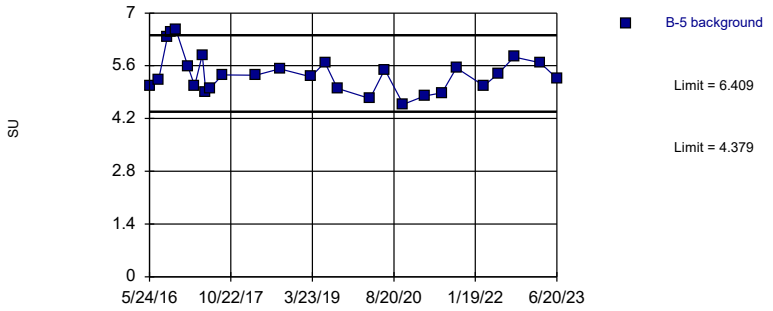


Background Data Summary: Mean=6.687, Std. Dev.=0.5459, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9607, critical = 0.894. Kappa = 1.972 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-5 (bg)



Background Data Summary: Mean=5.394, Std. Dev.=0.5146, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.937, critical = 0.894. Kappa = 1.972 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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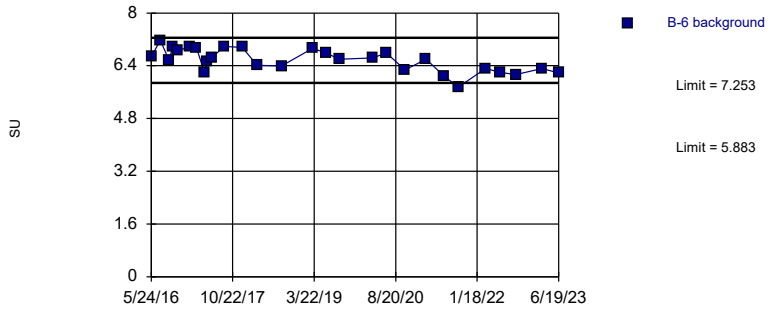
Prediction Limit

Intrawell Parametric, B-6



Background Data Summary: Mean=6.568, Std. Dev.=0.3488, n=28. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9643, critical = 0.896. Kappa = 1.964 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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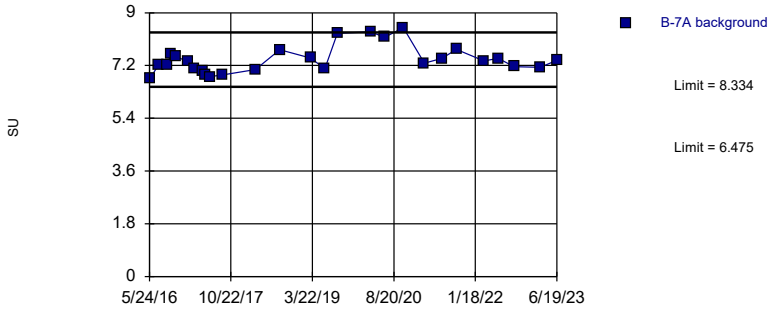
Prediction Limit

Intrawell Parametric, B-7A (bg)



Background Data Summary: Mean=7.404, Std. Dev.=0.4711, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9092, critical = 0.894. Kappa = 1.972 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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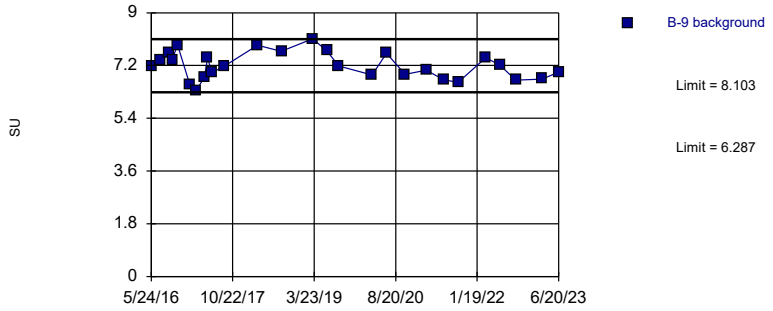
Prediction Limit

Intrawell Parametric, B-9

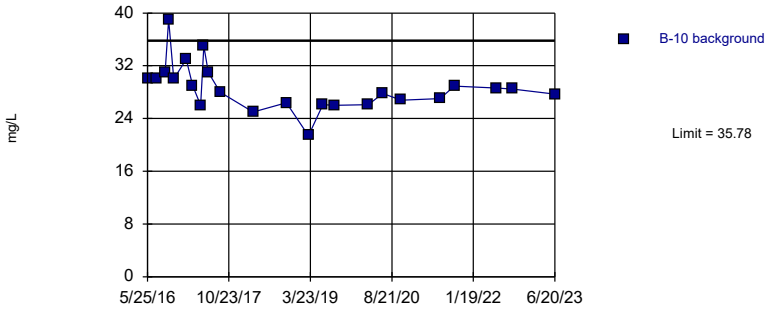


Background Data Summary: Mean=7.195, Std. Dev.=0.4603, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9741, critical = 0.894. Kappa = 1.972 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-10

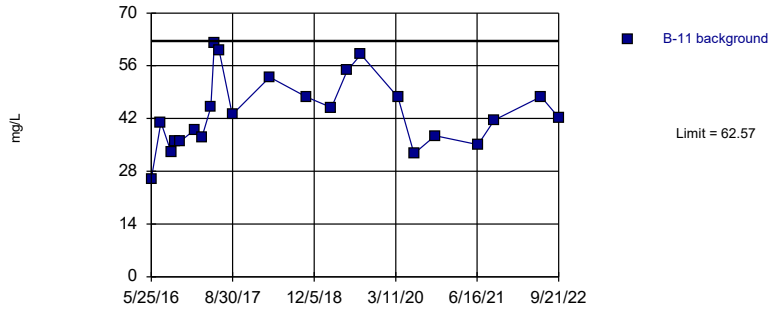


Background Data Summary: Mean=28.68, Std. Dev.=3.546, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9249, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-11

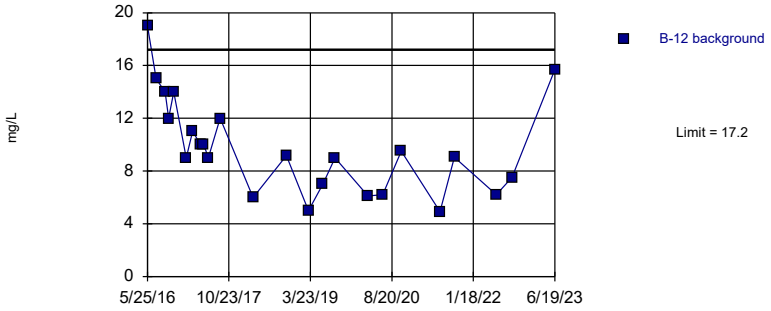


Background Data Summary: Mean=43.56, Std. Dev.=9.427, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9634, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-12 (bg)

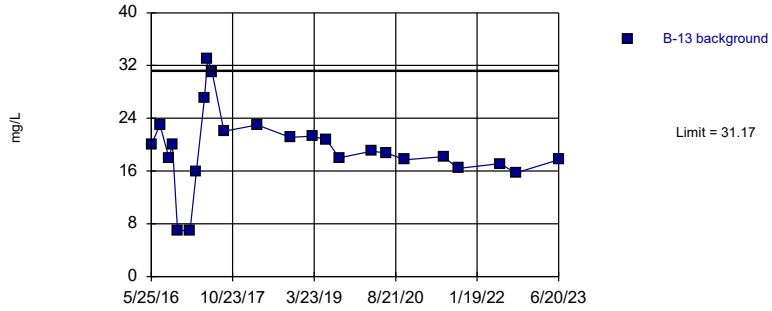


Background Data Summary: Mean=9.848, Std. Dev.=3.671, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9371, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-13 (bg)

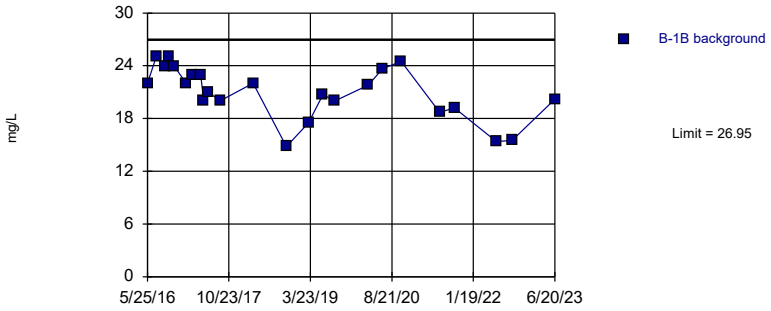


Background Data Summary: Mean=19.53, Std. Dev.=5.814, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9102, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-1B (bg)

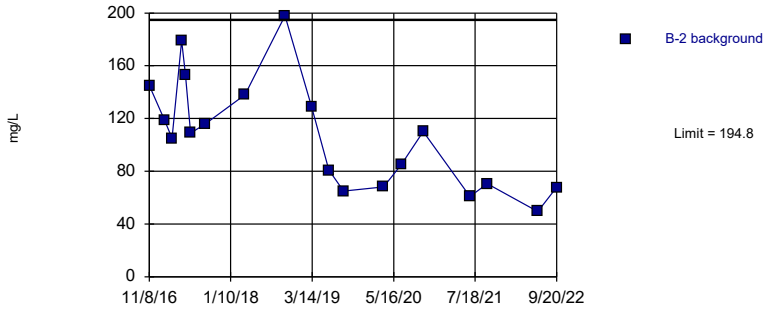


Background Data Summary: Mean=20.96, Std. Dev.=2.991, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.934, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-2

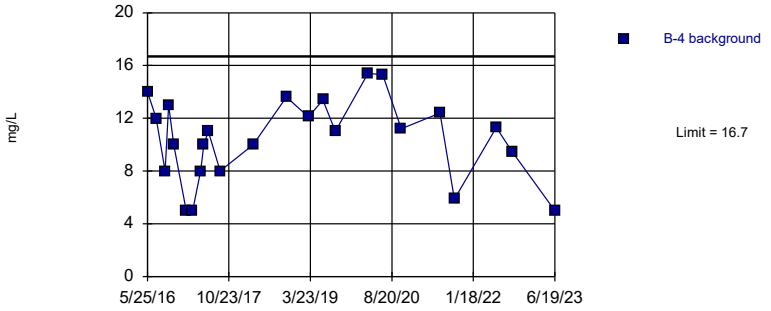


Background Data Summary: Mean=107.8, Std. Dev.=41.8, n=19. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9466, critical = 0.901. Kappa = 2.081 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-4 (bg)

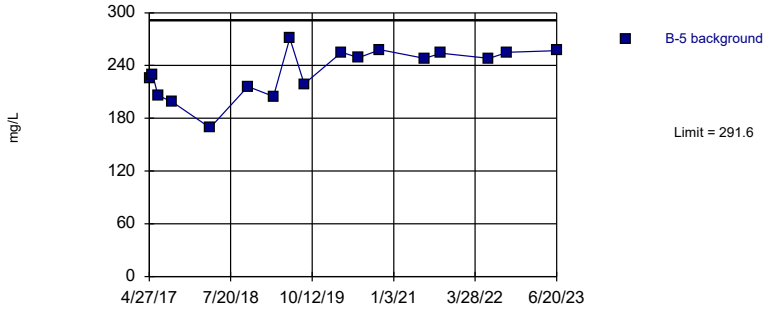


Background Data Summary: Mean=10.42, Std. Dev.=3.135, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9454, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-5 (bg)

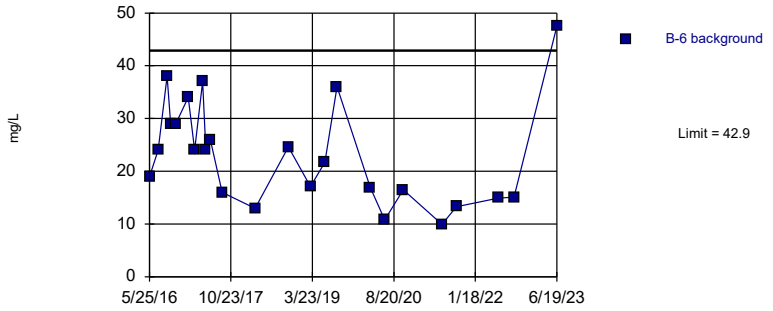


Background Data Summary: Mean=233.2, Std. Dev.=27.47, n=17. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.915, critical = 0.892. Kappa = 2.127 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-6



Background Data Summary: Mean=23.22, Std. Dev.=9.823, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9357, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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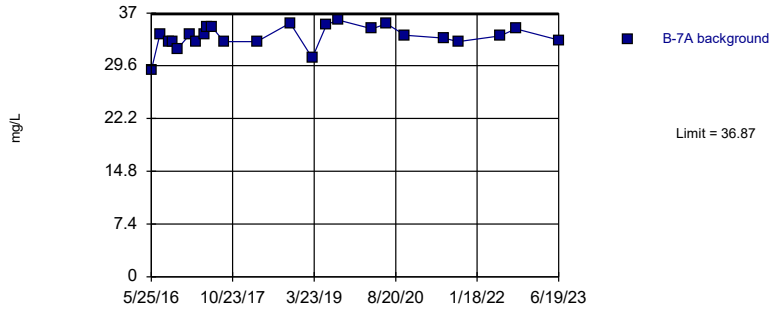
Prediction Limit

Intrawell Parametric, B-7A (bg)



Background Data Summary: Mean=33.68, Std. Dev.=1.593, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9073, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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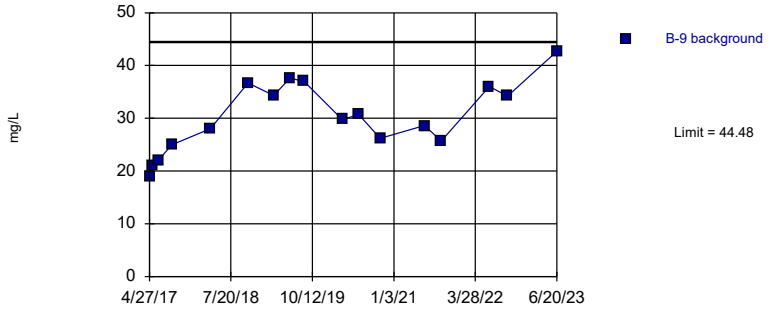
Prediction Limit

Intrawell Parametric, B-9



Background Data Summary: Mean=30.26, Std. Dev.=6.682, n=17. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.971, critical = 0.892. Kappa = 2.127 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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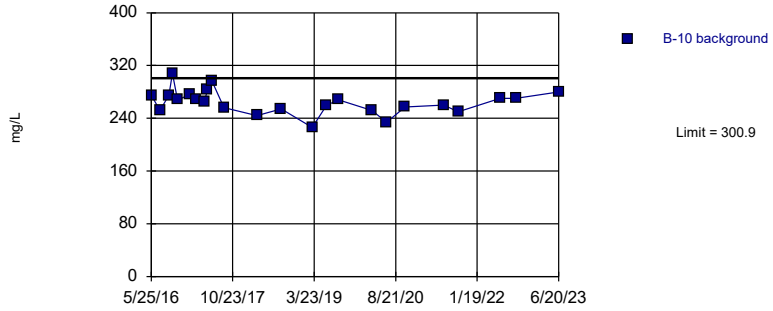
Prediction Limit

Intrawell Parametric, B-10

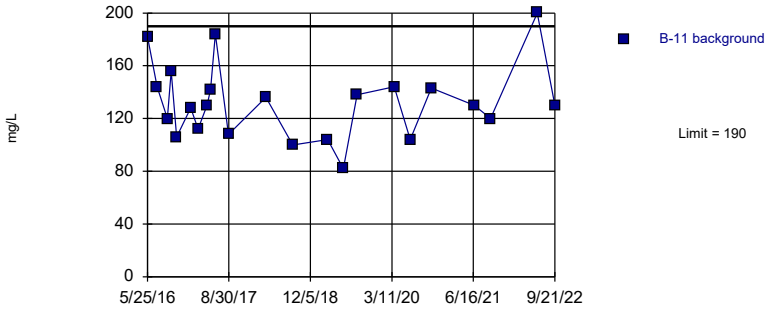


Background Data Summary: Mean=264.5, Std. Dev.=18.17, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9794, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-11



Background Data Summary: Mean=132.3, Std. Dev.=28.62, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9449, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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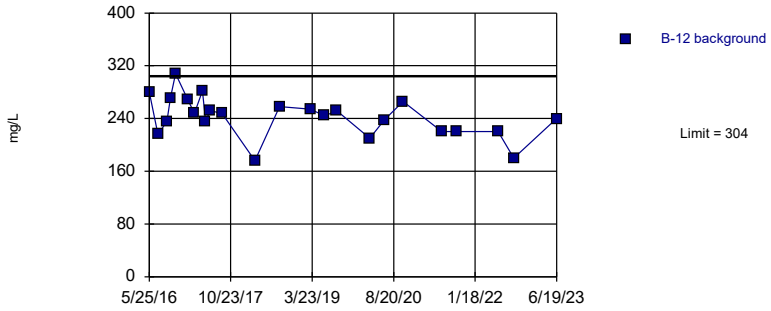
Prediction Limit

Intrawell Parametric, B-12 (bg)



Background Data Summary: Mean=242.6, Std. Dev.=30.65, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9734, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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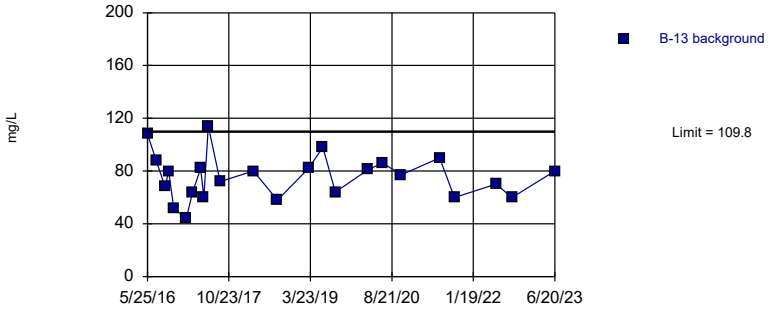
Prediction Limit

Intrawell Parametric, B-13 (bg)



Background Data Summary: Mean=75.75, Std. Dev.=16.98, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9722, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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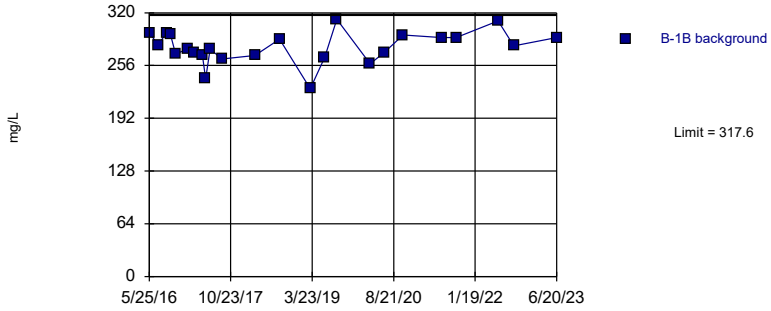
Prediction Limit

Intrawell Parametric, B-1B (bg)

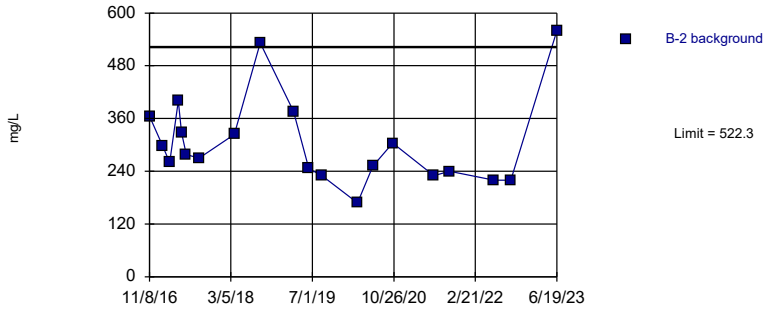


Background Data Summary: Mean=278.3, Std. Dev.=19.65, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9533, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-2

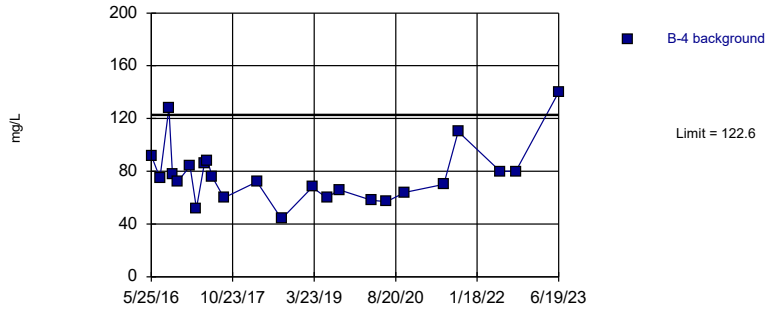


Background Data Summary (based on square root transformation): Mean=17.26, Std. Dev.=2.718, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9137, critical = 0.868. Kappa = 2.058 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:37 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-4 (bg)

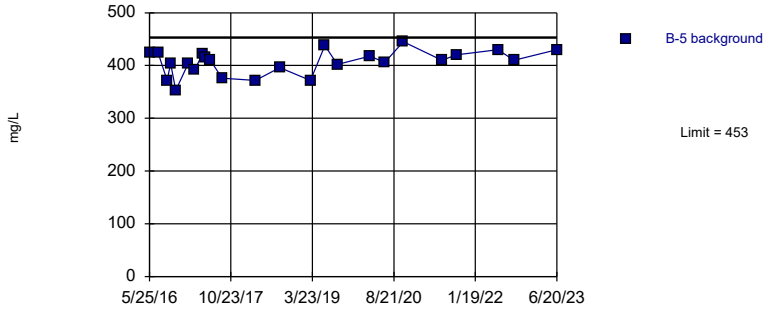


Background Data Summary: Mean=77.5, Std. Dev.=22.53, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8892, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:38 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-5 (bg)

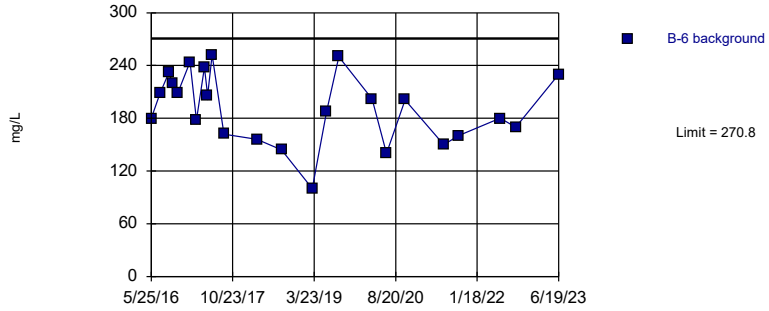


Background Data Summary: Mean=406.1, Std. Dev.=23.4, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9514, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:38 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-6

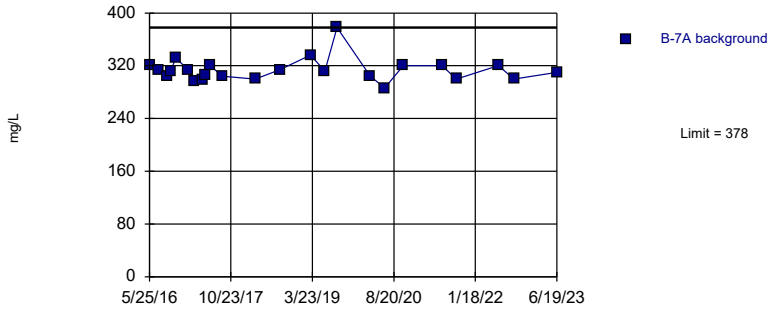


Background Data Summary: Mean=191.6, Std. Dev.=39.53, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9694, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:38 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Non-parametric, B-7A (bg)



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 24 background values. Well-constituent pair annual alpha = 0.006238. Individual comparison alpha = 0.003124 (1 of 2). Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:38 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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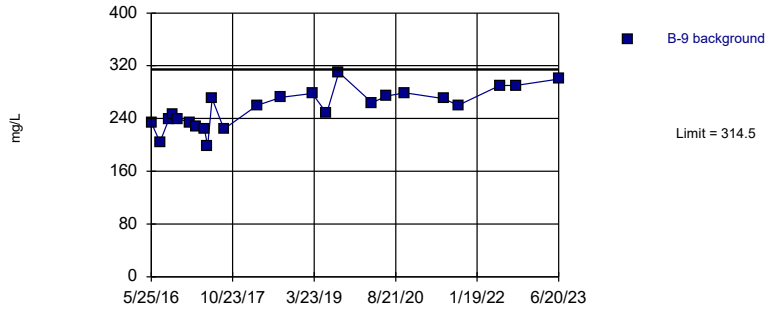
Prediction Limit

Intrawell Parametric, B-9



Background Data Summary: Mean=255.7, Std. Dev.=29.35, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9793, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/5/2023 12:38 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

FIGURE G

Interwell PLs

Appendix III Interwell Prediction Limit - All Results

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 11/30/2023, 12:05 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron, total (mg/L)	n/a	0.107	n/a	n/a	5 future	n/a	144	n/a	n/a	15.97	n/a	n/a	0.00009505	NP Inter (normality) 1 of 2

FIGURE H

UTLs

Upper Tolerance Limits Summary Table

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 12/13/2023, 3:57 PM

Constituent	Upper Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony, total (mg/L)	0.00452	n/a	n/a	n/a	162	n/a	n/a	60.49	n/a	n/a	0.0002462	NP Inter(NDs)
Arsenic, total (mg/L)	0.00983	n/a	n/a	n/a	162	n/a	n/a	32.1	n/a	n/a	0.0002462	NP Inter(normality)
Barium, total (mg/L)	0.131	n/a	n/a	n/a	162	n/a	n/a	0	n/a	n/a	0.0002462	NP Inter(normality)
Beryllium, total (mg/L)	0.001	n/a	n/a	n/a	162	n/a	n/a	27.16	n/a	n/a	0.0002462	NP Inter(normality)
Cadmium, total (mg/L)	0.001	n/a	n/a	n/a	162	n/a	n/a	33.95	n/a	n/a	0.0002462	NP Inter(normality)
Chromium, total (mg/L)	0.006	n/a	n/a	n/a	161	n/a	n/a	6.832	n/a	n/a	0.0002591	NP Inter(normality)
Cobalt, total (mg/L)	0.005179	n/a	n/a	n/a	160	-8.063	1.505	2.5	None	ln(x)	0.05	Inter
Combined Radium 226 + 228 (pCi/L)	8.79	n/a	n/a	n/a	156	n/a	n/a	0	n/a	n/a	0.0003349	NP Inter(normality)
Fluoride, total (mg/L)	0.5955	n/a	n/a	n/a	168	n/a	n/a	42.86	n/a	n/a	0.000181	NP Inter(normality)
Lead, total (mg/L)	0.00389	n/a	n/a	n/a	161	n/a	n/a	40.99	n/a	n/a	0.0002591	NP Inter(normality)
Lithium, total (mg/L)	0.041	n/a	n/a	n/a	156	n/a	n/a	1.282	n/a	n/a	0.0003349	NP Inter(normality)
Mercury, total (mg/L)	0.000096	n/a	n/a	n/a	162	n/a	n/a	62.96	n/a	n/a	0.0002462	NP Inter(NDs)
Molybdenum, total (mg/L)	0.004655	n/a	n/a	n/a	162	n/a	n/a	54.32	n/a	n/a	0.0002462	NP Inter(NDs)
Selenium, total (mg/L)	0.0392	n/a	n/a	n/a	162	n/a	n/a	46.3	n/a	n/a	0.0002462	NP Inter(normality)
Thallium, total (mg/L)	0.001985	n/a	n/a	n/a	162	n/a	n/a	87.04	n/a	n/a	0.0002462	NP Inter(NDs)

FIGURE I

GWPS

FLINT CREEK LANDFILL GWPS				
Constituent Name	**MCL**	**CCR-Rule Specified**	**Background Limit**	**GWPS**
Antimony, Total (mg/L)	0.006		0.0045	0.006
Arsenic, Total (mg/L)	0.01		0.0098	0.01
Barium, Total (mg/L)	2		0.13	2
Beryllium, Total (mg/L)	0.004		0.001	0.004
Cadmium, Total (mg/L)	0.005		0.001	0.005
Chromium, Total (mg/L)	0.1		0.006	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.0052	0.006
Combined Radium, Total (pCi/L)	5		8.79	8.79
Fluoride, Total (mg/L)	4		0.6	4
Lead, Total (mg/L)	n/a	0.015	0.0039	0.015
Lithium, Total (mg/L)	n/a	0.04	0.041	0.041
Mercury, Total (mg/L)	0.002		0.000096	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.0047	0.1
Selenium, Total (mg/L)	0.05		0.0392	0.05
Thallium, Total (mg/L)	0.002		0.002	0.002

**Grey cell indicates background limit is higher than MCL or CCR-Rule Specified level*

**GWPS = Groundwater Protection Standard*

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residual*

FIGURE J
Confidence Intervals

Confidence Intervals - All Results (No Significant)

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 12/13/2023, 4:03 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony, total (mg/L)	B-10	0.005	0.000108	0.006	No	27	0.002118	0.002436	40.74	None	No	0.01	NP (normality)
Antimony, total (mg/L)	B-11	0.0001	0.000019	0.006	No	26	0.0002777	0.000941	88.46	None	No	0.01	NP (NDs)
Antimony, total (mg/L)	B-2	0.001152	0.000028	0.006	No	27	0.0005339	0.00122	40.74	None	No	0.01	NP (normality)
Antimony, total (mg/L)	B-6	0.0001	0.00008	0.006	No	27	0.0001334	0.0002649	70.37	None	No	0.01	NP (NDs)
Antimony, total (mg/L)	B-9	0.0005	0.00003	0.006	No	27	0.0002945	0.0003177	44.44	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	B-10	0.005	0.00038	0.01	No	27	0.002438	0.002313	29.63	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	B-11	0.005	0.00017	0.01	No	25	0.002011	0.002378	28	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	B-2	0.00177	0.00022	0.01	No	27	0.001759	0.003457	14.81	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	B-6	0.003636	0.00019	0.01	No	27	0.001635	0.001986	22.22	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	B-9	0.00168	0.00052	0.01	No	27	0.002055	0.001976	29.63	None	No	0.01	NP (normality)
Barium, total (mg/L)	B-10	0.08535	0.07878	2	No	27	0.08229	0.007245	0	None	ln(x)	0.01	Param.
Barium, total (mg/L)	B-11	0.1281	0.104	2	No	25	0.1161	0.02413	0	None	No	0.01	Param.
Barium, total (mg/L)	B-2	0.07945	0.0493	2	No	26	0.08073	0.05318	0	None	No	0.01	NP (normality)
Barium, total (mg/L)	B-6	0.05876	0.0466	2	No	27	0.05268	0.01274	0	None	No	0.01	Param.
Barium, total (mg/L)	B-9	0.16	0.1465	2	No	27	0.1533	0.01414	0	None	No	0.01	Param.
Beryllium, total (mg/L)	B-10	0.00005	0.000047	0.004	No	27	0.00005605	0.00005972	59.26	None	No	0.01	NP (NDs)
Beryllium, total (mg/L)	B-11	0.000451	0.000225	0.004	No	25	0.0004149	0.0003951	0	None	ln(x)	0.01	Param.
Beryllium, total (mg/L)	B-2	0.00017	0.00008	0.004	No	26	0.0001838	0.0002164	0	None	No	0.01	NP (normality)
Beryllium, total (mg/L)	B-6	0.0001051	0.00002849	0.004	No	27	0.0001014	0.0001131	18.52	Kaplan-Meier	sqrt(x)	0.01	Param.
Beryllium, total (mg/L)	B-9	0.00005	0.00003324	0.004	No	27	0.00004258	0.00001388	59.26	Kaplan-Meier	No	0.01	NP (NDs)
Cadmium, total (mg/L)	B-10	0.0002	0.000026	0.005	No	27	0.0001138	0.0001032	40.74	None	No	0.01	NP (normality)
Cadmium, total (mg/L)	B-11	0.0002742	0.00008967	0.005	No	25	0.0003125	0.0004515	0	None	ln(x)	0.01	Param.
Cadmium, total (mg/L)	B-2	0.0008704	0.000024	0.005	No	27	0.000329	0.000438	25.93	None	No	0.01	NP (normality)
Cadmium, total (mg/L)	B-6	0.00002	0.000015	0.005	No	27	0.0000474	0.00007271	33.33	None	No	0.01	NP (normality)
Cadmium, total (mg/L)	B-9	0.00002	0.000011	0.005	No	27	0.0000207	0.00001537	59.26	None	No	0.01	NP (NDs)
Chromium, total (mg/L)	B-10	0.002	0.00063	0.1	No	27	0.003136	0.007405	0	None	No	0.01	NP (normality)
Chromium, total (mg/L)	B-11	0.00327	0.00092	0.1	No	25	0.003438	0.005385	0	None	No	0.01	NP (normality)
Chromium, total (mg/L)	B-2	0.00376	0.00147	0.1	No	27	0.004732	0.008092	0	None	No	0.01	NP (normality)
Chromium, total (mg/L)	B-6	0.003329	0.001969	0.1	No	27	0.00303	0.002143	0	None	ln(x)	0.01	Param.
Chromium, total (mg/L)	B-9	0.001983	0.001063	0.1	No	27	0.001638	0.001054	0	None	sqrt(x)	0.01	Param.
Cobalt, total (mg/L)	B-10	0.000934	0.000286	0.006	No	27	0.0007606	0.0009792	3.704	None	sqrt(x)	0.01	Param.
Cobalt, total (mg/L)	B-11	0.000824	0.000098	0.006	No	25	0.0008523	0.001496	0	None	No	0.01	NP (normality)
Cobalt, total (mg/L)	B-2	0.0005319	0.0001403	0.006	No	25	0.0007034	0.001252	0	None	ln(x)	0.01	Param.
Cobalt, total (mg/L)	B-6	0.001096	0.0002806	0.006	No	27	0.0009047	0.001124	0	None	sqrt(x)	0.01	Param.
Cobalt, total (mg/L)	B-9	0.0007904	0.0003044	0.006	No	27	0.0006394	0.0005853	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	B-10	1.484	0.9646	8.79	No	26	1.224	0.5331	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	B-11	1.55	0.874	8.79	No	25	1.918	2.738	0	None	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	B-2	2.053	1.309	8.79	No	26	1.744	0.8242	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	B-6	1.577	0.6478	8.79	No	26	1.746	2.873	0	None	ln(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	B-9	1.552	0.7098	8.79	No	26	1.488	1.781	0	None	ln(x)	0.01	Param.
Fluoride, total (mg/L)	B-10	0.2	0.1	4	No	28	0.1604	0.06989	39.29	None	No	0.01	NP (normality)
Fluoride, total (mg/L)	B-11	0.2	0.04	4	No	27	0.133	0.08255	59.26	None	No	0.01	NP (NDs)
Fluoride, total (mg/L)	B-2	0.2	0.08	4	No	27	0.1407	0.05961	48.15	None	No	0.01	NP (normality)
Fluoride, total (mg/L)	B-6	0.2	0.03	4	No	28	0.1374	0.08612	60.71	None	No	0.01	NP (NDs)
Fluoride, total (mg/L)	B-9	0.2	0.09	4	No	28	0.1512	0.07991	35.71	None	No	0.01	NP (normality)
Lead, total (mg/L)	B-10	0.0004242	0.0001382	0.015	No	27	0.0004098	0.0005519	40.74	Kaplan-Meier	ln(x)	0.01	Param.
Lead, total (mg/L)	B-11	0.00083	0.00016	0.015	No	25	0.00106	0.002156	44	None	No	0.01	NP (normality)
Lead, total (mg/L)	B-2	0.0008	0.0001	0.015	No	26	0.001043	0.002606	30.77	None	No	0.01	NP (normality)
Lead, total (mg/L)	B-6	0.001133	0.0003064	0.015	No	27	0.0009303	0.001104	3.704	None	sqrt(x)	0.01	Param.
Lead, total (mg/L)	B-9	0.00022	0.00013	0.015	No	27	0.0002841	0.0002519	48.15	None	No	0.01	NP (normality)
Lithium, total (mg/L)	B-10	0.00308	0.0014	0.041	No	26	0.003059	0.003206	0	None	No	0.01	NP (normality)
Lithium, total (mg/L)	B-11	0.004321	0.001604	0.041	No	25	0.004793	0.00712	0	None	ln(x)	0.01	Param.
Lithium, total (mg/L)	B-2	0.005	0.00103	0.041	No	26	0.004534	0.006689	0	None	No	0.01	NP (normality)
Lithium, total (mg/L)	B-6	0.002	0.000407	0.041	No	25	0.001271	0.001161	0	None	No	0.01	NP (normality)
Lithium, total (mg/L)	B-9	0.00386	0.00279	0.041	No	26	0.00395	0.002805	0	None	No	0.01	NP (normality)

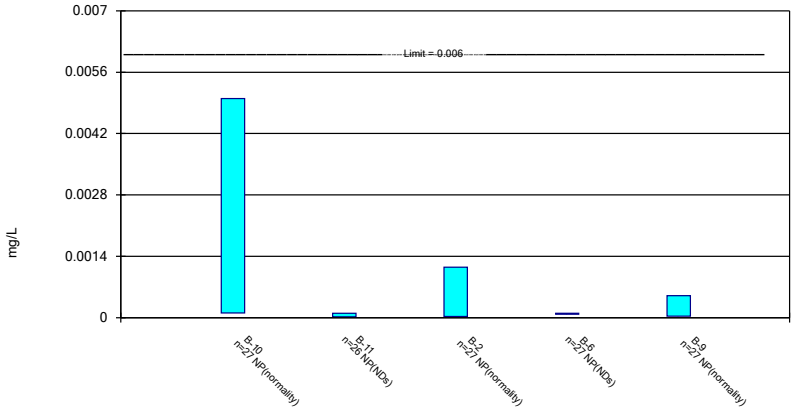
Confidence Intervals - All Results (No Significant)

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 12/13/2023, 4:03 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Mercury, total (mg/L)	B-10	0.000005	0.000005	0.002	No	27	0.000006728	0.000004925	74.07	None	No	0.01	NP (NDs)
Mercury, total (mg/L)	B-11	0.00002442	0.000005	0.002	No	26	0.00001004	0.00001851	88.46	None	No	0.01	NP (NDs)
Mercury, total (mg/L)	B-2	0.000005	0.000005	0.002	No	27	0.000008409	0.000009881	74.07	None	No	0.01	NP (NDs)
Mercury, total (mg/L)	B-6	0.00000738	0.000005	0.002	No	27	0.000006243	0.000002598	62.96	None	No	0.01	NP (NDs)
Mercury, total (mg/L)	B-9	0.00000774	0.000005	0.002	No	27	0.000005797	0.000002535	88.89	None	No	0.01	NP (NDs)
Molybdenum, total (mg/L)	B-10	0.001737	0.0008302	0.1	No	27	0.001733	0.002049	7.407	None	ln(x)	0.01	Param.
Molybdenum, total (mg/L)	B-11	0.00059	0.0003706	0.1	No	26	0.0006357	0.0006138	76.92	None	No	0.01	NP (NDs)
Molybdenum, total (mg/L)	B-2	0.002239	0.0009853	0.1	No	27	0.001817	0.001575	7.407	None	sqrt(x)	0.01	Param.
Molybdenum, total (mg/L)	B-6	0.002	0.0003287	0.1	No	27	0.00101	0.0007967	37.04	None	No	0.01	NP (normality)
Molybdenum, total (mg/L)	B-9	0.002	0.0004	0.1	No	27	0.002726	0.006733	55.56	None	No	0.01	NP (NDs)
Selenium, total (mg/L)	B-10	0.005	0.00041	0.05	No	27	0.002299	0.002284	40.74	None	No	0.01	NP (normality)
Selenium, total (mg/L)	B-11	0.002856	0.002114	0.05	No	26	0.002924	0.001149	15.38	Kaplan-Meier	sqrt(x)	0.01	Param.
Selenium, total (mg/L)	B-2	0.01664	0.007692	0.05	No	27	0.01648	0.01814	0	None	ln(x)	0.01	Param.
Selenium, total (mg/L)	B-6	0.002613	0.001659	0.05	No	27	0.002136	0.0009999	3.704	None	No	0.01	Param.
Selenium, total (mg/L)	B-9	0.001	0.0004	0.05	No	27	0.0006867	0.0002982	44.44	None	No	0.01	NP (normality)
Thallium, total (mg/L)	B-10	0.0002	0.00004	0.002	No	27	0.0002241	0.0002334	85.19	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	B-11	0.0002	0.00003	0.002	No	26	0.0002174	0.0001668	88.46	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	B-2	0.0002	0.000066	0.002	No	27	0.0002195	0.0002171	70.37	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	B-6	0.00116	0.0002	0.002	No	27	0.0002707	0.0002821	88.89	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	B-9	0.001044	0.00004	0.002	No	27	0.0002674	0.0003025	85.19	None	No	0.01	NP (NDs)

Non-Parametric Confidence Interval

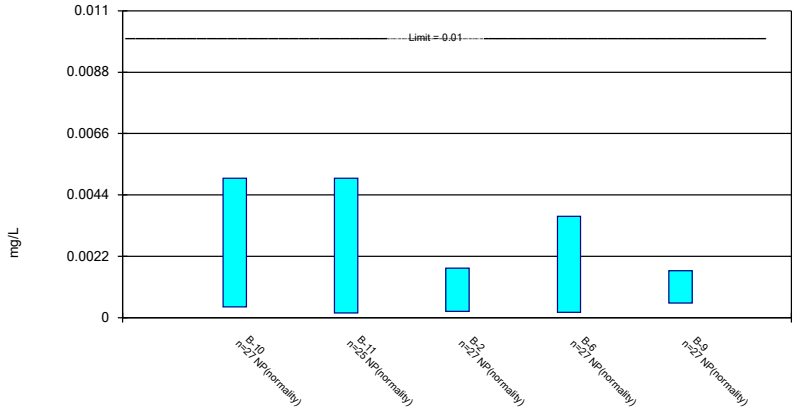
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Antimony, total Analysis Run 12/13/2023 3:58 PM View: Confidence Intervals
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Non-Parametric Confidence Interval

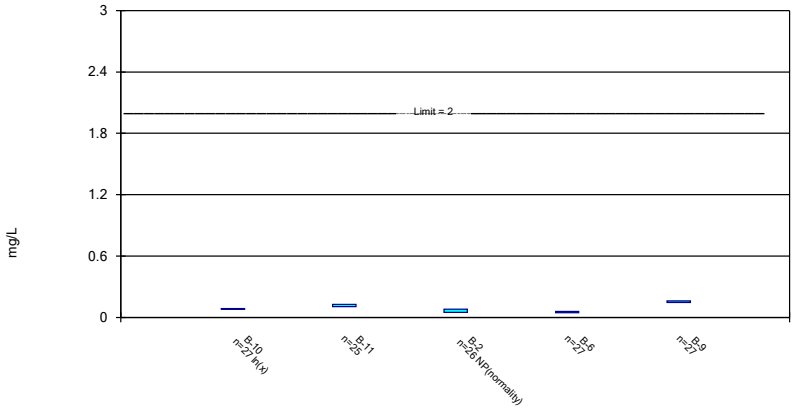
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Arsenic, total Analysis Run 12/13/2023 3:58 PM View: Confidence Intervals
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

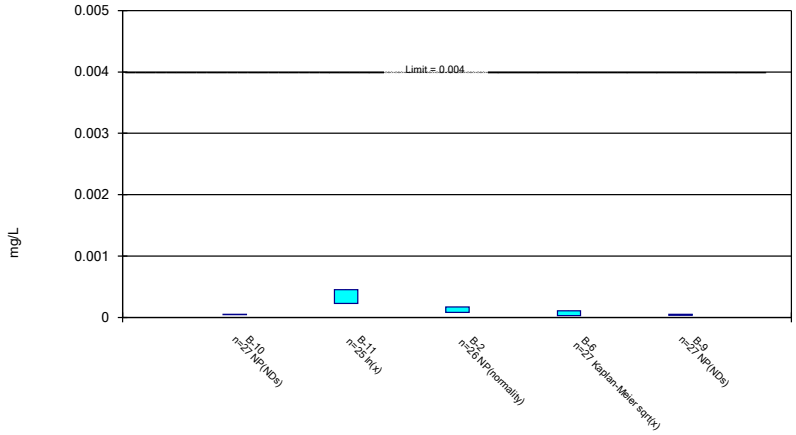
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium, total Analysis Run 12/13/2023 3:58 PM View: Confidence Intervals
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

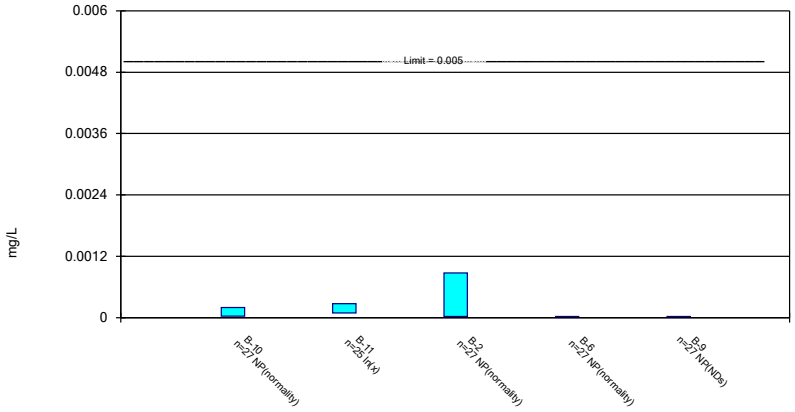
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Beryllium, total Analysis Run 12/13/2023 3:58 PM View: Confidence Intervals
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

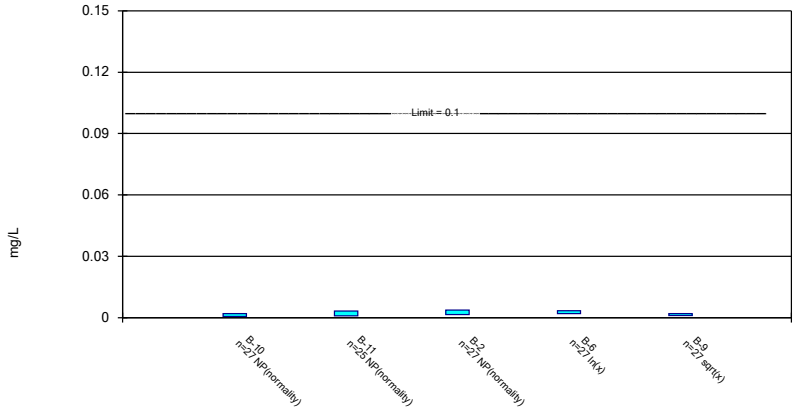
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium, total Analysis Run 12/13/2023 3:58 PM View: Confidence Intervals
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

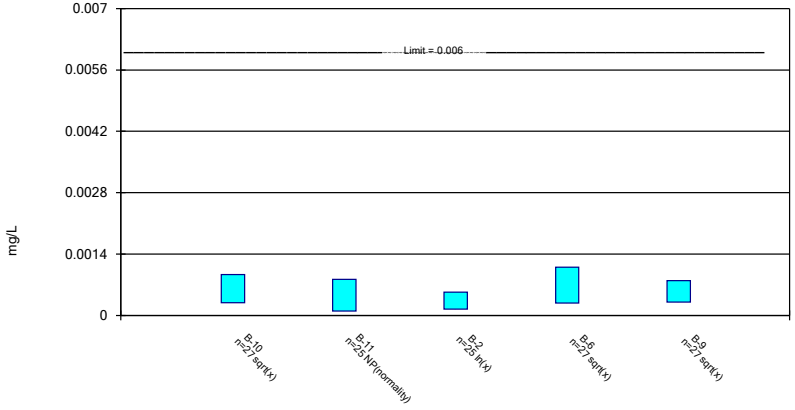
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Chromium, total Analysis Run 12/13/2023 3:58 PM View: Confidence Intervals
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

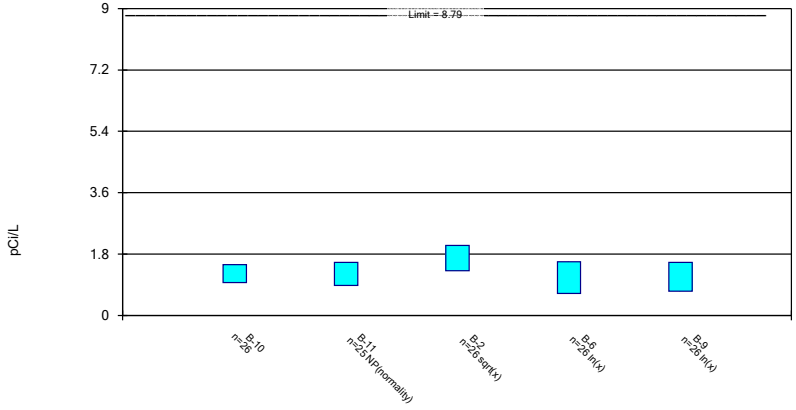
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt, total Analysis Run 12/13/2023 3:58 PM View: Confidence Intervals
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

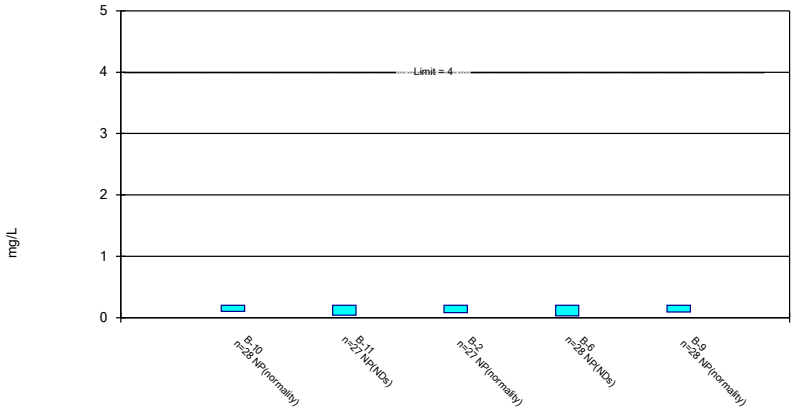
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 12/13/2023 3:58 PM View: Confidence Intervals
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Non-Parametric Confidence Interval

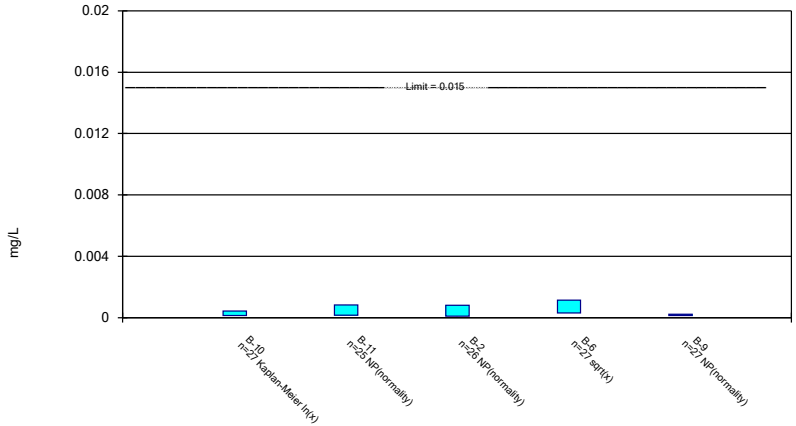
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Fluoride, total Analysis Run 12/13/2023 3:58 PM View: Confidence Intervals
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

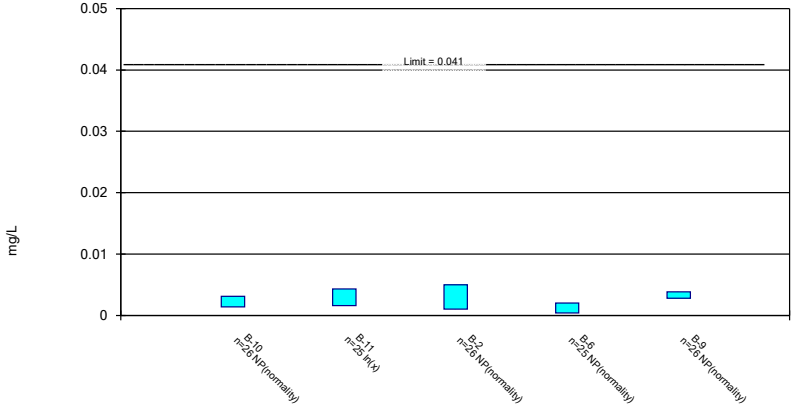
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lead, total Analysis Run 12/13/2023 3:58 PM View: Confidence Intervals
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

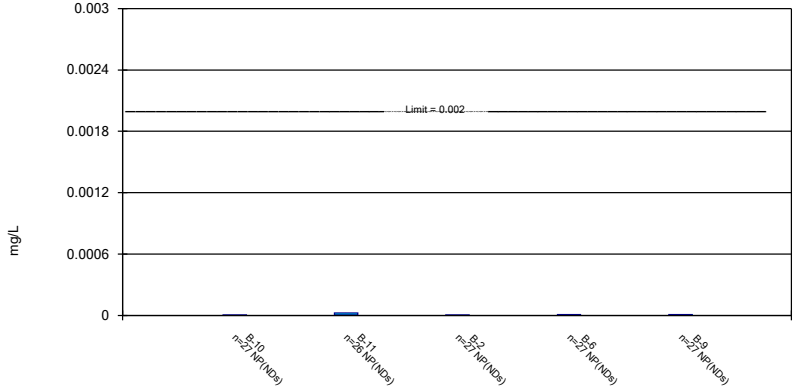
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium, total Analysis Run 12/13/2023 3:58 PM View: Confidence Intervals
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Non-Parametric Confidence Interval

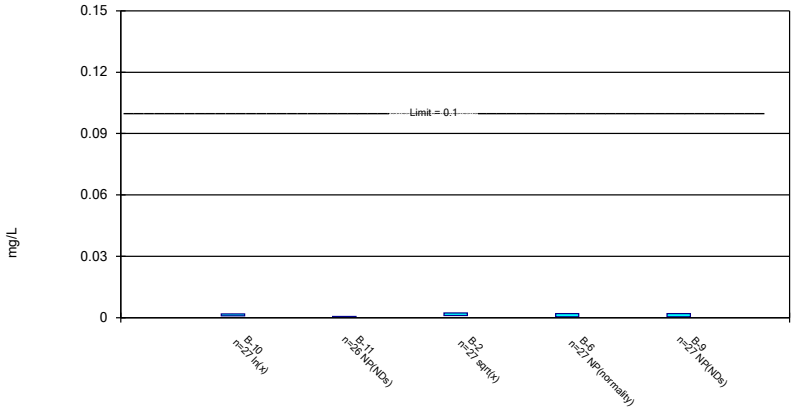
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Mercury, total Analysis Run 12/13/2023 3:58 PM View: Confidence Intervals
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

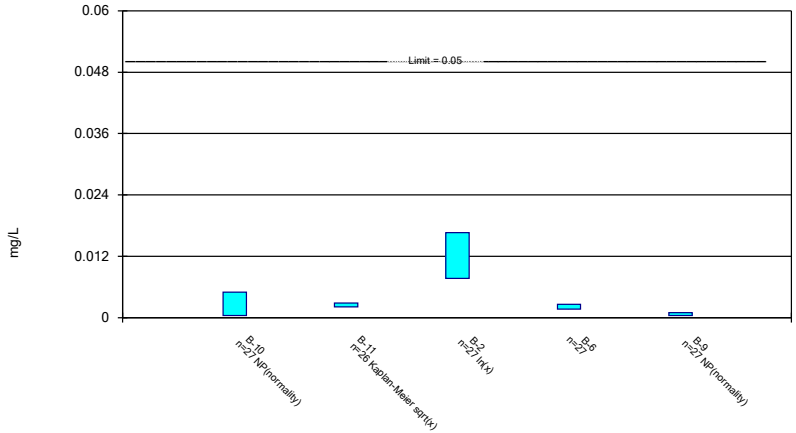
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum, total Analysis Run 12/13/2023 3:58 PM View: Confidence Intervals
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

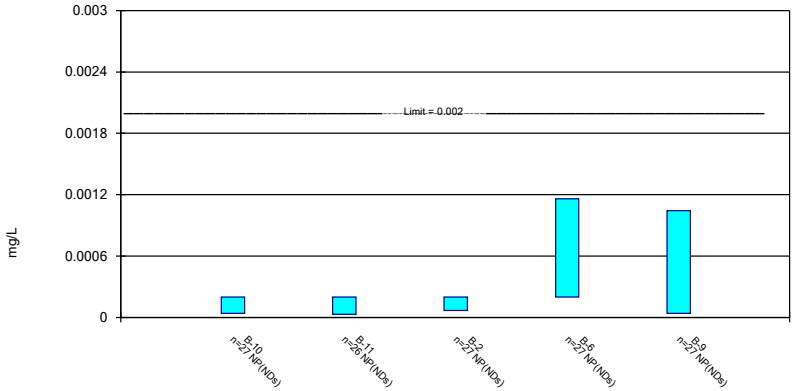
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium, total Analysis Run 12/13/2023 3:58 PM View: Confidence Intervals
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium, total Analysis Run 12/13/2023 3:58 PM View: Confidence Intervals
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Geosyntec consultants

engineers | scientists | innovators

STATISTICAL ANALYSIS SUMMARY

Flint Creek Plant Landfill

Gentry, Arkansas

Prepared for

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August 20, 2024

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Table 3: Appendix III Data Summary

LIST OF ATTACHMENTS

Attachment A: Certification by Qualified Professional Engineer

Attachment B: Statistical Analysis Output

ACRONYMS AND ABBREVIATIONS

CCR	coal combustion residuals
CFR	Code of Federal Regulations
GWPS	groundwater protection standard
mg/L	milligrams per liter
QA/QC	quality assurance and quality control
SSI	statistically significant increase
SSL	statistically significant level
UPL	upper prediction limit

1. INTRODUCTION

In accordance with United States Environmental Protection Agency regulations regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (Code of Federal Regulations [CFR] Title 40, Section 257, Subpart D), groundwater monitoring has been conducted at the Landfill, an existing CCR unit at the Flint Creek Power Plant in Gentry, Arkansas. Recent groundwater monitoring results were used to identify concentrations of Appendix IV constituents that are above site-specific groundwater protection standards (GWPSs).

Based on detection monitoring conducted in 2017 and 2018, statistically significant increases (SSIs) over background were concluded for boron at the Landfill (Geosyntec 2018). An alternative source was not identified following the detection monitoring event, so the Landfill has been in assessment monitoring since 2018. An annual sampling event for Appendix IV parameters required by 40 CFR 257.95(b) was completed in March 2024, and a semiannual sampling event for Appendix III parameters and Appendix IV parameters, as required by 40 CFR 257.95(d)(1), was completed in April 2024. The results of the March and April 2024 assessment sampling events are documented in this report.

Before the statistical analyses were conducted, the groundwater data underwent several validation tests, including those for completeness, sample tracking accuracy, transcription errors, and consistent use of measurement units. No data quality issues that would impact data usability were identified.

The monitoring data were submitted to Groundwater Stats Consulting, LLC for statistical analysis. Confidence intervals were calculated from the Appendix IV parameter data at the compliance wells to assess whether any were present at statistically significant levels (SSLs) above the corresponding GWPS. No SSLs were identified; however, concentrations of Appendix III parameters remained above background. Therefore, the unit will remain in assessment monitoring. Certification of the selected statistical methods by a qualified professional engineer is documented in Attachment A.

2. LANDFILL EVALUATION

2.1 Data Validation and QA/QC

Two sets of samples were collected for analysis from each upgradient and downgradient well to meet the requirements of 40 CFR 257.95(b) (March 2024) and 257.95(d)(1) (April 2024) as part of the assessment monitoring program. Samples from March 2024 were analyzed for all Appendix IV parameters, whereas samples from the April 2024 sample event were analyzed for all Appendix IV and Appendix III parameters. A summary of data collected during these assessment monitoring events is presented in Table 1.

Chemical analysis was completed by a National Environmental Laboratory Accreditation Program–certified analytical laboratory. The laboratory completed analysis of quality assurance and quality control (QA/QC) samples such as laboratory reagent blanks, continuing calibration verification samples, and laboratory fortified blanks.

The analytical data were imported into a Microsoft Access database, where checks were completed to assess the accuracy of sample location identification and analyte identification. Where necessary, unit conversions were applied to standardize reported units across all sampling events. Exported data files were created for use with the Sanitas v.10.0.17a statistics software. The export file was checked against the analytical data for transcription errors and completeness. No QA/QC issues that would impact data usability were noted.

2.2 Statistical Analysis

Statistical analyses for the Landfill were conducted in accordance with the October 2020 *Statistical Analysis Plan* (Geosyntec 2020). Time series plots and results for all completed statistical tests are provided in Attachment B.

The data obtained in March and April 2024 were screened for potential outliers. No outliers were identified in the data (Attachment B).

2.2.1 Evaluation of Potential Appendix IV SSLs

A confidence interval was constructed for each Appendix IV parameter at each compliance well. Confidence limits were generally calculated parametrically ($\alpha = 0.01$); however, nonparametric confidence limits were calculated in some cases (e.g., when the data were not normally distributed or when the nondetect frequency was too high). An SSL was concluded if the lower confidence limit was above the GWPS (i.e., if the entire confidence interval was above the GWPS). The calculated confidence limits (Attachment B) were compared to the GWPSs provided in Table 2. The GWPSs were established during a previous statistical analysis as either (a) the background concentration or (b) the maximum contaminant level and risk-based levels specified in 40 CFR 257.95(h)(2), whichever was greater (Geosyntec 2024).

No SSLs were identified at the Landfill.

2.2.2 Evaluation of Potential Appendix III SSIs

The Appendix III results were analyzed to assess whether concentrations of Appendix III parameters at the compliance wells were above background concentrations. Data collected during

the April 2024 assessment monitoring event from each compliance well were compared to previously established prediction limits to assess whether the results were statistically above background limits. The results from these events and the prediction limits are summarized in Table 3. The following exceedances of the upper prediction limits (UPLs) were noted:

- Boron concentrations were above the interwell UPL of 0.107 milligrams per liter (mg/L) at B-2 (0.205 mg/L) and at B-11 (0.334 mg/L).
- Sulfate concentrations were above the intrawell UPL of 44.5 mg/L at B-9 (46.8 mg/L) and the intrawell UPL of 35.8 mg/L at B-10 (41.2 mg/L).

While the prediction limits were calculated for a one-of-two retesting procedure, SSIs were conservatively assumed if the April 2024 sample was above the UPL or, in the case of pH, below the lower prediction limit. Based on this evaluation, concentrations of Appendix III constituents appear to be above background concentrations, and the unit will remain in assessment monitoring.

2.3 Conclusions

Annual and semiannual assessment monitoring events were conducted in accordance with the CCR Rule. The laboratory and field data were reviewed prior to statistical analysis, and no QA/QC issues identified that prevented data usage. A review of outliers identified no potential outliers in the March and April 2024 data. A confidence interval was constructed at each compliance well for each Appendix IV parameter; SSLs were concluded if the entire confidence interval was above the GWPSs. No SSLs were identified. Appendix III parameters were compared to prediction limits; concentrations of boron and sulfate were identified above the prediction limits.

Based on this evaluation, the Landfill CCR unit will remain in assessment monitoring.

3. REFERENCES

Geosyntec. 2018. *Statistical Analysis Summary – Landfill, Flint Creek Plant, Gentry, Arkansas*. Geosyntec Consultants, Inc. January.

Geosyntec. 2020. *Statistical Analysis Plan – Flint Creek Plant*. Geosyntec Consultants, Inc. October.

Geosyntec. 2024. *Statistical Analysis Summary – Landfill, Flint Creek Plant, Gentry, Arkansas*. Geosyntec Consultants, Inc. January.

TABLES

Table 1. Groundwater Data Summary
Statistical Analysis Summary
Flint Creek Plant - Landfill

Parameter	Unit	B-1B				B-2		B-4		B-5		B-6		B-7A	
		3/4/2024	3/5/2024	4/15/2024	4/16/2024	3/4/2024	4/15/2024	3/5/2024	4/15/2024	3/5/2024	4/16/2024	3/4/2024	4/15/2024	3/5/2024	4/15/2024
Antimony	µg/L	--	0.1 U1	--	0.013 J1	0.048 J1	0.029 J1	0.1 U1	0.1 U1	0.008 J1	0.009 J1	0.020 J1	0.037 J1	0.011 J1	0.1 U1
Arsenic	µg/L	--	0.13	--	0.09 J1	0.47	0.35	0.07 J1	0.06 J1	0.34	0.42	0.29	0.60	8.83	5.93
Barium	µg/L	--	105	--	106	57.8	51.1	48.5	46.7	17.8	21.1	45.4	45.3	64.7	50.2
Beryllium	µg/L	--	0.016 J1	--	0.021 J1	0.133	0.099	0.128	0.138	0.457	0.427	0.032 J1	0.088	0.011 J1	0.012 J1
Boron	mg/L	--	--	--	0.011 J1	--	0.406	--	0.042 J1	--	0.010 J1	--	0.027 J1	--	0.011 J1
Cadmium	µg/L	--	0.02 U1	--	0.006 J1	0.037	0.029	0.032	0.031	0.146	0.145	0.014 J1	0.021	0.014 J1	0.014 J1
Calcium	mg/L	--	--	--	81.7	--	25.3	--	24.4	--	13.5	--	42.5	--	90.9
Chloride	mg/L	--	--	--	2.17	--	4.22	--	4.52	--	9.08	--	6.45	--	3.11
Chromium	µg/L	--	0.35	--	0.35	2.00	1.49	0.98	0.93	2.58	2.40	2.36	3.23	0.26 J1	0.40
Cobalt	µg/L	--	0.299	--	0.016 J1	0.420	0.224	0.043	0.037	0.207	0.209	0.217	0.606	0.115	0.431
Combined Radium	pCi/L	--	5.34	--	6.25	3.03	0.68	1.65	1.17	1.36	1.12	1.36	0.95	3.36	4.01
Fluoride	mg/L	--	0.35	--	0.24	0.08	0.08	0.03 J1	0.03 J1	0.06	0.06	0.03 J1	0.03 J1	0.17	0.18
Lead	µg/L	--	0.2 U1	--	0.06 J1	0.51	0.23	0.2 U1	0.2 U1	0.17 J1	0.15 J1	0.32	0.86	0.31	0.13 J1
Lithium	mg/L	--	0.0255	--	0.0244	0.00142	0.00102	0.00091	0.00085	0.00234	0.00217	0.00059	0.00076	0.0180	0.0156
Mercury	µg/L	--	0.005 U1	--	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005 U1	0.005	0.006	0.005 U1	0.004 J1	0.003 J1	0.005 U1
Molybdenum	µg/L	--	0.5	--	0.2 J1	0.7	0.7	0.5 U1	0.5 U1	0.5 U1	0.5 U1	0.2 J1	0.2 J1	0.1 J1	0.6
Selenium	µg/L	--	0.5 U1	--	0.5 U1	6.34	5.87	0.27 J1	0.30 J1	34.7	31.4	1.77	2.19	0.5 U1	0.5 U1
Sulfate	mg/L	--	--	--	10.7	--	70.7	--	5.8	--	241	--	18.9	--	32.1
Thallium	µg/L	--	0.2 U1	--	0.2 U1	0.06 J1	0.04 J1	0.02 J1	0.2 U1	0.04 J1	0.03 J1	0.2 U1	0.02 J1	0.04 J1	0.2 U1
Total Dissolved Solids	mg/L	--	--	--	290	--	190	--	100	--	390	--	210	--	310
pH	SU	7.1	--	7.2	--	5.6	5.4	6.7	6.3	5.0	5.0	6.4	6.0	7.2	7.4

Notes:
--: not sampled
J1: estimated value. Parameter was detected in concentrations below the reporting limit.
mg/L: milligrams per liter
pCi/L: picocuries per liter
SU: standard unit
U1: non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
µg/L: micrograms per liter

Table 1. Groundwater Data Summary
Statistical Analysis Summary
Flint Creek Plant - Landfill

Parameter	Unit	B-9		B-10				B-11		B-12		B-13	
		3/5/2024	4/16/2024	3/4/2024	3/5/2024	4/15/2024	4/16/2024	3/5/2024	4/16/2024	3/4/2024	4/15/2024	3/5/2024	4/16/2024
Antimony	µg/L	0.025 J1	0.031 J1	--	0.196	--	0.344	0.1 U1	0.028 J1	0.049 J1	0.103	0.010 J1	0.016 J1
Arsenic	µg/L	0.39	0.44	--	0.33	--	0.49	0.14	0.54	0.11	0.12	0.06 J1	0.07 J1
Barium	µg/L	192	171	--	87.6	--	75.7	123	118	55.1	54.1	49.6	45.5
Beryllium	µg/L	0.05 U1	0.05 U1	--	0.05 U1	--	0.018 J1	0.301	0.338	0.05 U1	0.008 J1	0.052	0.069
Boron	mg/L	--	0.014 J1	--	--	--	0.008 J1	--	0.334	--	0.013 J1	--	0.012 J1
Cadmium	µg/L	0.005 J1	0.008 J1	--	0.031	--	0.030	0.100	0.151	0.021	0.022	0.033	0.032
Calcium	mg/L	--	84.2	--	--	--	73.9	--	14.6	--	55.8	--	12.8
Chloride	mg/L	--	6.37	--	--	--	10.4	--	16.3	--	8.18	--	2.02
Chromium	µg/L	0.61	0.68	--	0.79	--	1.18	1.27	1.51	0.98	0.96	0.61	0.67
Cobalt	µg/L	0.045	0.183	--	0.132	--	0.500	0.107	0.306	3.05	3.14	0.055	0.092
Combined Radium	pCi/L	1.49	1.09	--	1.69	--	0.97	1.27	1.43	1.44	0.93	1.4	1.35
Fluoride	mg/L	0.07	0.06	--	0.09	--	0.12	0.03 J1	0.03 J1	0.04 J1	0.05 J1	0.03 J1	0.03 J1
Lead	µg/L	0.2 U1	0.09 J1	--	0.16 J1	--	0.25	0.2 U1	0.59	0.05 J1	0.07 J1	0.09 J1	0.08 J1
Lithium	mg/L	0.00326	0.00283	--	0.00158	--	0.00159	0.00232	0.00217	0.00104	0.00115	0.00046	0.00058
Mercury	µg/L	0.005 U1	0.005 U1	--	0.005 U1	--	0.005 U1	0.005 U1	0.004 J1	0.005 U1	0.005 U1	0.005 U1	0.005 U1
Molybdenum	µg/L	0.3 J1	0.3 J1	--	0.7	--	1.5	0.5 U1	0.5 U1	0.3 J1	0.4 J1	0.5 U1	0.5 U1
Selenium	µg/L	0.55	0.40 J1	--	0.44 J1	--	0.50	2.45	2.90	0.20 J1	0.16 J1	0.41 J1	0.33 J1
Sulfate	mg/L	--	46.8	--	--	--	41.2	--	40.2	--	10.4	--	15.4
Thallium	µg/L	0.02 J1	0.2 U1	--	0.2 U1	--	0.02 J1	0.03 J1	0.03 J1	0.02 J1	0.02 J1	0.2 U1	0.2 U1
Total Dissolved Solids	mg/L	--	300	--	--	--	300	--	150	--	230	--	90
pH	SU	7.4	6.9	6.5	--	6.7	--	5.4	5.6	6.2	6.4	5.6	5.7

Notes:
--: not sampled
J1: estimated value. Parameter was detected in concentrations below the reporting limit.
mg/L: milligrams per liter
pCi/L: picocuries per liter
SU: standard unit
U1: non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
µg/L: micrograms per liter

Table 2. Appendix IV Groundwater Protection Standards
Statistical Analysis Summary
Flint Creek Plant – Landfill

Constituent Name	MCL	CCR Rule-Specified	Calculated UTL	GWPS
Antimony, Total (mg/L)	0.00600		0.00452	0.00600
Arsenic, Total (mg/L)	0.0100		0.00983	0.0100
Barium, Total (mg/L)	2.00		0.131	2.00
Beryllium, Total (mg/L)	0.00400		0.00100	0.00400
Cadmium, Total (mg/L)	0.00500		0.00100	0.00500
Chromium, Total (mg/L)	0.100		0.00600	0.100
Cobalt, Total (mg/L)	n/a	0.00600	0.00518	0.00600
Combined Radium, Total (pCi/L)	5.00		8.79	8.79
Fluoride, Total (mg/L)	4.00		0.596	4.00
Lead, Total (mg/L)	n/a	0.0150	0.00389	0.0150
Lithium, Total (mg/L)	n/a	0.0400	0.0410	0.0410
Mercury, Total (mg/L)	0.00200		0.0000960	0.00200
Molybdenum, Total (mg/L)	n/a	0.100	0.00466	0.100
Selenium, Total (mg/L)	0.0500		0.0392	0.0500
Thallium, Total (mg/L)	0.00200		0.00199	0.00200

Notes:
1. Calculated UTL (upper tolerance limit) represents site-specific background values.
2. Gray cells indicate the GWPS is based upon calculated UTL, which is higher than the MCL or CCR Rule-Specified value.
CCR: coal combustion residuals
GWPS: groundwater protection standard
MCL: maximum contaminant level
mg/L: milligrams per liter
n/a: not applicable
pCi/L: picocuries per liter

Table 3. Appendix III Data Summary
Statistical Analysis Summary
Flint Creek Plant - Landfill

Geosyntec Consultants, Inc.

Analyte	Unit	Description	B-2	B-6	B-9	B-10*	B-11
			4/15/2024	4/15/2024	4/16/2024	4/16/2024	4/16/2024
Boron	mg/L	Interwell Background Value (UPL)	0.107				
		Analytical Result	**0.406**	0.027	0.014	0.008	**0.334**
Calcium	mg/L	Intrawell Background Value (UPL)	50.4	58.5	130	116	19.8
		Analytical Result	25.3	42.5	84.2	73.9	14.6
Chloride	mg/L	Intrawell Background Value (UPL)	8.88	8.70	7.78	12.4	9.82
		Analytical Result	4.22	6.45	6.37	10.4	**16.3**
Fluoride	mg/L	Intrawell Background Value (UPL)	0.200	0.207	0.356	0.330	0.200
		Analytical Result	0.08	0.03	0.06	0.12	0.03
pH	SU	Intrawell Background Value (UPL)	6.9	7.3	8.1	8.3	6.9
		Intrawell Background Value (LPL)	5.1	5.9	6.3	6.1	5.0
		Analytical Result	5.4	6.0	6.9	6.7	5.6
Sulfate	mg/L	Intrawell Background Value (UPL)	195	42.9	44.5	35.8	62.6
		Analytical Result	70.7	18.9	**46.8**	**41.2**	40.2
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	522	271	315	301	190
		Analytical Result	190	210	300	300	150

Notes:
1. Bold values exceed the background value.
2. Background values are shaded gray.
*: pH measured on 4/15/2024. Well purged dry and sampled the following day.
LPL: lower prediction limit
mg/L: milligrams per liter
SU: standard units
UPL: upper prediction limit

ATTACHMENT A
Certification by Qualified Professional Engineer

Certification by Qualified Professional Engineer

I certify that selected and above described statistical method is appropriate for evaluating the groundwater monitoring data for the Flint Creek Landfill CCR management area and that the requirements of 40 CFR 257.93(f) have been met.

David Anthony Miller

Printed Name of Licensed Professional Engineer

Signature

15296	Arkansas	08.23.2024
License Number	Licensing State	Date

ATTACHMENT B
Statistical Analysis Output

GROUNDWATER STATS CONSULTING

August 2, 2024

Geosyntec Consultants
Attn: Ms. Allison Kreinberg
500 W. Wilson Bridge Road, Ste. #250
Worthington, OH 43085

Re: Flint Creek Landfill
Assessment Monitoring Summary – March & April 2024

Dear Ms. Kreinberg,

Groundwater Stats Consulting (GSC), formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the Assessment Monitoring statistical analysis of groundwater data through April 2024 at American Electric Power Company's Flint Creek Landfill. The analysis complies with the federal rule for the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities (CCR Rule, 2015) as well as with the United States Environmental Protection Agency (USEPA) Unified Guidance (2009).

Sampling began at the site for the CCR program in 2016. The monitoring well network, as provided by Geosyntec Consultants, consists of the following:

- **Upgradient wells:** B-1B, B-4, B-5, B-7A, B-12, and B-13
- **Downgradient wells:** B-2, B-6, B-9, B-10, and B-11

Data were sent electronically, and the statistical analysis was conducted according to the Statistical Analysis Plan and original screening evaluation prepared by GSC and approved by Dr. Kirk Cameron, PhD Statistician with MacStat Consulting, primary author of the USEPA Unified Guidance, and Senior Advisor to GSC. The analysis was reviewed by Andrew Collins, Project Manager of Groundwater Stats Consulting.

The CCR program consists of the following constituents:

- **Appendix IV** (Assessment Monitoring) **–** antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium 226 + 228, fluoride, lead, lithium, mercury, molybdenum, selenium, and thallium

Time series and box plots for Appendix IV parameters are provided for all wells and constituents; and are used to evaluate concentrations over the entire record (Figures A and B, respectively). Values in background which have previously been flagged as outliers may be seen in a lighter font and disconnected symbol on the graphs. Additionally, a summary of flagged values follows this letter (Figure C).

Summary of Statistical Methods – Appendix IV Parameters

Parametric tolerance limits are utilized when the screened historical data follow a normal or transformed-normal distribution. When data cannot be normalized or the majority of data are non-detects, a nonparametric test is utilized. The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (USEPA, 2009), data are analyzed using either parametric or non-parametric tolerance limits as appropriate.

- No statistical analyses are required on wells and analytes containing 100% non-detects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% non-detects, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for non-detects is the most recent practical quantification limit (PQL) as reported by the laboratory.
- When data contain between 15-50% non-detects, the Kaplan-Meier non-detect adjustment is applied to the background data. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric tolerance limits are used on data containing greater than 50% non-detects.

Summary of Previous Background Updates

Background (upgradient) data sets are periodically re-evaluated for Appendix IV constituents for the purpose of updating statistical limits. This step was most recently performed in January 2024 through visual screening and Tukey's outlier test for potential

outliers as well as extreme trending patterns that would lead to artificially elevated statistical limits.

While downgradient well data were also screened for outliers, high measurements are "cautiously" flagged only when the measurements are distinctly different from remaining measurements within a given well. When preceding and subsequent measurements to a single high reported concentration are significantly lower and similar, the assumption is that the increase in a single measurement is spurious and not representative of the true population of groundwater quality. This is intended to be a regulatory conservative approach in that it will reduce the variance and thus reduce the width of parametric confidence intervals; although it will also reduce the overall mean and thus lower the entire interval. The intent is to better represent the true mean of the population in downgradient wells. Complete findings of each background update were submitted at the time of the screenings.

During previous screenings, several metals were identified to have higher reported concentrations in multiple wells during the September and November 2016 events which appear to be either a laboratory or sampling issue. Therefore, these values were flagged as outliers since they do not represent the population within these wells. Additionally, several reporting limits for the metals are significantly lower beginning in March 2019 than those reported historically. Non-detect values were not replaced with the most recent reporting limit in order to create conservative statistical limits from a regulatory perspective. For lithium, the reporting limit during the June 2019 event increased from a historical limit of 0.001 mg/L to 0.1 mg/L; therefore, the elevated reporting limit was flagged in all wells as it is higher than any reported concentrations.

Background Update – Conducted in January 2024

Outlier Analysis

Prior to evaluating Appendix IV parameters, upgradient well data were screened through both visual screening and Tukey's outlier test for potential outliers and extreme trending patterns that would lead to artificially elevated statistical limits. All flagged values may be seen on the Outlier Summary following this letter (Figure C).

Tukey's outlier test identified outliers for barium, chromium, cobalt, combined radium 226 + 228, fluoride, lithium, and selenium when pooled upgradient well data were evaluated; however, many of these values were of similar concentration to one another and thus, were not flagged as outliers. The highest detected value for chromium in well B-12, the two highest detected values for cobalt in well B-12, and the high reporting limit for lithium

at several wells during the June 2019 event remain flagged in the database as outliers as they did not appear to represent the population at these wells and do not represent current conditions.

Downgradient well data through September 2023 were screened through visual screening using time series graphs. Since the downgradient well data are used to construct confidence intervals, a regulatory conservative approach is taken in that values that are marginally high relative to the rest of the data are retained unless there is particular justification for excluding them. No additional outliers were flagged, and no previously flagged outliers were unflagged.

Interwell Upper Tolerance Limits

Upper tolerance limits were used to calculate background limits from pooled upgradient well data through September 2023 for Appendix IV parameters (Figure D). These limits are updated on an annual basis and will be updated again during the Fall 2024 sample event analysis. Parametric tolerance limits are calculated, with a target of 95% confidence and 95% coverage, when data follow a normal or transformed-normal distribution. When data contained greater than 50% non-detects or did not follow a normal or transformed-normal distribution, non-parametric tolerance limits were constructed using the highest background measurement. The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples.

Groundwater Protection Standards

The upper tolerance limits were compared to the Maximum Contaminant Levels (MCLs) and background limits in the Groundwater Protection Standard (GWPS) table following this letter to determine the highest limit for use as the GWPS in the Confidence Interval comparisons (Figure E).

Evaluation of Appendix IV Parameters – April 2024

Time series plots were used to visually identify potential outliers through the April 2024 sample events. When suspected outliers are identified, Tukey's outlier test is used to formally test whether measurements are statistically significant. As mentioned above, high outliers are 'cautiously' flagged in the downgradient wells when measurements are clearly much different from remaining data within a given well. This is intended to be a regulatory conservative approach in that it will reduce the variance and thus reduce the width of parametric confidence intervals; although it will also reduce the mean and thus lower the

entire interval. The intent is to better represent the actual downgradient mean. No additional suspected outliers were identified.

Confidence intervals were then constructed with data through April 2024 on downgradient wells for each of the Appendix IV parameters and compared to the GWPS (i.e., the highest limit of the MCL or background limit as discussed above). When data followed a normal or transformed-normal distribution, parametric confidence intervals were used for Appendix IV parameters. Nonparametric confidence intervals, which use the largest and smallest order statistics depending on the sample size as interval limits, were constructed when data did not follow a normal or transformed-normal distribution or when there were greater than 50% non-detects. The lower confidence limit, which is constructed with 99% confidence for parametric confidence intervals, is compared to the GWPS prepared as described above. The confidence level associated with nonparametric confidence intervals is dependent upon the number samples available.

Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its respective standard. No exceedances were noted for any of the well/constituent pairs. A summary of the confidence interval results follows this letter (Figure F).

Trend Test Evaluation – Appendix IV

When confidence interval exceedances are identified in downgradient wells, data are further evaluated using the Sen's Slope/Mann Kendall trend test to determine whether concentrations are statistically increasing, decreasing, or stable at the 95% confidence level. Utilizing the 95% confidence level for trend tests readily identifies significant trends and is more sensitive than the 99% confidence level without drastically increasing the false negative rate. Upgradient wells are included in the trend analyses for all parameters found to exceed their confidence interval in downgradient wells. When similar patterns exist upgradient of the site, it is an indication of variability in groundwater which may be unrelated to practices at the site. Since no exceedances were identified, no trend tests were required.

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for the Flint Creek Landfill. If you have any questions or comments, please feel free to contact us.

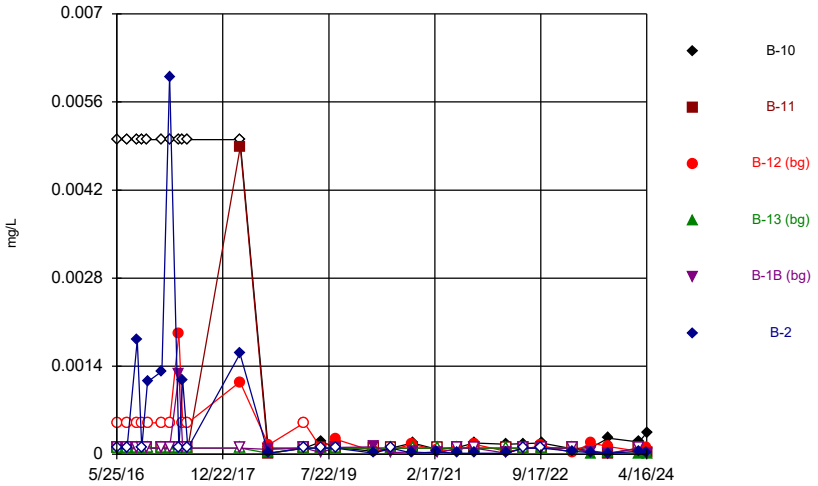
For Groundwater Stats Consulting,

Abdul Diane
Groundwater Analyst

Andrew T. Collins
Project Manager

Sanitas™ v.10.0.17a . UG
Hollow symbols indicate censored values.

Time Series



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Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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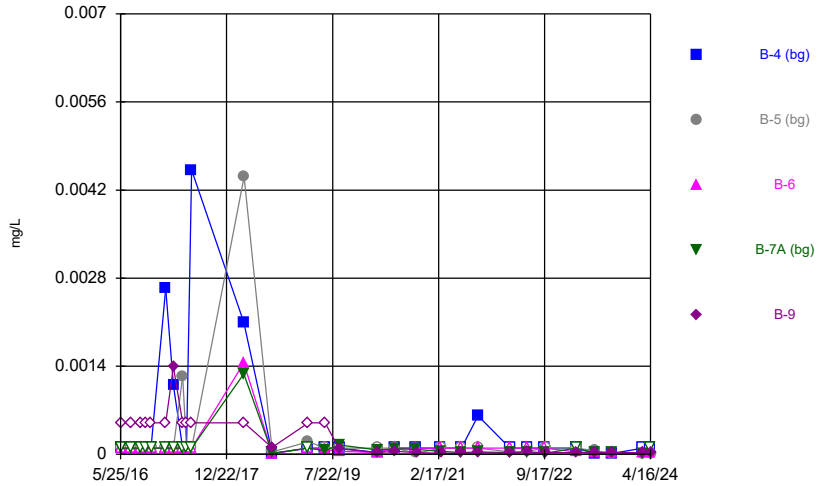

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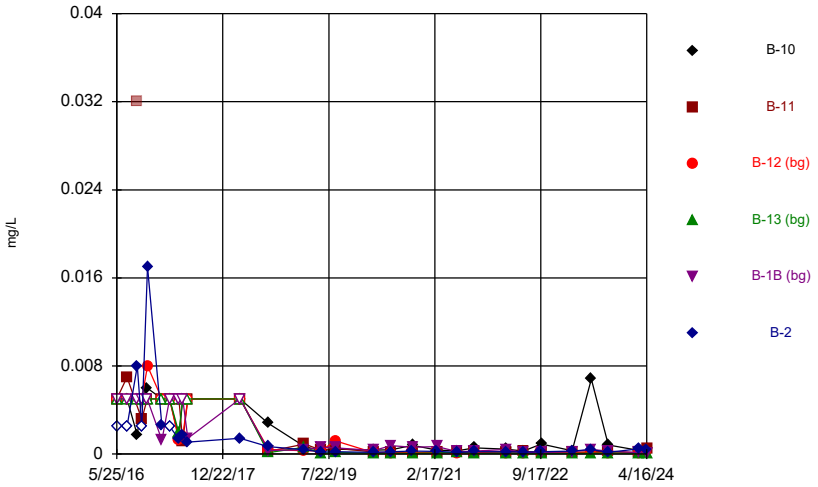

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Hollow symbols indicate censored values.

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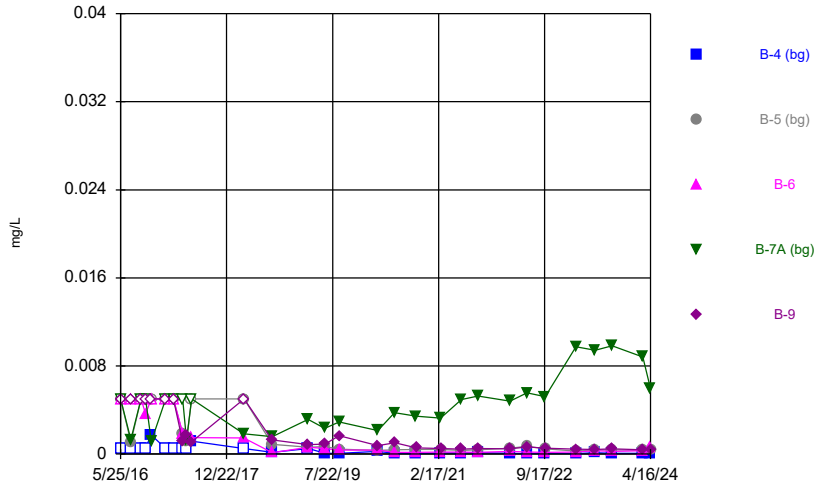

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Sanitas™ v.10.0.17a . UG

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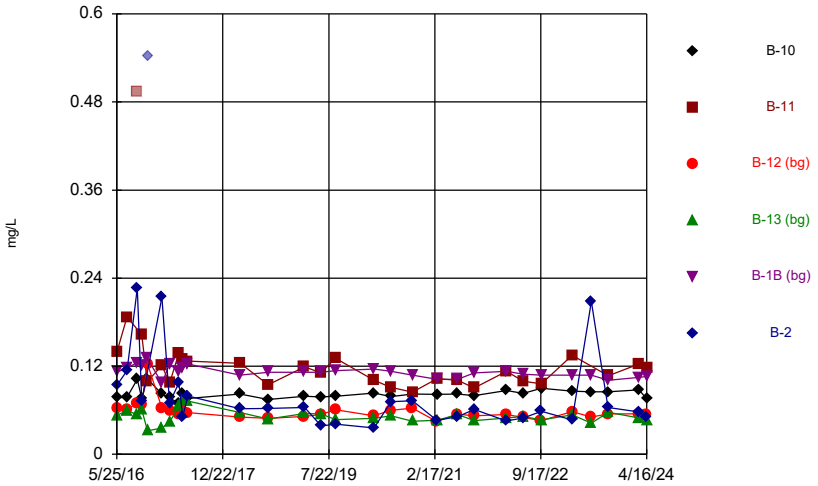

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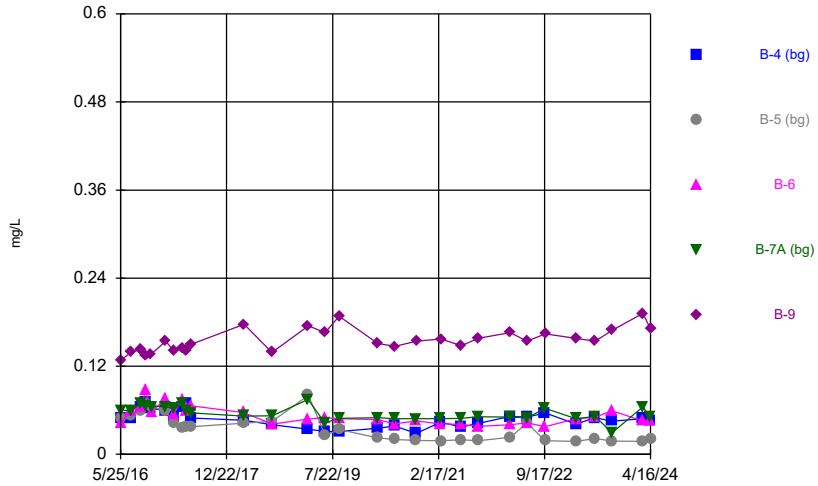

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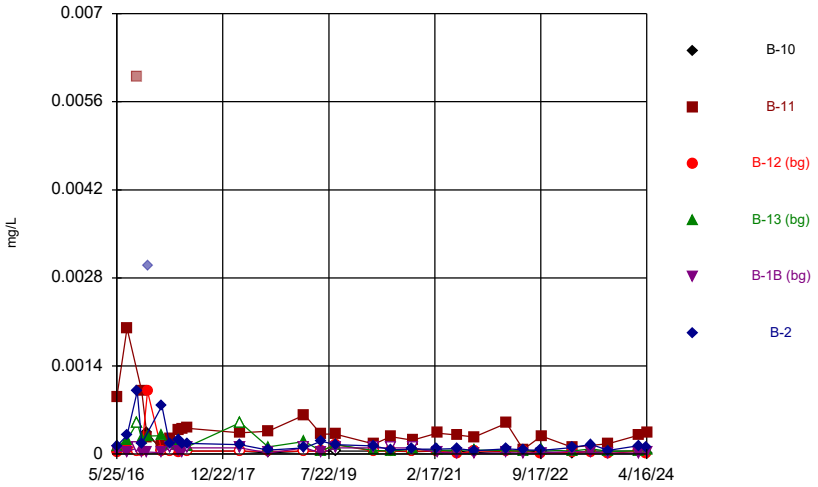

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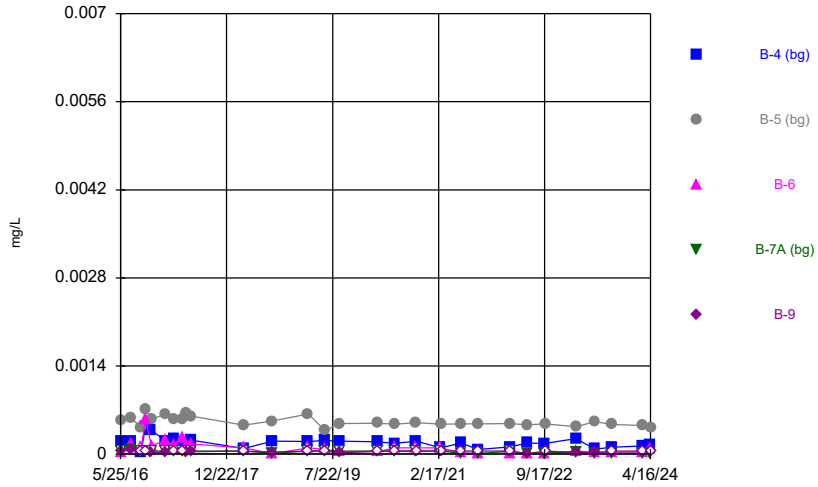

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Hollow symbols indicate censored values.

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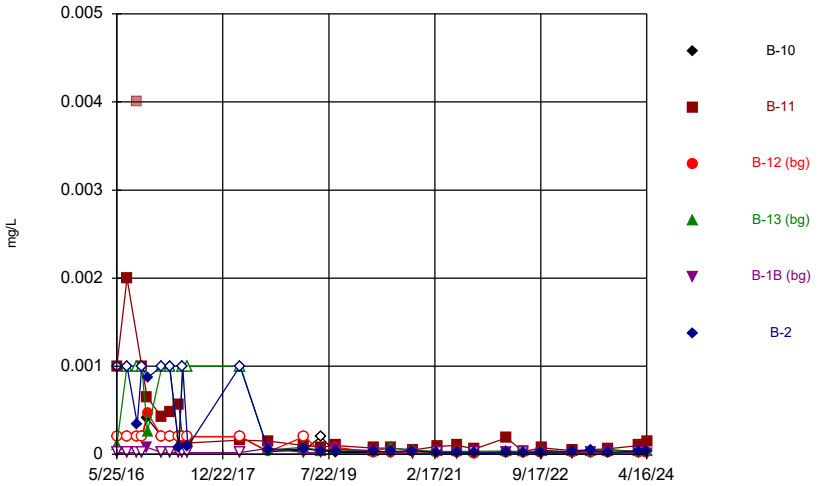

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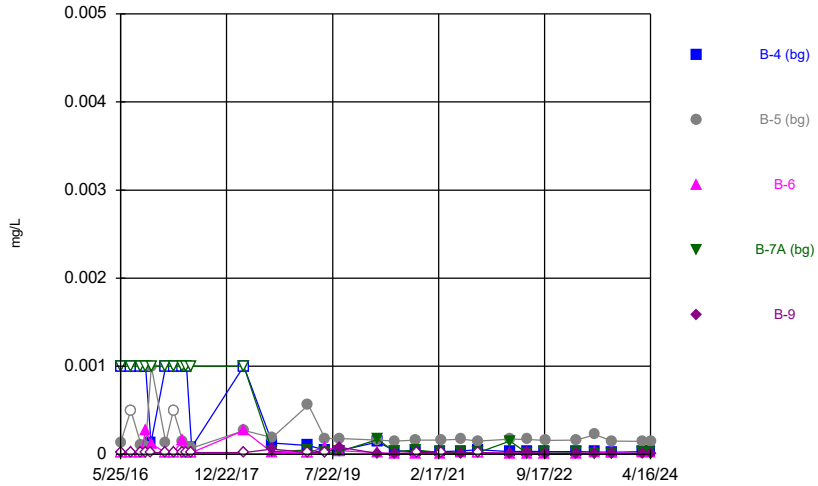

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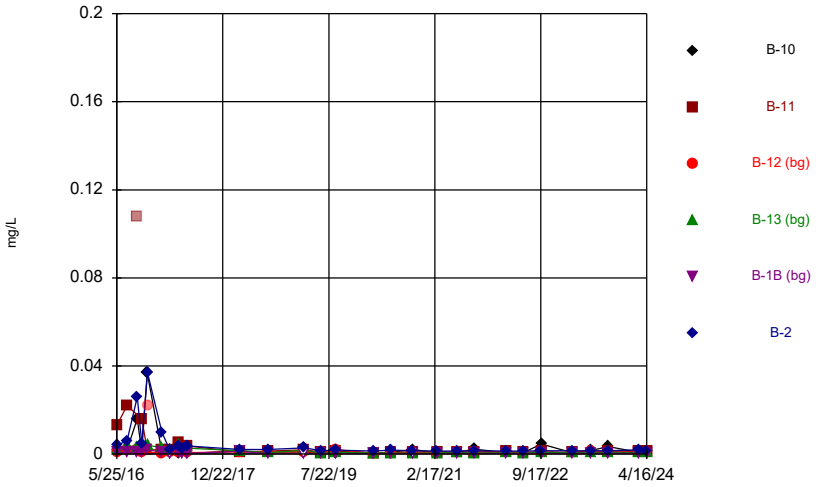

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Hollow symbols indicate censored values.

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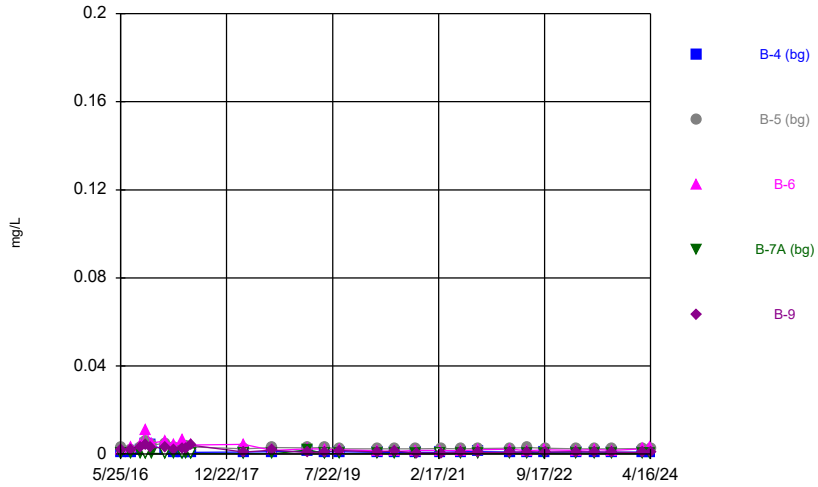

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Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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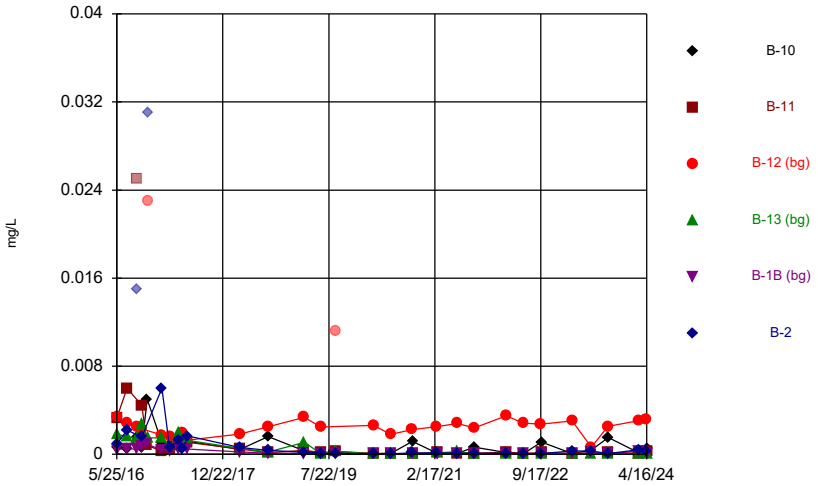

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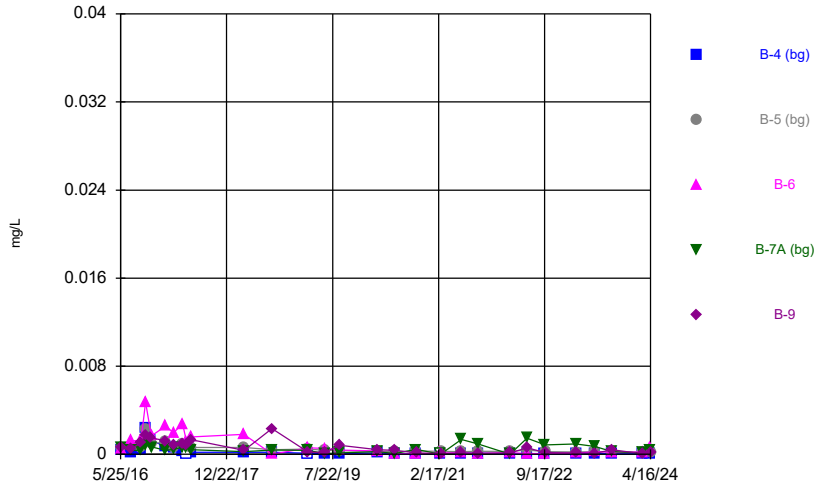

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Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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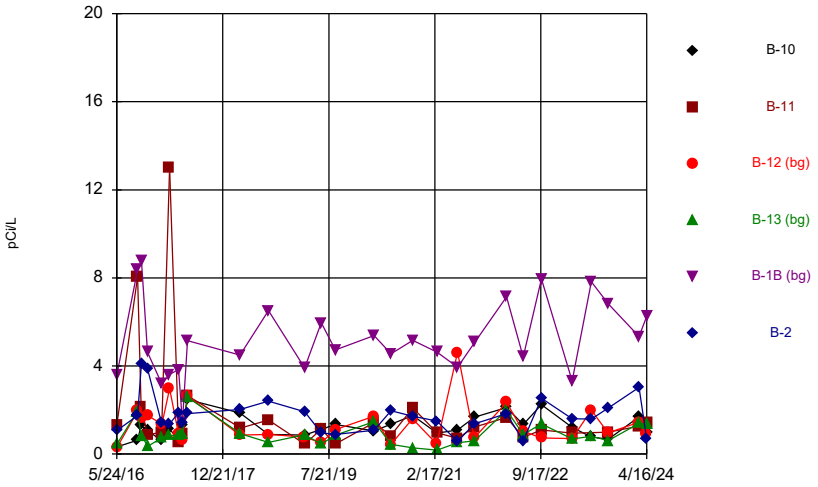
Time Series



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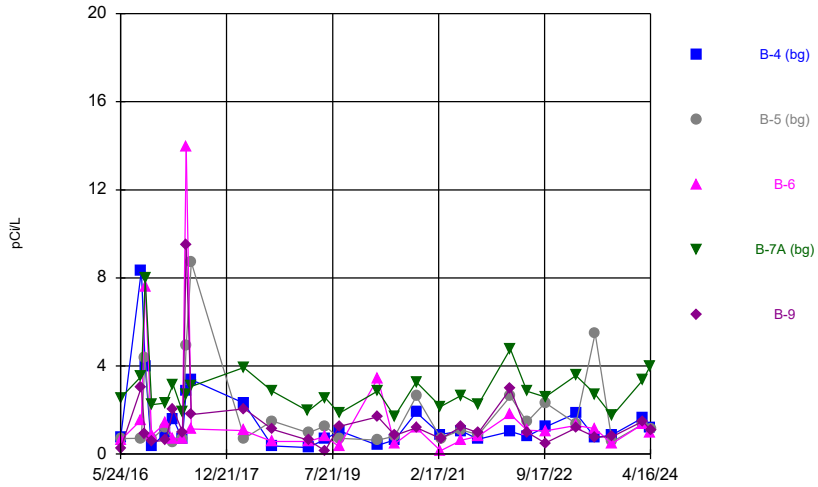

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Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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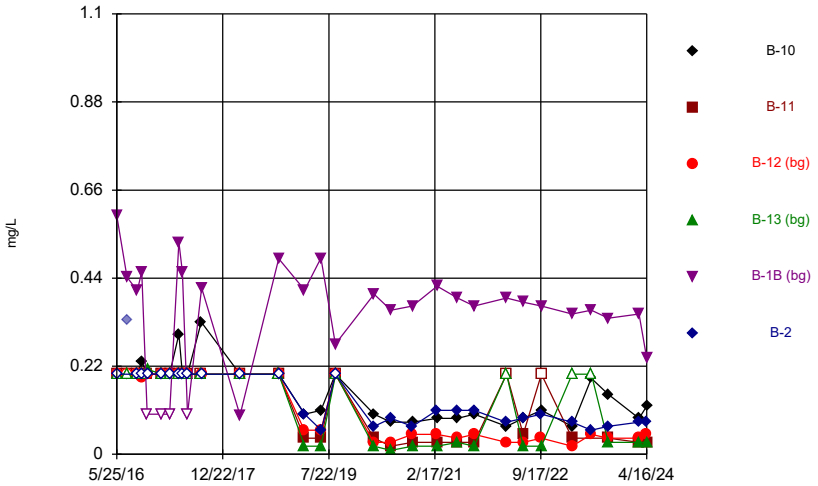
Hollow symbols indicate censored values.

Time Series



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Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG
Hollow symbols indicate censored values.

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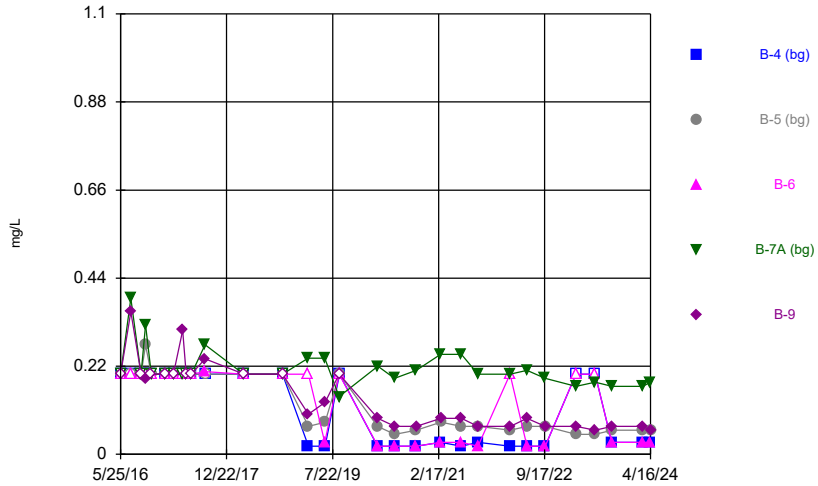

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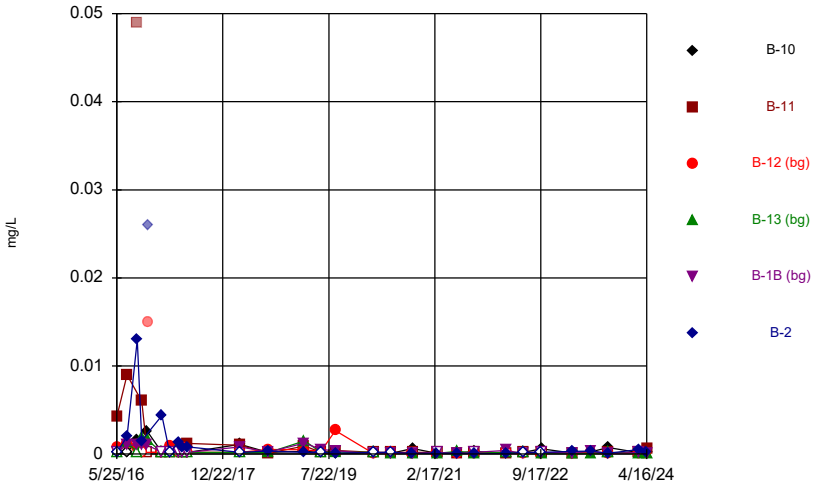

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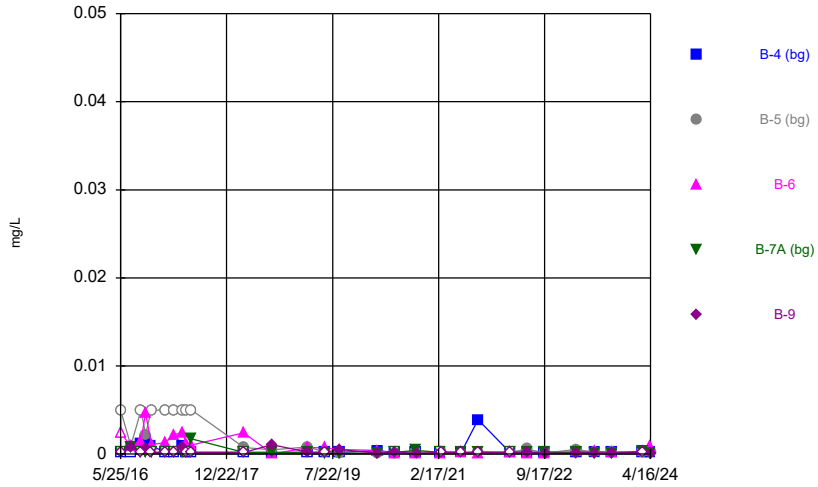
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG
Hollow symbols indicate censored values.

Time Series



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Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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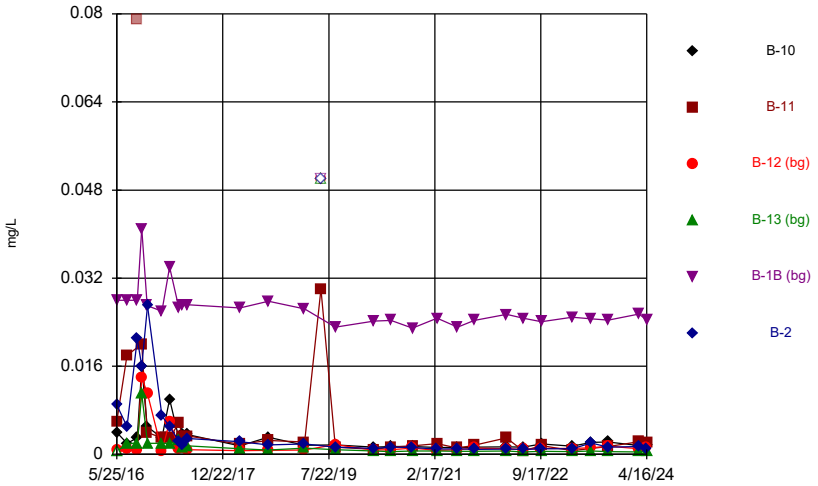

Constituent: Lithium, total Analysis Run 7/31/2024 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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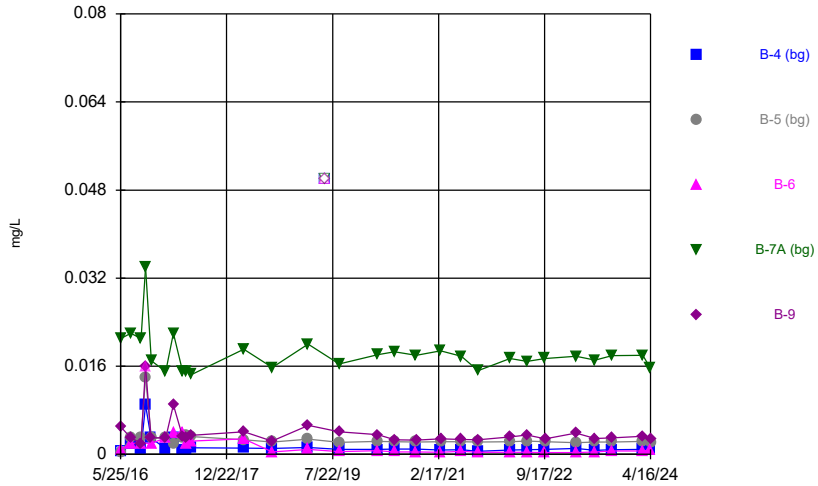
Hollow symbols indicate censored values.

Time Series



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Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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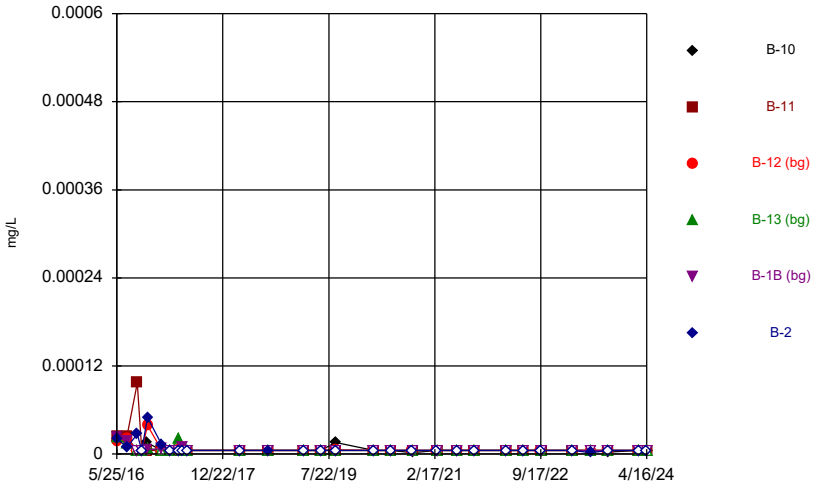
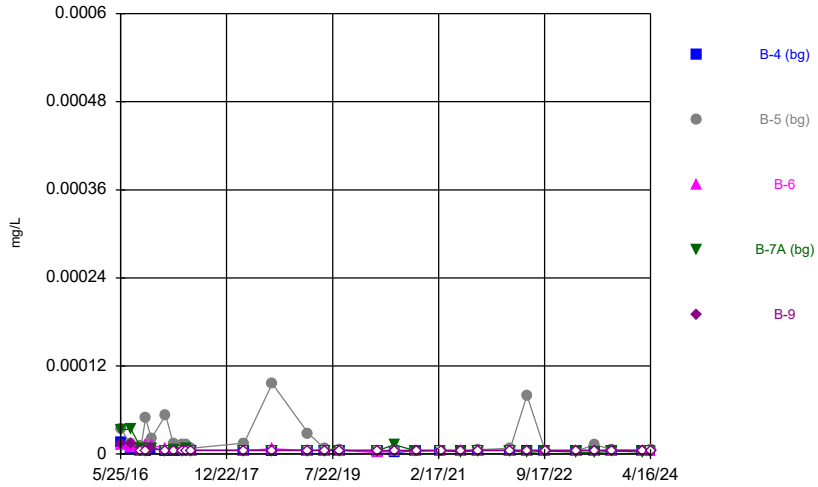
Time Series



Constituent: Mercury, total Analysis Run 7/31/2024 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG
Hollow symbols indicate censored values.

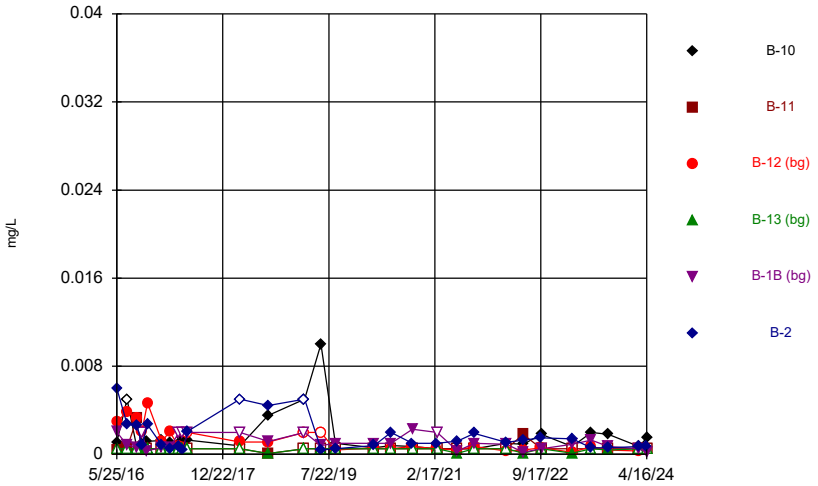
Time Series



Constituent: Mercury, total Analysis Run 7/31/2024 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG
Hollow symbols indicate censored values.

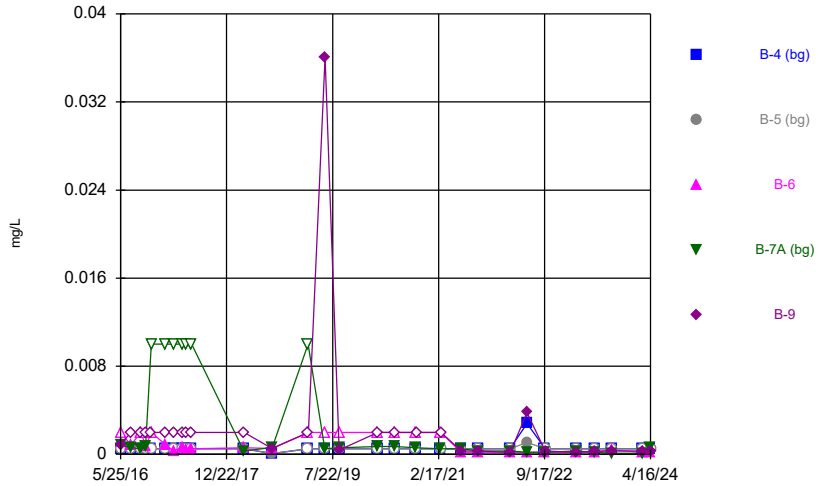
Time Series



Constituent: Molybdenum, total Analysis Run 7/31/2024 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG
Hollow symbols indicate censored values.

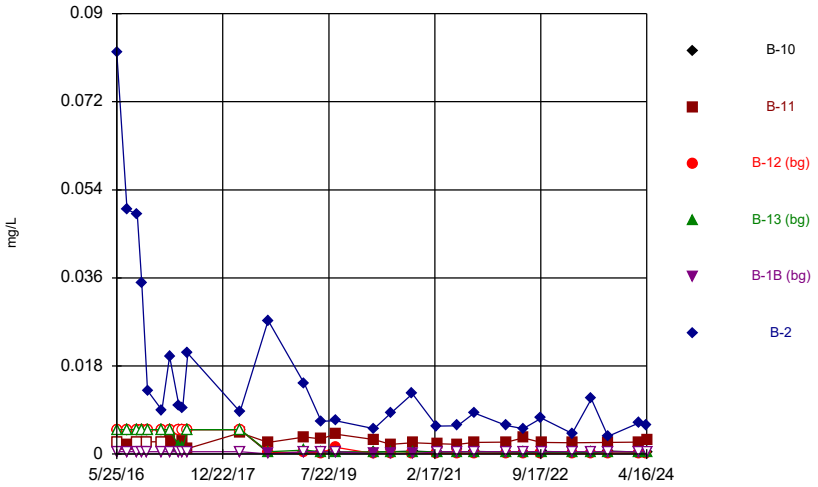
Time Series



Constituent: Molybdenum, total Analysis Run 7/31/2024 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG
Hollow symbols indicate censored values.

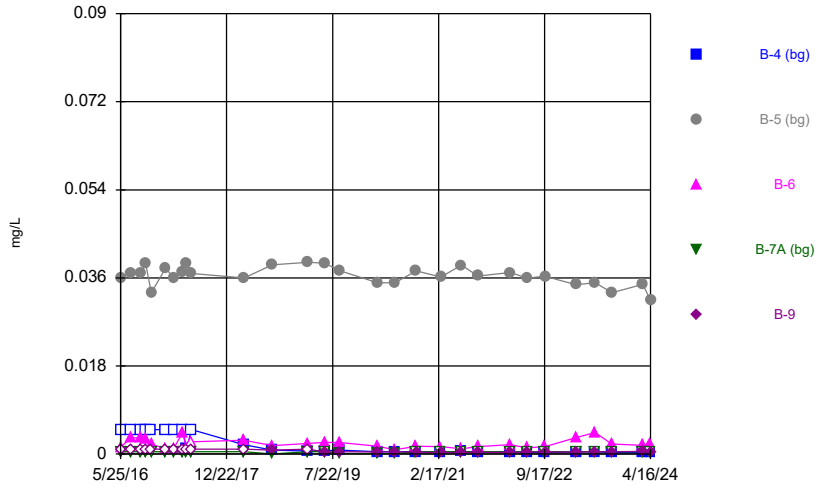
Time Series



Constituent: Selenium, total Analysis Run 7/31/2024 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG
Hollow symbols indicate censored values.

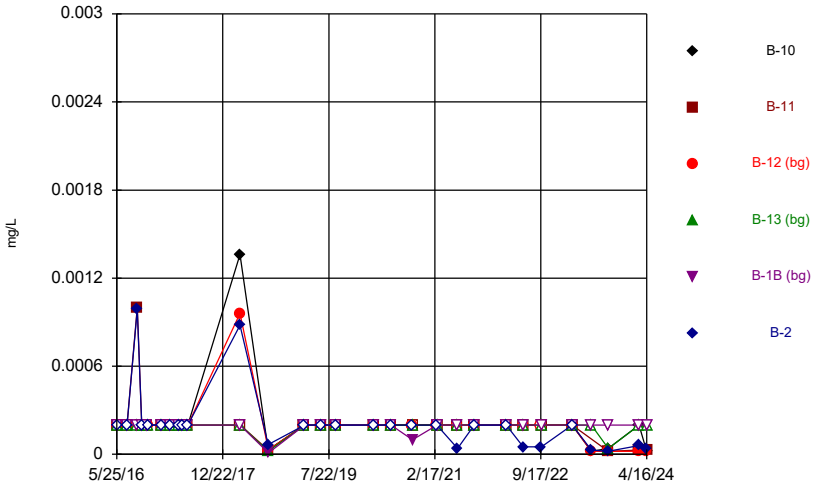
Time Series



Constituent: Selenium, total Analysis Run 7/31/2024 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG
Hollow symbols indicate censored values.

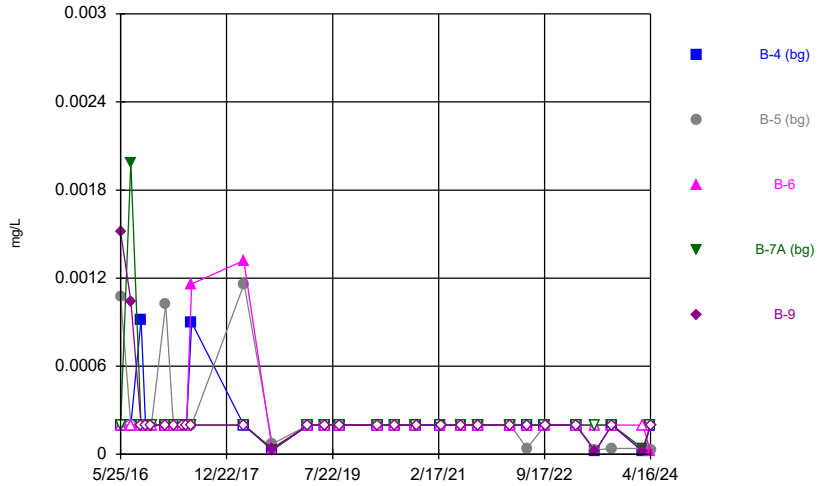
Time Series



Constituent: Thallium, total Analysis Run 7/31/2024 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG
Hollow symbols indicate censored values.

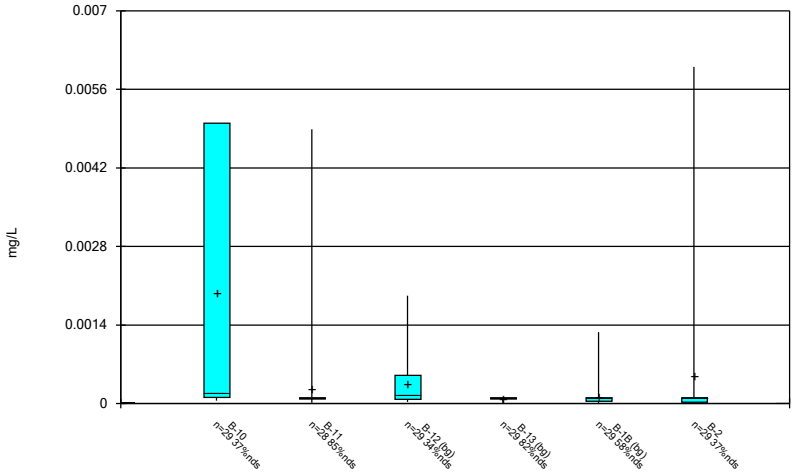
Time Series



Constituent: Thallium, total Analysis Run 7/31/2024 3:49 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

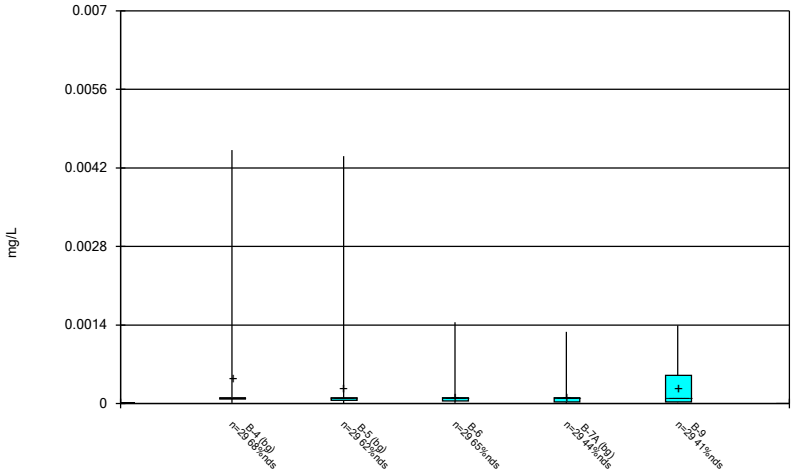
Box & Whiskers Plot



Constituent: Antimony, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

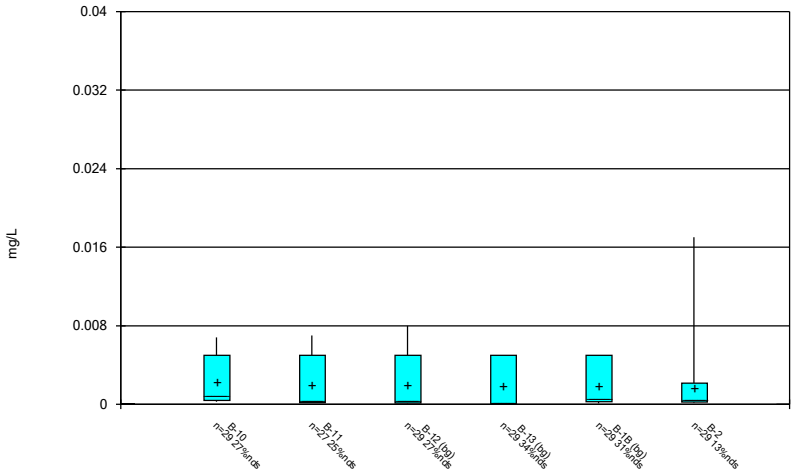
Box & Whiskers Plot



Constituent: Antimony, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

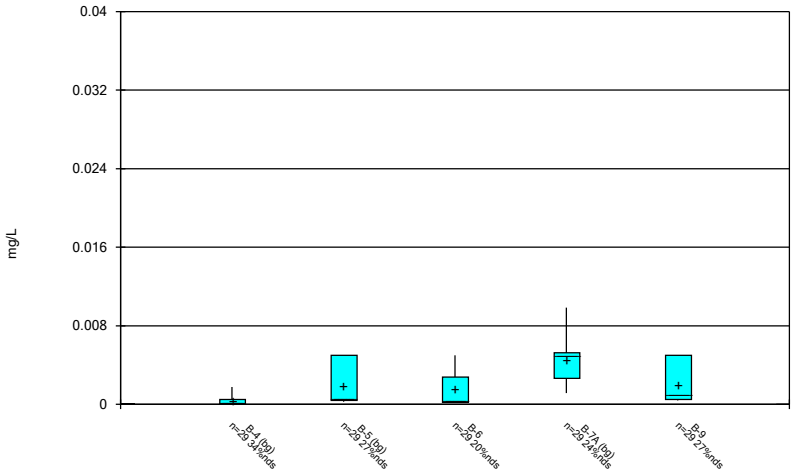
Box & Whiskers Plot



Constituent: Arsenic, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

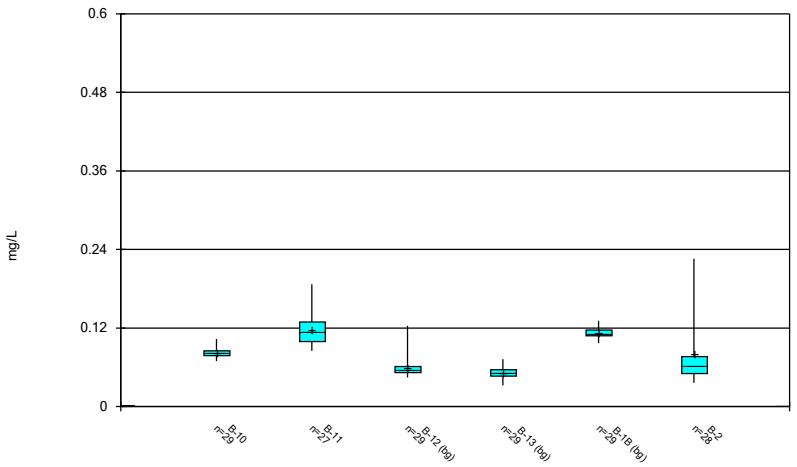
Sanitas™ v.10.0.17a . UG

Box & Whiskers Plot



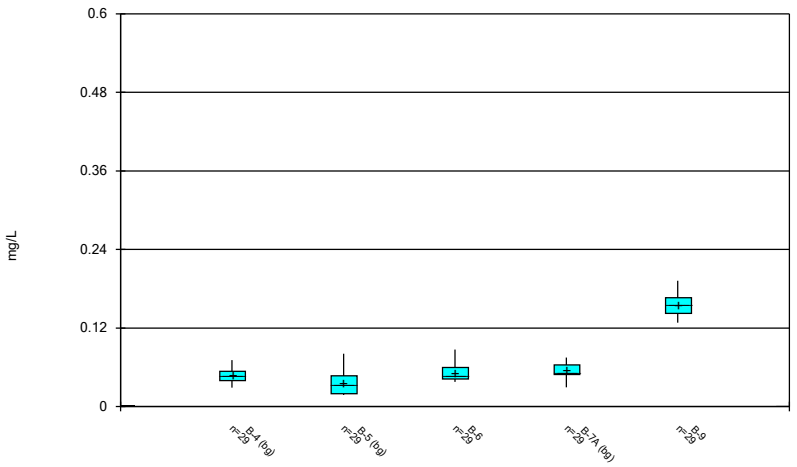
Constituent: Arsenic, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



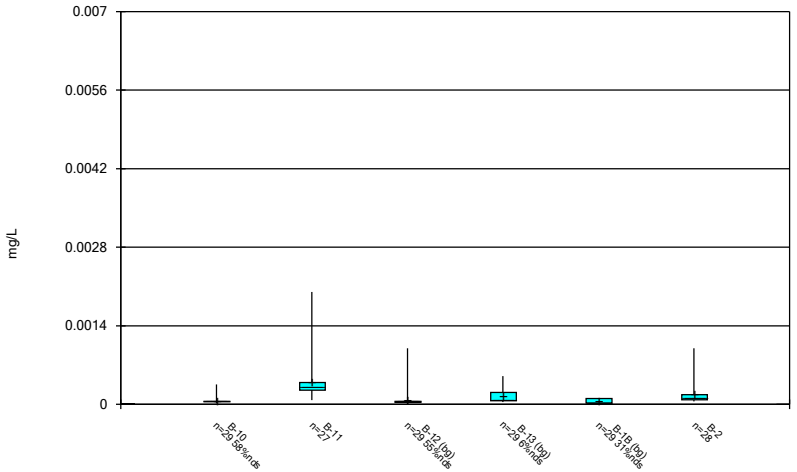
Constituent: Barium, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



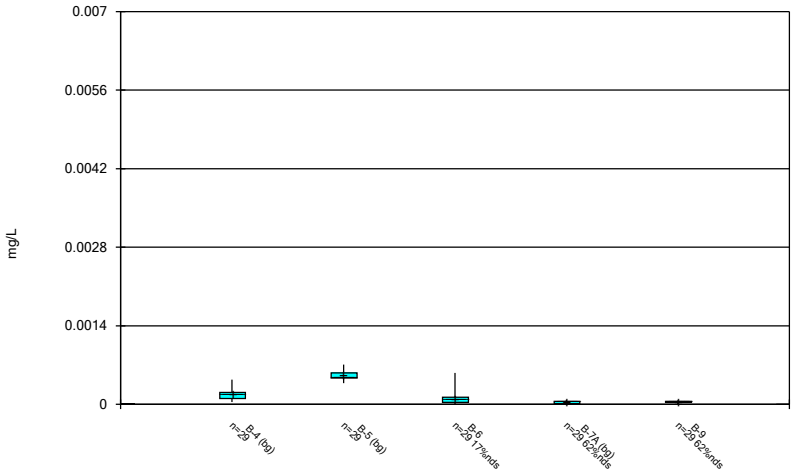
Constituent: Barium, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



Constituent: Beryllium, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

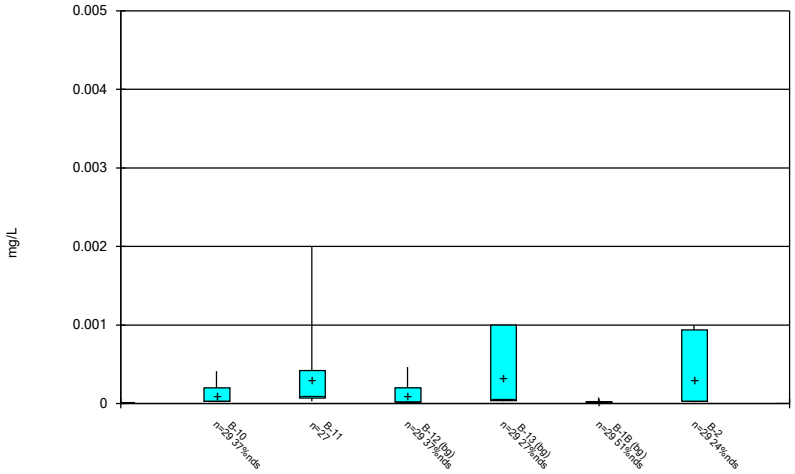
Box & Whiskers Plot



Constituent: Beryllium, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

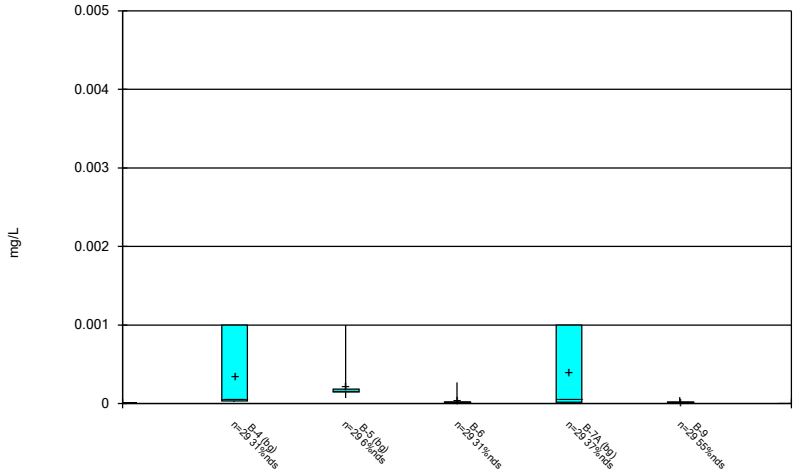
Box & Whiskers Plot



Constituent: Cadmium, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

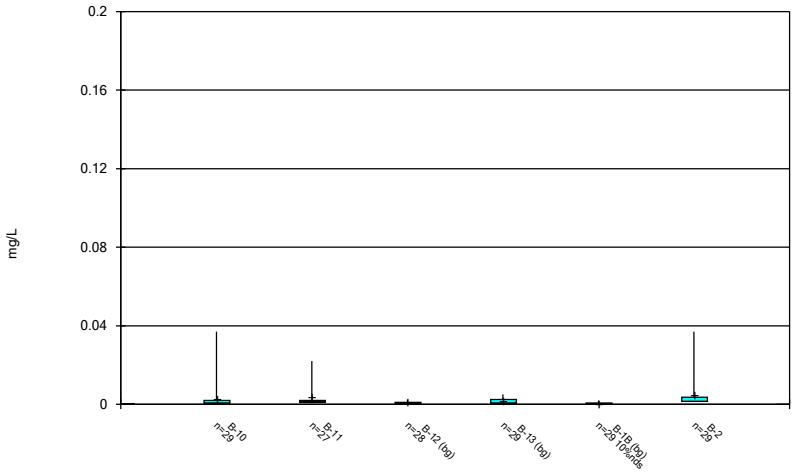
Box & Whiskers Plot



Constituent: Cadmium, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

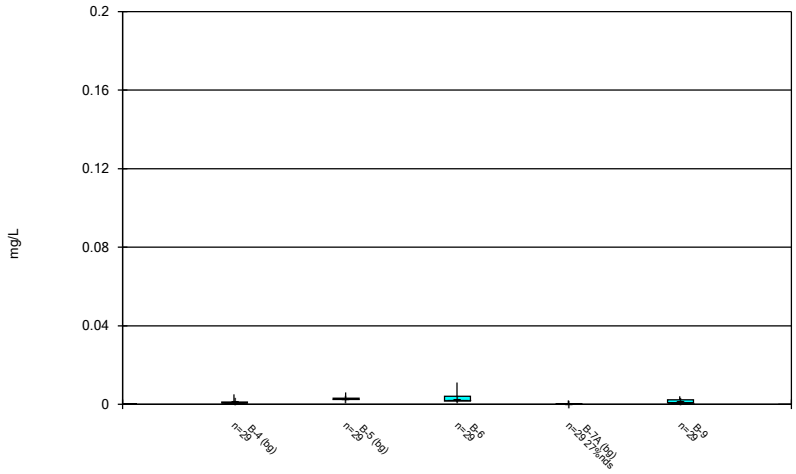
Box & Whiskers Plot



Constituent: Chromium, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

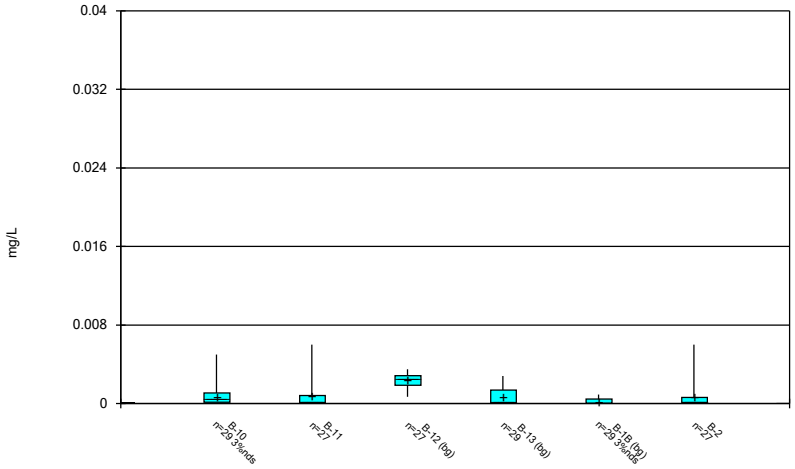
Box & Whiskers Plot



Constituent: Chromium, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

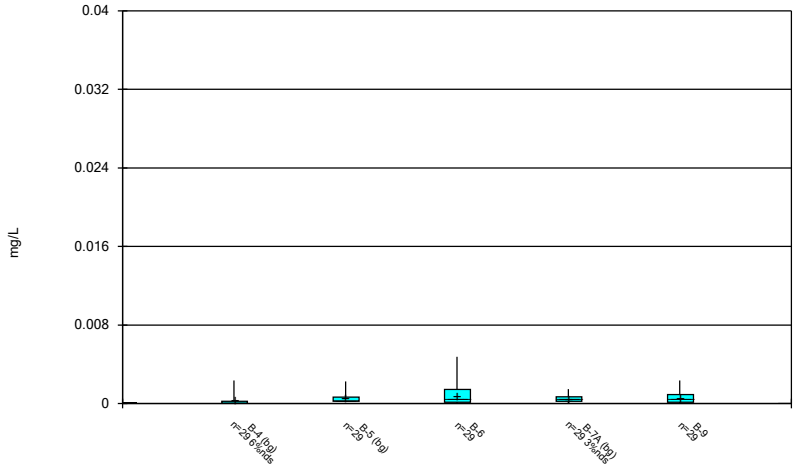
Box & Whiskers Plot



Constituent: Cobalt, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

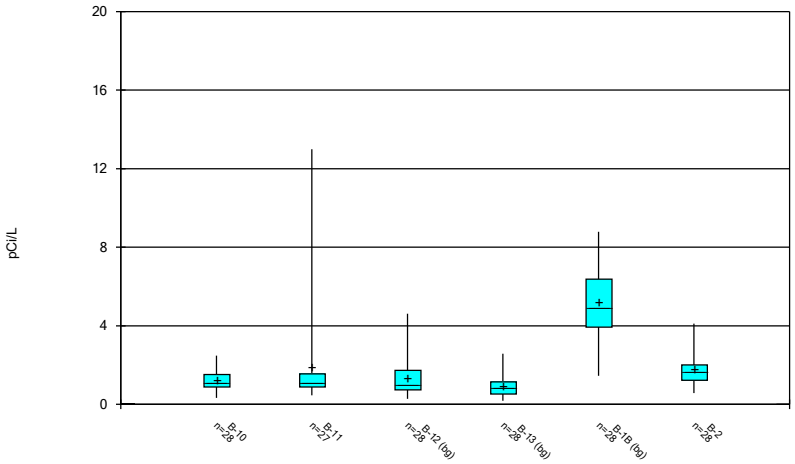
Box & Whiskers Plot



Constituent: Cobalt, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

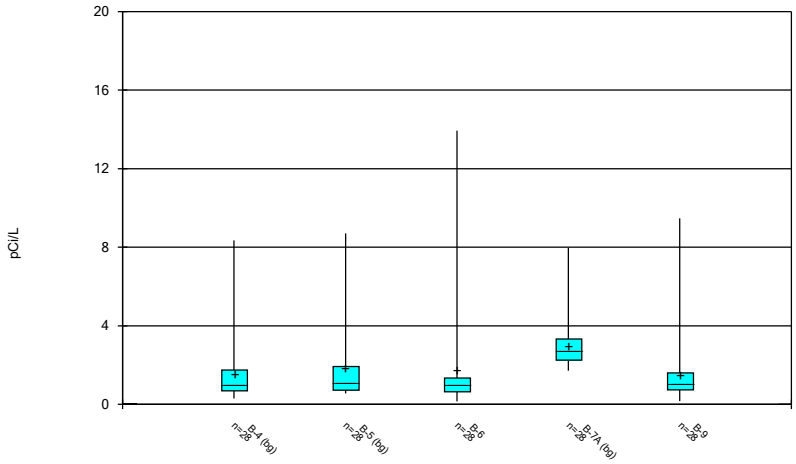
Box & Whiskers Plot



Constituent: Combined Radium 226 + 228 Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

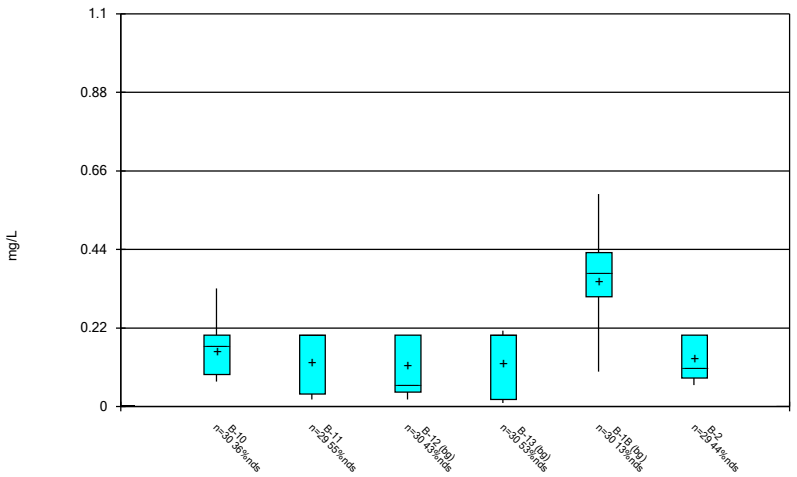
Box & Whiskers Plot



Constituent: Combined Radium 226 + 228 Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

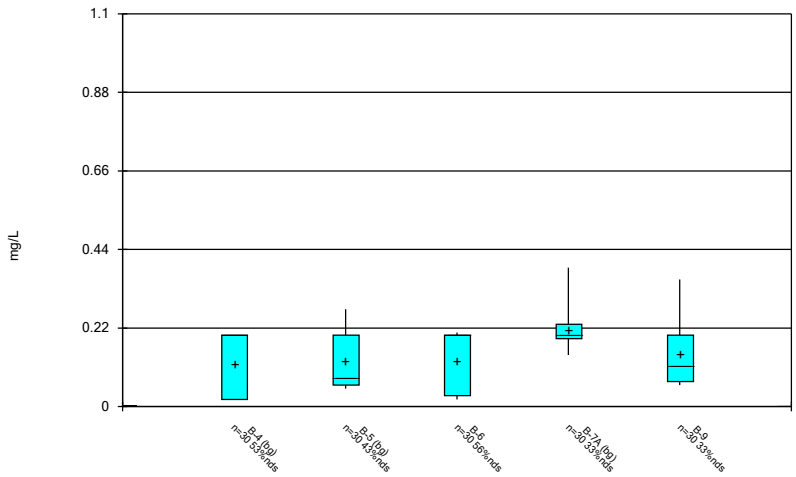
Box & Whiskers Plot



Constituent: Fluoride, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

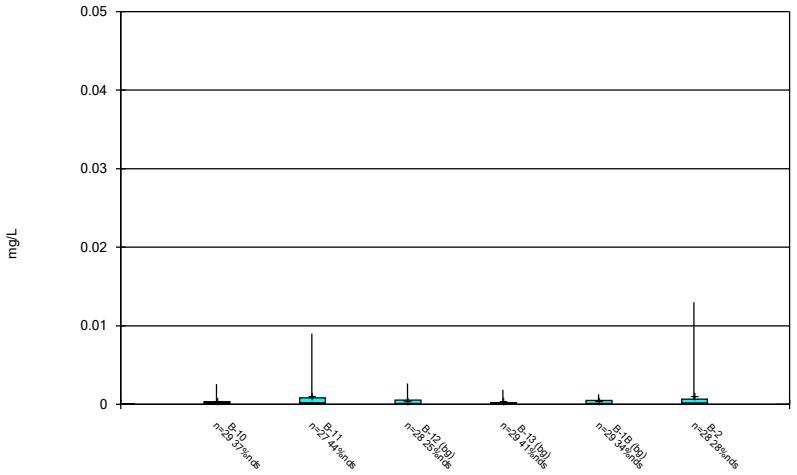
Box & Whiskers Plot



Constituent: Fluoride, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

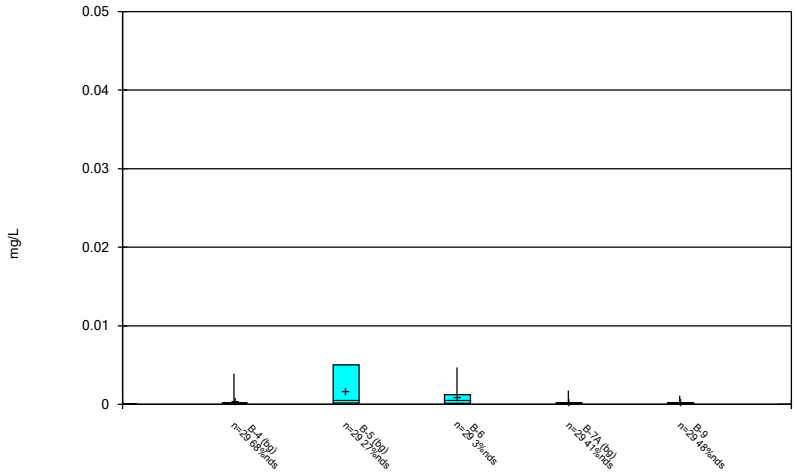
Box & Whiskers Plot



Constituent: Lead, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

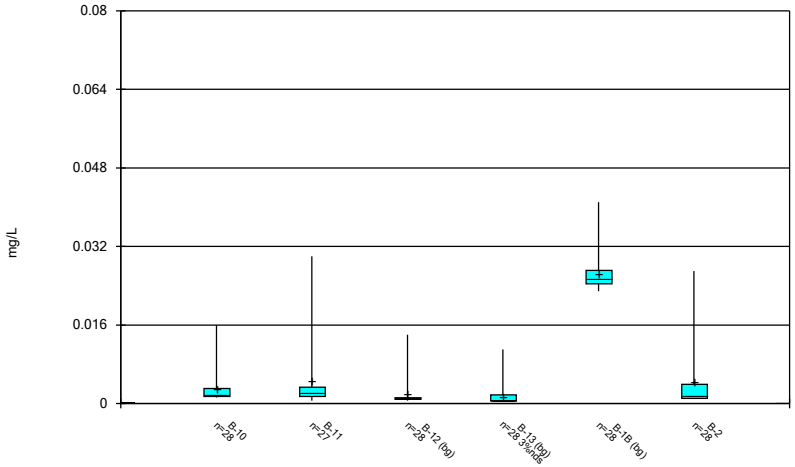
Box & Whiskers Plot



Constituent: Lead, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

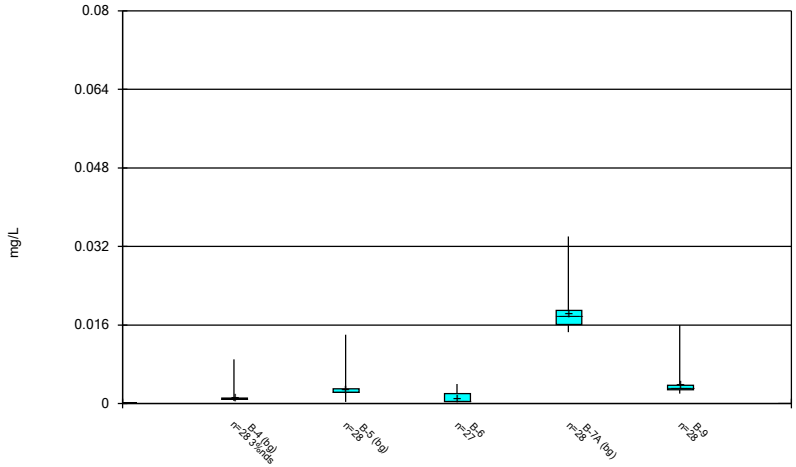
Box & Whiskers Plot



Constituent: Lithium, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

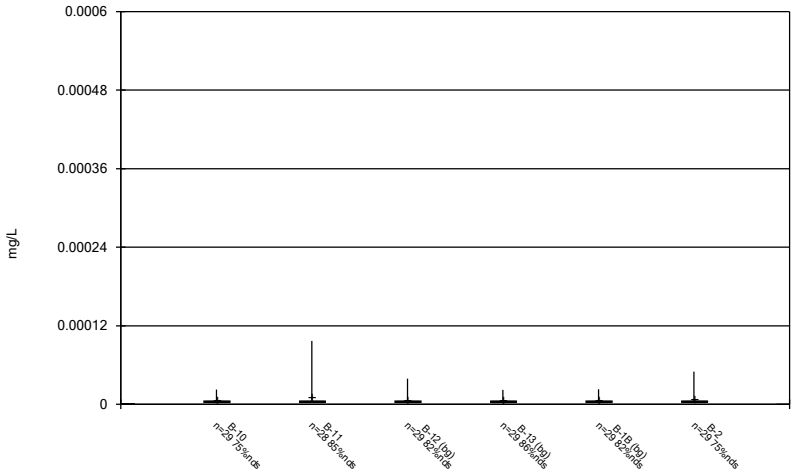
Box & Whiskers Plot



Constituent: Lithium, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

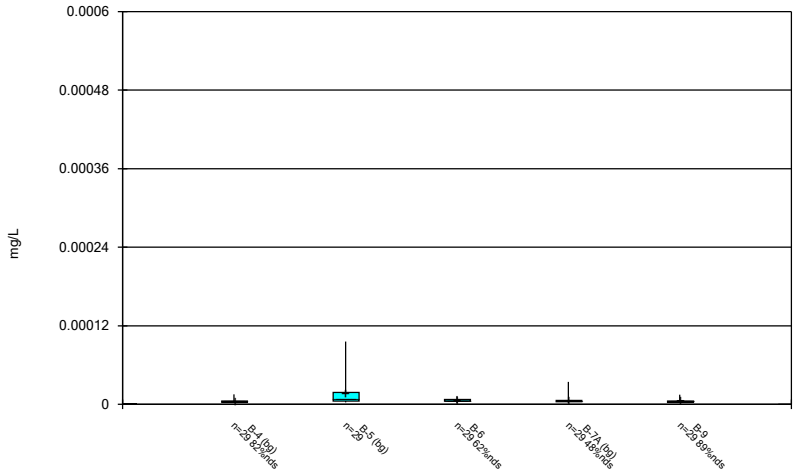
Box & Whiskers Plot



Constituent: Mercury, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

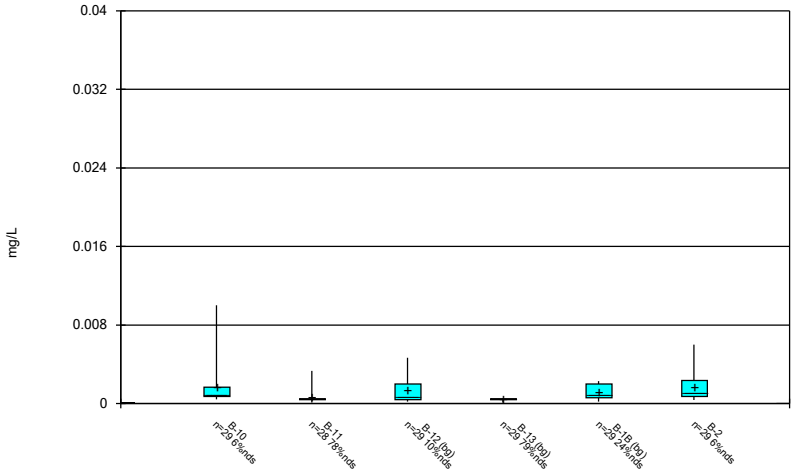
Box & Whiskers Plot



Constituent: Mercury, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

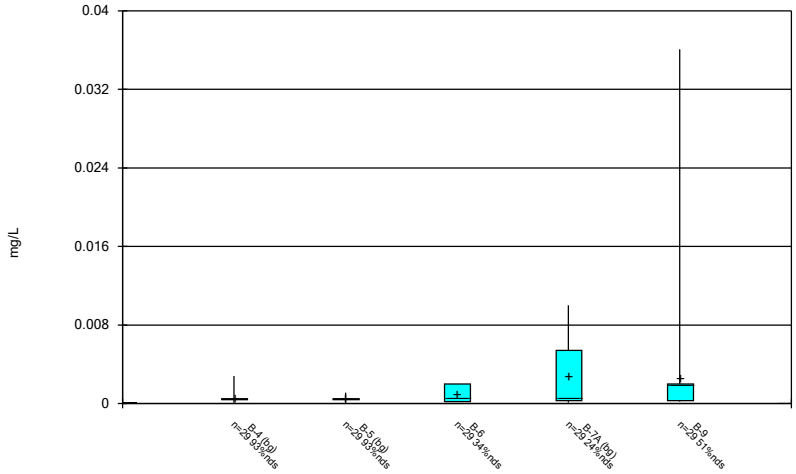
Box & Whiskers Plot



Constituent: Molybdenum, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

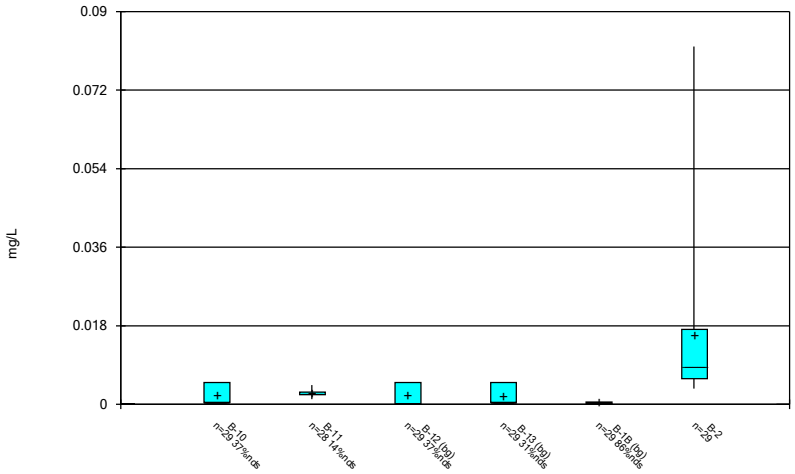
Box & Whiskers Plot



Constituent: Molybdenum, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

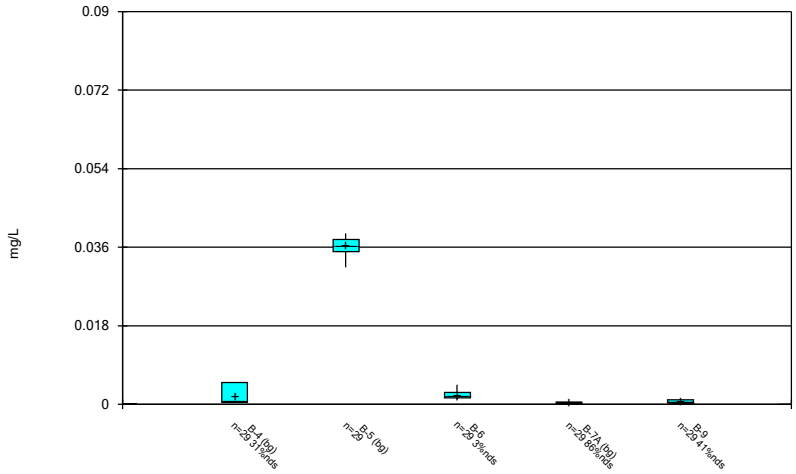
Box & Whiskers Plot



Constituent: Selenium, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

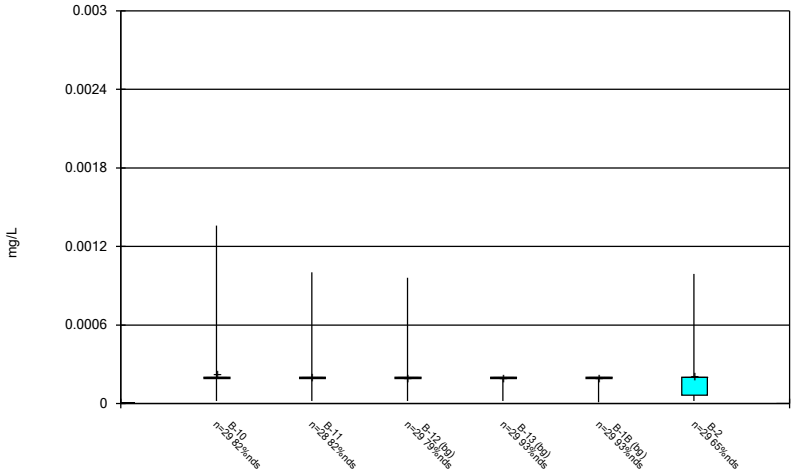
Sanitas™ v.10.0.17a . UG

Box & Whiskers Plot



Constituent: Selenium, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

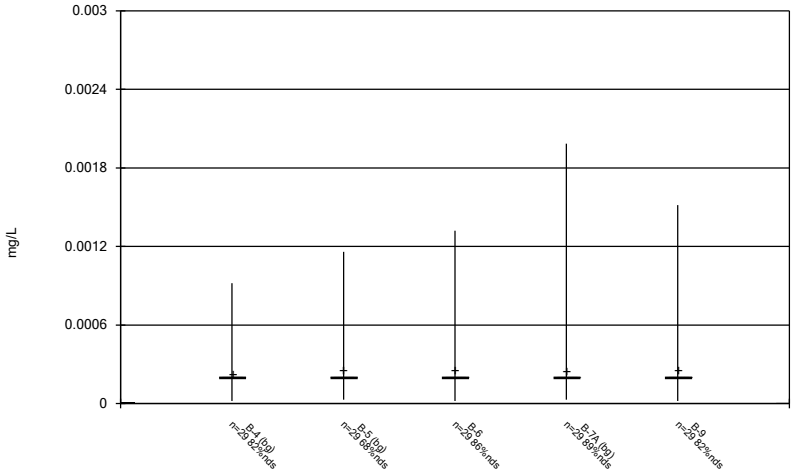
Box & Whiskers Plot



Constituent: Thallium, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

Box & Whiskers Plot



Constituent: Thallium, total Analysis Run 7/31/2024 3:51 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Outlier Summary

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 7/31/2024, 3:46 PM

	B-11 Arsenic, total (mg/L)	B-11 Barium, total (mg/L)	B-2 Barium, total (mg/L)	B-11 Beryllium, total (mg/L)	B-2 Beryllium, total (mg/L)	B-11 Cadmium, total (mg/L)	B-11 Chromium, total (mg/L)	B-12 Chromium, total (mg/L)	B-11 Cobalt, total (mg/L)	B-12 Cobalt, total (mg/L)
7/19/2016										
9/14/2016	0.032 (o)	0.494 (o)		0.006 (o)		0.004 (o)	0.108 (o)		0.025 (o)	
10/7/2016										
11/8/2016			0.543 (o)		0.003 (o)			0.022 (o)		0.023 (o)
6/10/2019										
6/11/2019										
8/27/2019										0.0112 (o)

	B-2 Cobalt, total (mg/L)	B-2 Fluoride, total (mg/L)	B-11 Lead, total (mg/L)	B-12 Lead, total (mg/L)	B-2 Lead, total (mg/L)	B-10 Lithium, total (mg/L)	B-11 Lithium, total (mg/L)	B-12 Lithium, total (mg/L)	B-13 Lithium, total (mg/L)	B-1B Lithium, total (mg/L)
7/19/2016		0.3361 (J,o)								
9/14/2016	0.015 (o)		0.049 (o)				0.079 (o)			
10/7/2016										
11/8/2016	0.031 (o)			0.015 (o)	0.026 (o)					
6/10/2019						<0.1 (o)		<0.1 (o)	<0.1 (o)	<0.1 (o)
6/11/2019										
8/27/2019										

	B-2 Lithium, total (mg/L)	B-4 Lithium, total (mg/L)	B-5 Lithium, total (mg/L)	B-6 Lithium, total (mg/L)	B-7A Lithium, total (mg/L)	B-9 Lithium, total (mg/L)
7/19/2016						
9/14/2016						
10/7/2016				0.016 (o)		
11/8/2016						
6/10/2019				<0.1 (o)	<0.1 (o)	
6/11/2019	<0.1 (o)	<0.1 (o)	<0.1 (o)			<0.1 (o)
8/27/2019						

Upper Tolerance Limits Summary Table

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 12/13/2023, 3:57 PM

Constituent	Upper Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony, total (mg/L)	0.00452	n/a	n/a	n/a	162	n/a	n/a	60.49	n/a	n/a	0.0002462	NP Inter(NDs)
Arsenic, total (mg/L)	0.00983	n/a	n/a	n/a	162	n/a	n/a	32.1	n/a	n/a	0.0002462	NP Inter(normality)
Barium, total (mg/L)	0.131	n/a	n/a	n/a	162	n/a	n/a	0	n/a	n/a	0.0002462	NP Inter(normality)
Beryllium, total (mg/L)	0.001	n/a	n/a	n/a	162	n/a	n/a	27.16	n/a	n/a	0.0002462	NP Inter(normality)
Cadmium, total (mg/L)	0.001	n/a	n/a	n/a	162	n/a	n/a	33.95	n/a	n/a	0.0002462	NP Inter(normality)
Chromium, total (mg/L)	0.006	n/a	n/a	n/a	161	n/a	n/a	6.832	n/a	n/a	0.0002591	NP Inter(normality)
Cobalt, total (mg/L)	0.005179	n/a	n/a	n/a	160	-8.063	1.505	2.5	None	ln(x)	0.05	Inter
Combined Radium 226 + 228 (pCi/L)	8.79	n/a	n/a	n/a	156	n/a	n/a	0	n/a	n/a	0.0003349	NP Inter(normality)
Fluoride, total (mg/L)	0.5955	n/a	n/a	n/a	168	n/a	n/a	42.86	n/a	n/a	0.000181	NP Inter(normality)
Lead, total (mg/L)	0.00389	n/a	n/a	n/a	161	n/a	n/a	40.99	n/a	n/a	0.0002591	NP Inter(normality)
Lithium, total (mg/L)	0.041	n/a	n/a	n/a	156	n/a	n/a	1.282	n/a	n/a	0.0003349	NP Inter(normality)
Mercury, total (mg/L)	0.000096	n/a	n/a	n/a	162	n/a	n/a	62.96	n/a	n/a	0.0002462	NP Inter(NDs)
Molybdenum, total (mg/L)	0.004655	n/a	n/a	n/a	162	n/a	n/a	54.32	n/a	n/a	0.0002462	NP Inter(NDs)
Selenium, total (mg/L)	0.0392	n/a	n/a	n/a	162	n/a	n/a	46.3	n/a	n/a	0.0002462	NP Inter(normality)
Thallium, total (mg/L)	0.001985	n/a	n/a	n/a	162	n/a	n/a	87.04	n/a	n/a	0.0002462	NP Inter(NDs)

Tolerance Limit

Interwell Non-parametric

Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 162 background values. 60.49% NDs. 97.07% coverage at alpha=0.01; 98.24% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.0002462.

Constituent: Antimony, total Analysis Run 12/13/2023 3:55 PM View: Appendix IV - UTLs
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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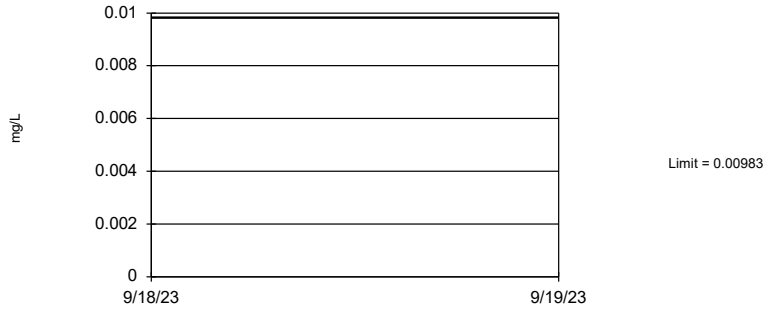
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 162 background values. 32.1% NDs. 97.07% coverage at alpha=0.01; 98.24% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.0002462.

Constituent: Arsenic, total Analysis Run 12/13/2023 3:55 PM View: Appendix IV - UTLs
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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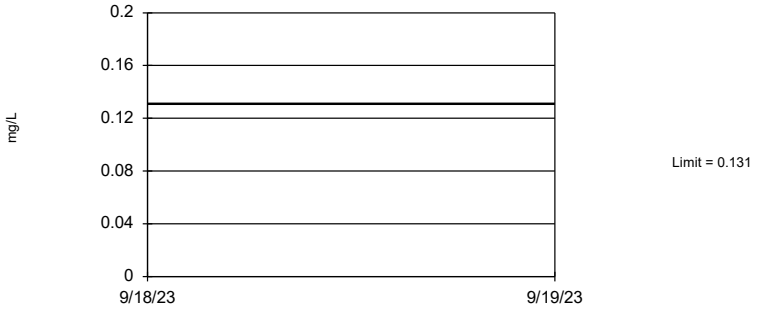
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 162 background values. 97.07% coverage at alpha=0.01; 98.24% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.0002462.

Constituent: Barium, total Analysis Run 12/13/2023 3:55 PM View: Appendix IV - UTLs
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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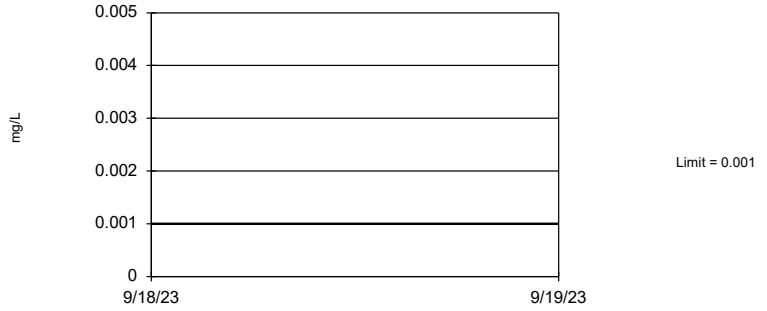
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 162 background values. 27.16% NDs. 97.07% coverage at alpha=0.01; 98.24% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.0002462.

Constituent: Beryllium, total Analysis Run 12/13/2023 3:55 PM View: Appendix IV - UTLs
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tolerance Limit

Interwell Non-parametric

Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 162 background values. 33.95% NDs. 97.07% coverage at alpha=0.01; 98.24% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.0002462.

Constituent: Cadmium, total Analysis Run 12/13/2023 3:55 PM View: Appendix IV - UTLs
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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Tolerance Limit

Interwell Non-parametric

Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 161 background values. 6.832% NDs. 97.07% coverage at alpha=0.01; 98.24% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.0002591.

Constituent: Chromium, total Analysis Run 12/13/2023 3:55 PM View: Appendix IV - UTLs
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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Tolerance Limit

Interwell Parametric

95% coverage. Background Data Summary (based on natural log transformation): Mean=-8.063, Std. Dev.=1.505, n=160, 2.5% NDs. Normality test: Chi Squared @alpha = 0.01, calculated = 14, critical = 14.07. Report alpha = 0.05.

Constituent: Cobalt, total Analysis Run 12/13/2023 3:55 PM View: Appendix IV - UTLs
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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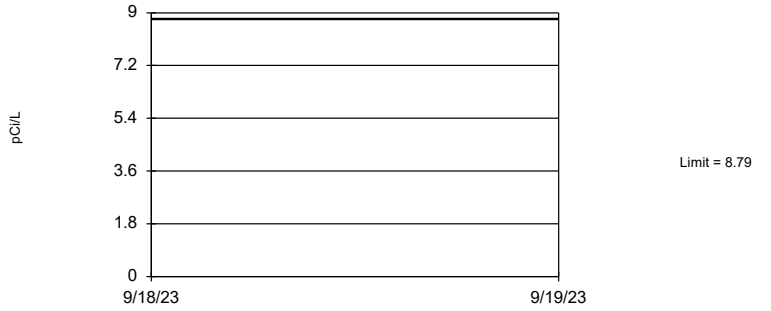
Tolerance Limit

Interwell Non-parametric

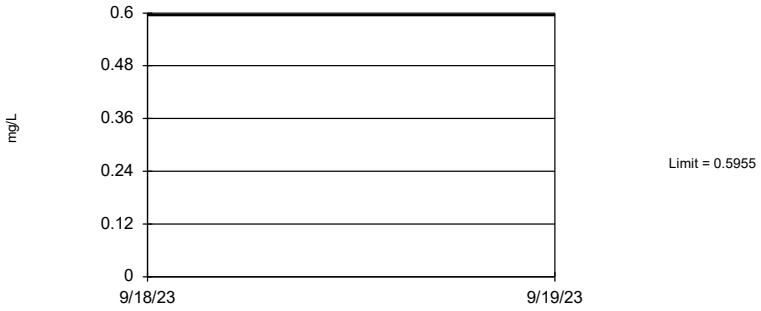


Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 156 background values. 97.07% coverage at alpha=0.01; 98.24% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.0003349.

Constituent: Combined Radium 226 + 228 Analysis Run 12/13/2023 3:55 PM View: Appendix IV - UTLs
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 168 background values. 42.86% NDs. 97.46% coverage at alpha=0.01; 98.24% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.000181.

Constituent: Fluoride, total Analysis Run 12/13/2023 3:55 PM View: Appendix IV - UTLs
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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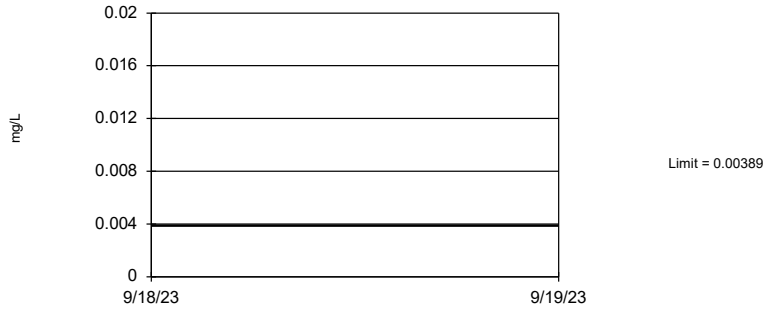
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 161 background values. 40.99% NDs. 97.07% coverage at alpha=0.01; 98.24% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.0002591.

Constituent: Lead, total Analysis Run 12/13/2023 3:55 PM View: Appendix IV - UTLs
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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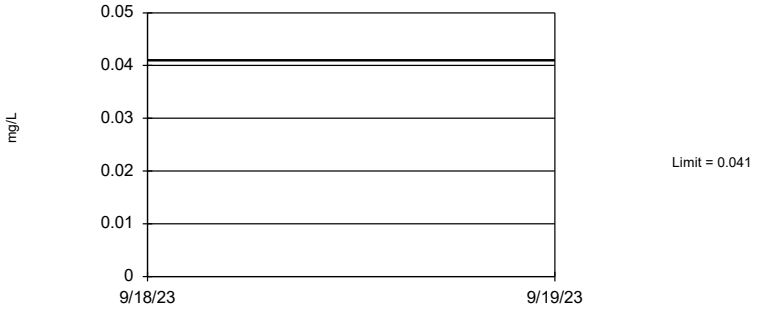
Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 156 background values. 1.282% NDs. 97.07% coverage at alpha=0.01; 98.24% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.0003349.

Constituent: Lithium, total Analysis Run 12/13/2023 3:55 PM View: Appendix IV - UTLs
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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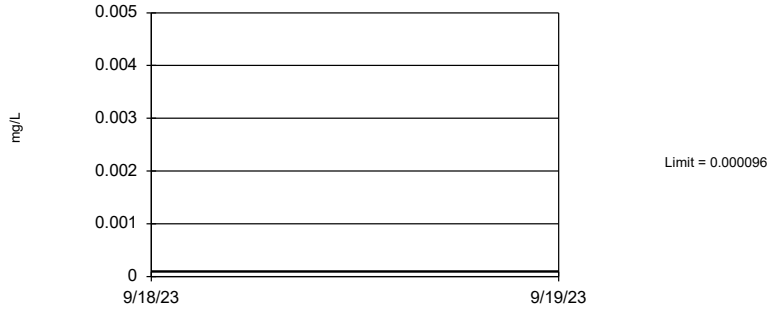
Tolerance Limit

Interwell Non-parametric

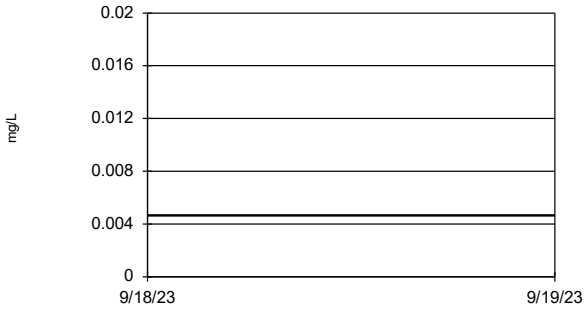


Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 162 background values. 62.96% NDs. 97.07% coverage at alpha=0.01; 98.24% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.0002462.

Constituent: Mercury, total Analysis Run 12/13/2023 3:55 PM View: Appendix IV - UTLs
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tolerance Limit

Interwell Non-parametric



Limit = 0.004655

Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 162 background values. 54.32% NDs. 97.07% coverage at alpha=0.01; 98.24% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.0002462.

Constituent: Molybdenum, total Analysis Run 12/13/2023 3:55 PM View: Appendix IV - UTLs
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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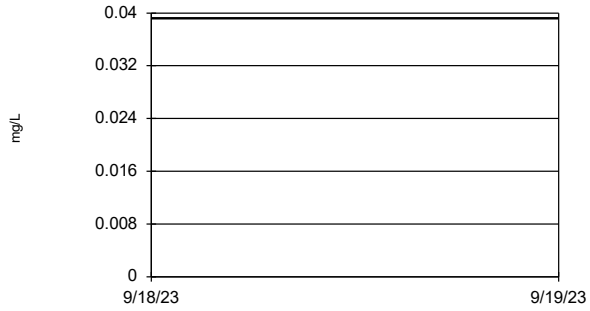
Tolerance Limit

Interwell Non-parametric



Limit = 0.0392

Non-parametric test used in lieu of parametric tolerance limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 162 background values. 46.3% NDs. 97.07% coverage at alpha=0.01; 98.24% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.0002462.

Constituent: Selenium, total Analysis Run 12/13/2023 3:55 PM View: Appendix IV - UTLs
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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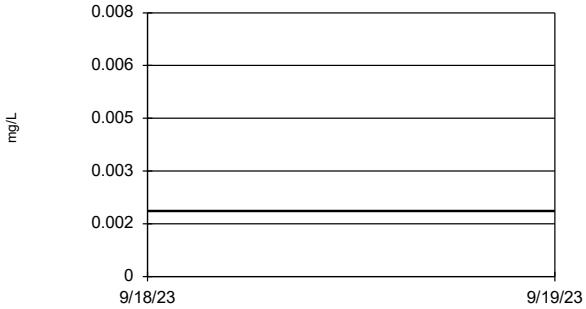
Tolerance Limit

Interwell Non-parametric



Limit = 0.001985

Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 162 background values. 87.04% NDs. 97.07% coverage at alpha=0.01; 98.24% coverage at alpha=0.05; 99.41% coverage at alpha=0.5. Report alpha = 0.0002462.

Constituent: Thallium, total Analysis Run 12/13/2023 3:55 PM View: Appendix IV - UTLs
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

FLINT CREEK LANDFILL GWPS				
Constituent Name	**MCL**	**CCR-Rule Specified**	**Background Limit**	**GWPS**
Antimony, Total (mg/L)	0.006		0.0045	0.006
Arsenic, Total (mg/L)	0.01		0.0098	0.01
Barium, Total (mg/L)	2		0.13	2
Beryllium, Total (mg/L)	0.004		0.001	0.004
Cadmium, Total (mg/L)	0.005		0.001	0.005
Chromium, Total (mg/L)	0.1		0.006	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.0052	0.006
Combined Radium, Total (pCi/L)	5		8.79	8.79
Fluoride, Total (mg/L)	4		0.6	4
Lead, Total (mg/L)	n/a	0.015	0.0039	0.015
Lithium, Total (mg/L)	n/a	0.04	0.041	0.041
Mercury, Total (mg/L)	0.002		0.000096	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.0047	0.1
Selenium, Total (mg/L)	0.05		0.0392	0.05
Thallium, Total (mg/L)	0.002		0.002	0.002

**Grey cell indicates background limit is higher than MCL or CCR-Rule Specified level*

**GWPS = Groundwater Protection Standard*

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residual*

Confidence Intervals Summary Table - All Results (No Significant)

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 7/31/2024, 1:47 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony, total (mg/L)	B-10	0.005	0.00011	0.006	No	29	0.002395	37.93	None	No	0.01	NP (normality)
Antimony, total (mg/L)	B-11	0.0001	0.000028	0.006	No	28	0.0009073	85.71	None	No	0.01	NP (NDs)
Antimony, total (mg/L)	B-2	0.001152	0.000028	0.006	No	29	0.001183	37.93	None	No	0.01	NP (normality)
Antimony, total (mg/L)	B-6	0.0001	0.00005	0.006	No	29	0.0002567	65.52	None	No	0.01	NP (NDs)
Antimony, total (mg/L)	B-9	0.0005	0.00003	0.006	No	29	0.0003138	41.38	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	B-10	0.005	0.00038	0.01	No	29	0.00229	27.59	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	B-11	0.003138	0.00017	0.01	No	27	0.002329	25.93	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	B-2	0.00177	0.00022	0.01	No	29	0.00335	13.79	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	B-6	0.00189	0.00019	0.01	No	29	0.001939	20.69	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	B-9	0.00168	0.0005	0.01	No	29	0.001951	27.59	None	No	0.01	NP (normality)
Barium, total (mg/L)	B-10	0.08527	0.07892	2	No	29	0.007162	0	None	x^(1/3)	0.01	Param.
Barium, total (mg/L)	B-11	0.1275	0.1053	2	No	27	0.02323	0	None	No	0.01	Param.
Barium, total (mg/L)	B-2	0.073	0.051	2	No	28	0.05164	0	None	No	0.01	NP (normality)
Barium, total (mg/L)	B-6	0.05707	0.04626	2	No	29	0.01242	0	None	sqrt(x)	0.01	Param.
Barium, total (mg/L)	B-9	0.1624	0.148	2	No	29	0.0157	0	None	No	0.01	Param.
Beryllium, total (mg/L)	B-10	0.00005	0.000047	0.004	No	29	0.00005799	58.62	None	No	0.01	NP (NDs)
Beryllium, total (mg/L)	B-11	0.0004387	0.0002313	0.004	No	27	0.0003805	0	None	ln(x)	0.01	Param.
Beryllium, total (mg/L)	B-2	0.000169	0.00008	0.004	No	28	0.0002091	0	None	No	0.01	NP (normality)
Beryllium, total (mg/L)	B-6	0.000102	0.00003074	0.004	No	29	0.0001097	17.24	Kaplan-Meier	sqrt(x)	0.01	Param.
Beryllium, total (mg/L)	B-9	0.00005	0.000034	0.004	No	29	0.00001351	62.07	Kaplan-Meier	No	0.01	NP (NDs)
Cadmium, total (mg/L)	B-10	0.0002	0.000027	0.005	No	29	0.0001017	37.93	None	No	0.01	NP (normality)
Cadmium, total (mg/L)	B-11	0.0002579	0.00009196	0.005	No	27	0.0004367	0	None	ln(x)	0.01	Param.
Cadmium, total (mg/L)	B-2	0.0008704	0.000029	0.005	No	29	0.000429	24.14	None	No	0.01	NP (normality)
Cadmium, total (mg/L)	B-6	0.00002	0.000014	0.005	No	29	0.00007049	31.03	None	No	0.01	NP (normality)
Cadmium, total (mg/L)	B-9	0.00002	0.00001	0.005	No	29	0.00001526	55.17	None	No	0.01	NP (NDs)
Chromium, total (mg/L)	B-10	0.002	0.00063	0.1	No	29	0.007157	0	None	No	0.01	NP (normality)
Chromium, total (mg/L)	B-11	0.002	0.00092	0.1	No	27	0.005202	0	None	No	0.01	NP (normality)
Chromium, total (mg/L)	B-2	0.00344	0.00149	0.1	No	29	0.007836	0	None	No	0.01	NP (normality)
Chromium, total (mg/L)	B-6	0.003285	0.002016	0.1	No	29	0.00207	0	None	ln(x)	0.01	Param.
Chromium, total (mg/L)	B-9	0.001883	0.001019	0.1	No	29	0.001047	0	None	sqrt(x)	0.01	Param.
Cobalt, total (mg/L)	B-10	0.0008035	0.000263	0.006	No	29	0.0009518	3.448	None	x^(1/3)	0.01	Param.
Cobalt, total (mg/L)	B-11	0.000824	0.000107	0.006	No	27	0.001448	0	None	No	0.01	NP (normality)
Cobalt, total (mg/L)	B-2	0.0005093	0.0001491	0.006	No	27	0.001207	0	None	ln(x)	0.01	Param.
Cobalt, total (mg/L)	B-6	0.001036	0.0002873	0.006	No	29	0.001092	0	None	sqrt(x)	0.01	Param.
Cobalt, total (mg/L)	B-9	0.0007335	0.00028	0.006	No	29	0.0005803	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	B-10	1.476	0.9876	8.79	No	28	0.523	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	B-11	1.55	0.874	8.79	No	27	2.635	0	None	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	B-2	2.152	1.352	8.79	No	28	0.8556	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	B-6	1.538	0.6755	8.79	No	28	2.769	0	None	ln(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	B-9	1.528	0.7408	8.79	No	28	1.715	0	None	ln(x)	0.01	Param.
Fluoride, total (mg/L)	B-10	0.2	0.1	4	No	30	0.069	36.67	None	No	0.01	NP (normality)
Fluoride, total (mg/L)	B-11	0.2	0.04	4	No	29	0.08386	55.17	None	No	0.01	NP (NDs)
Fluoride, total (mg/L)	B-2	0.2	0.08	4	No	29	0.05954	44.83	None	No	0.01	NP (normality)
Fluoride, total (mg/L)	B-6	0.2	0.03	4	No	30	0.08745	56.67	None	No	0.01	NP (NDs)
Fluoride, total (mg/L)	B-9	0.2	0.07	4	No	30	0.08016	33.33	None	No	0.01	NP (normality)
Lead, total (mg/L)	B-10	0.0003983	0.0001431	0.015	No	29	0.0005346	37.93	Kaplan-Meier	ln(x)	0.01	Param.
Lead, total (mg/L)	B-11	0.00083	0.00016	0.015	No	27	0.00208	44.44	None	No	0.01	NP (normality)
Lead, total (mg/L)	B-2	0.00051	0.0001	0.015	No	28	0.002514	28.57	None	No	0.01	NP (normality)
Lead, total (mg/L)	B-6	0.001086	0.0003216	0.015	No	29	0.001069	3.448	None	sqrt(x)	0.01	Param.
Lead, total (mg/L)	B-9	0.0002	0.00013	0.015	No	29	0.0002458	48.28	None	No	0.01	NP (normality)
Lithium, total (mg/L)	B-10	0.003	0.00144	0.041	No	28	0.00311	0	None	No	0.01	NP (normality)
Lithium, total (mg/L)	B-11	0.004105	0.001649	0.041	No	27	0.006875	0	None	ln(x)	0.01	Param.
Lithium, total (mg/L)	B-2	0.00287	0.00103	0.041	No	28	0.006495	0	None	No	0.01	NP (normality)
Lithium, total (mg/L)	B-6	0.002	0.000407	0.041	No	27	0.001127	0	None	No	0.01	NP (normality)
Lithium, total (mg/L)	B-9	0.00356	0.0028	0.041	No	28	0.00271	0	None	No	0.01	NP (normality)
Mercury, total (mg/L)	B-10	0.000005	0.000005	0.002	No	29	0.000004767	75.86	None	No	0.01	NP (NDs)
Mercury, total (mg/L)	B-11	0.00002442	0.000005	0.002	No	28	0.00001787	85.71	None	No	0.01	NP (NDs)
Mercury, total (mg/L)	B-2	0.000005	0.000005	0.002	No	29	0.000009562	75.86	None	No	0.01	NP (NDs)
Mercury, total (mg/L)	B-6	0.000007	0.000005	0.002	No	29	0.000002547	62.07	None	No	0.01	NP (NDs)
Mercury, total (mg/L)	B-9	0.00000774	0.000005	0.002	No	29	0.000002451	89.66	None	No	0.01	NP (NDs)
Molybdenum, total (mg/L)	B-10	0.001678	0.000841	0.1	No	29	0.001984	6.897	None	ln(x)	0.01	Param.
Molybdenum, total (mg/L)	B-11	0.00059	0.0003706	0.1	No	28	0.0005917	78.57	None	No	0.01	NP (NDs)
Molybdenum, total (mg/L)	B-2	0.00201	0.00093	0.1	No	29	0.001545	6.897	None	x^(1/3)	0.01	Param.
Molybdenum, total (mg/L)	B-6	0.002	0.0003287	0.1	No	29	0.0007956	34.48	None	No	0.01	NP (normality)
Molybdenum, total (mg/L)	B-9	0.002	0.0004	0.1	No	29	0.006518	51.72	None	No	0.01	NP (NDs)
Selenium, total (mg/L)	B-10	0.005	0.00041	0.05	No	29	0.002251	37.93	None	No	0.01	NP (normality)
Selenium, total (mg/L)	B-11	0.002871	0.002228	0.05	No	28	0.0006877	14.29	None	No	0.01	Param.
Selenium, total (mg/L)	B-2	0.01561	0.00753	0.05	No	29	0.01768	0	None	ln(x)	0.01	Param.

Confidence Intervals Summary Table - All Results (No Significant)

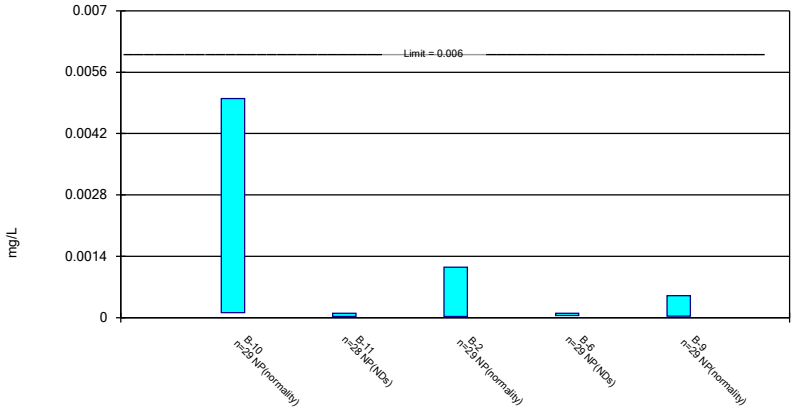
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 7/31/2024, 1:47 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Selenium, total (mg/L)	B-6	0.002568	0.001683	0.05	No	29	0.000966	3.448	None	No	0.01	Param.
Selenium, total (mg/L)	B-9	0.001	0.0004	0.05	No	29	0.0002931	41.38	None	No	0.01	NP (normality)
Thallium, total (mg/L)	B-10	0.0002	0.00004	0.002	No	29	0.0002281	82.76	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	B-11	0.0002	0.00003	0.002	No	28	0.0001678	82.14	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	B-2	0.0002	0.000066	0.002	No	29	0.0002137	65.52	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	B-6	0.00116	0.00003	0.002	No	29	0.0002761	86.21	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	B-9	0.001044	0.00004	0.002	No	29	0.0002953	82.76	None	No	0.01	NP (NDs)

Sanitas™ v.10.0.17a . UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

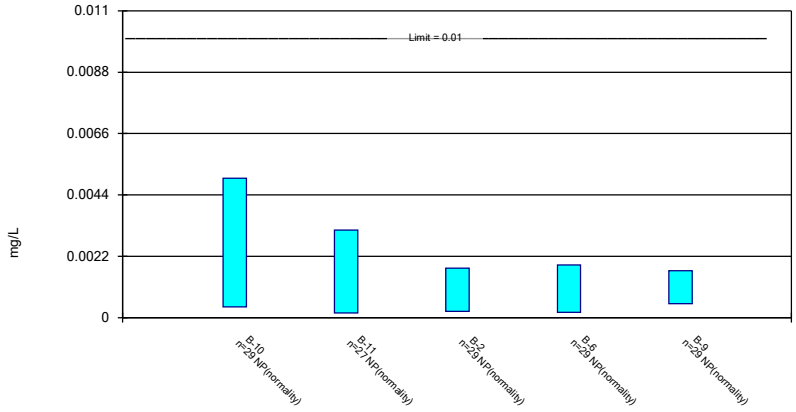


Constituent: Antimony, total Analysis Run 7/31/2024 1:33 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

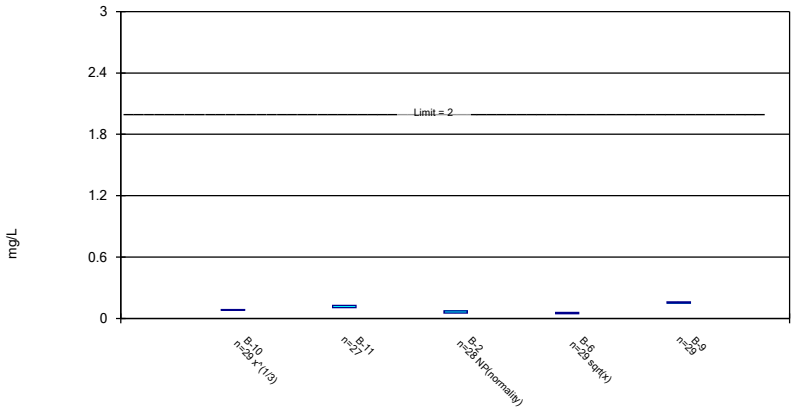


Constituent: Arsenic, total Analysis Run 7/31/2024 1:33 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

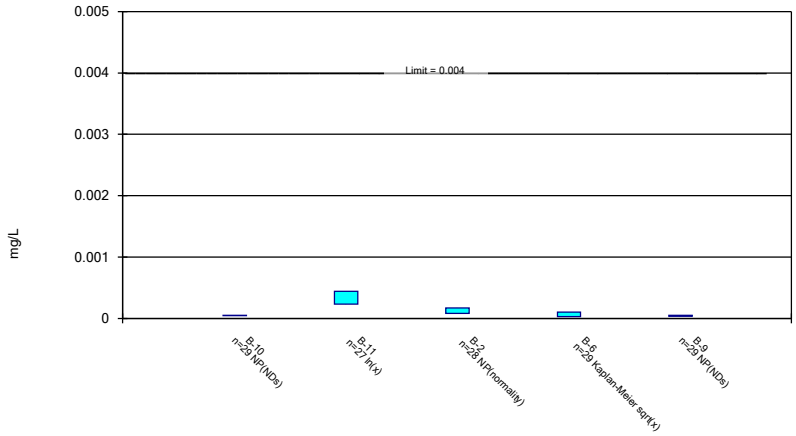


Constituent: Barium, total Analysis Run 7/31/2024 1:33 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

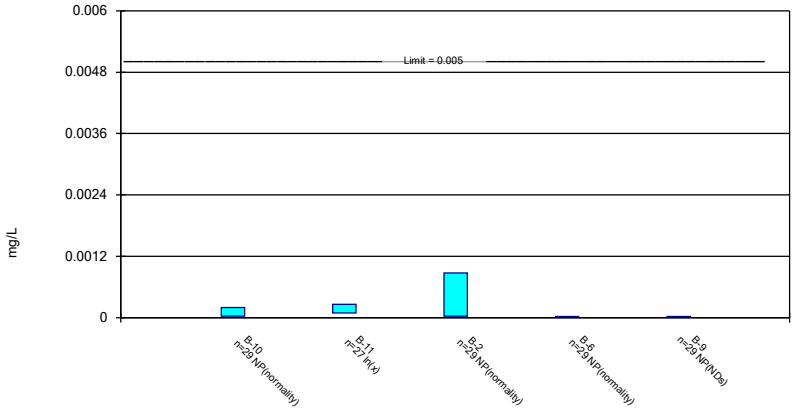


Constituent: Beryllium, total Analysis Run 7/31/2024 1:33 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

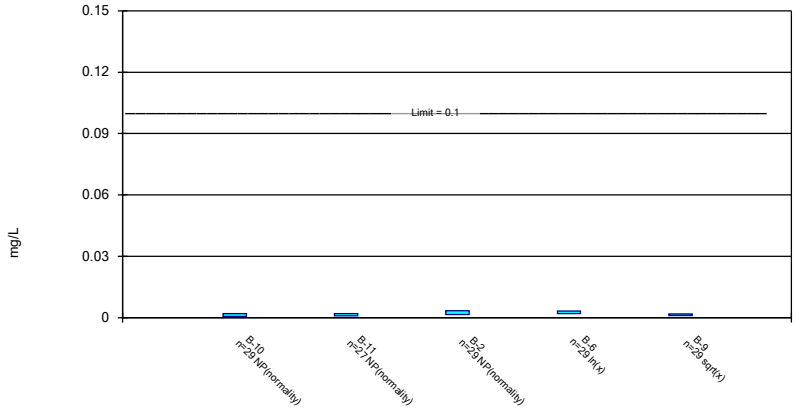


Constituent: Cadmium, total Analysis Run 7/31/2024 1:33 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

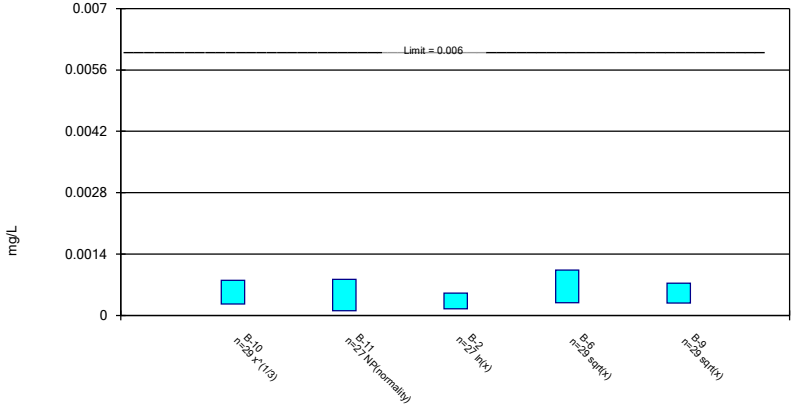


Constituent: Chromium, total Analysis Run 7/31/2024 1:33 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

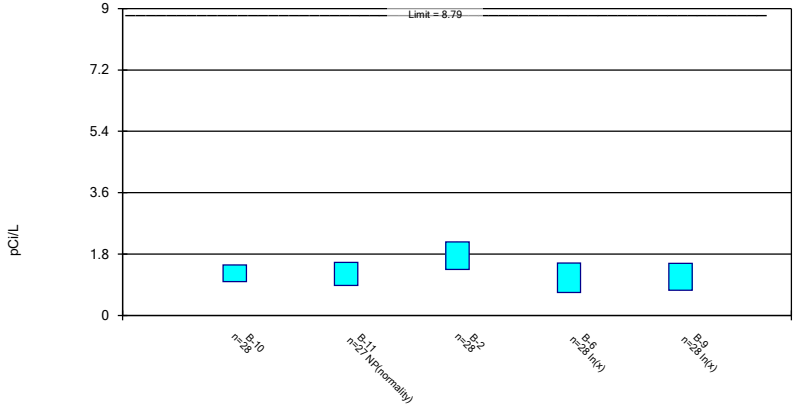


Constituent: Cobalt, total Analysis Run 7/31/2024 1:33 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

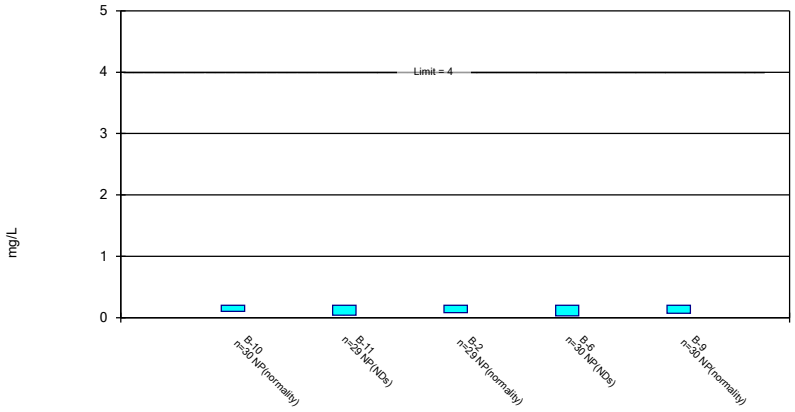


Constituent: Combined Radium 226 + 228 Analysis Run 7/31/2024 1:33 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

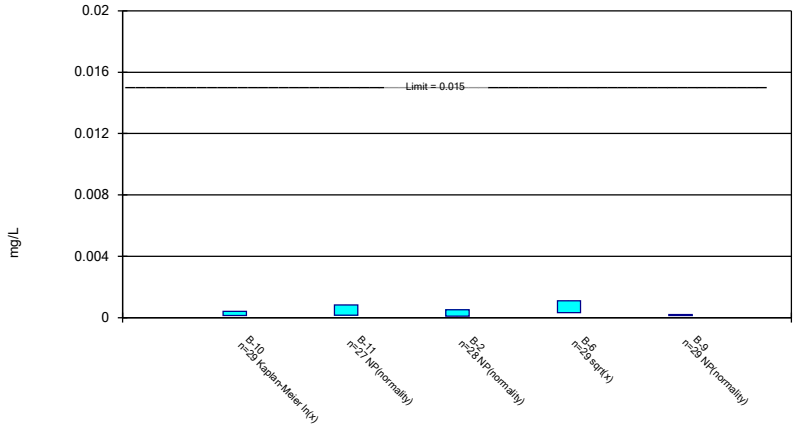


Constituent: Fluoride, total Analysis Run 7/31/2024 1:33 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

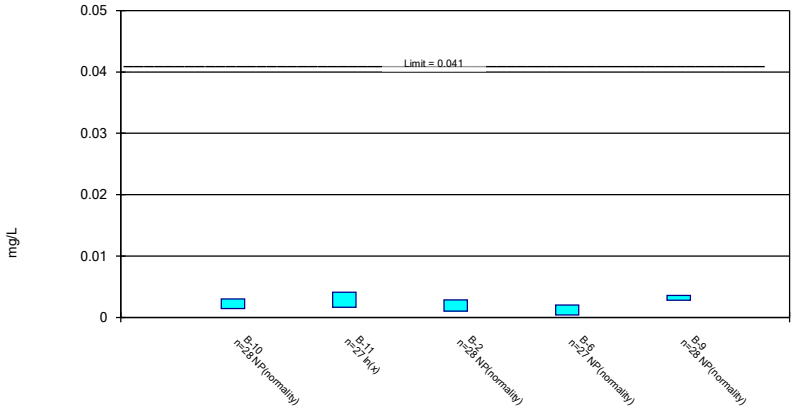


Constituent: Lead, total Analysis Run 7/31/2024 1:33 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

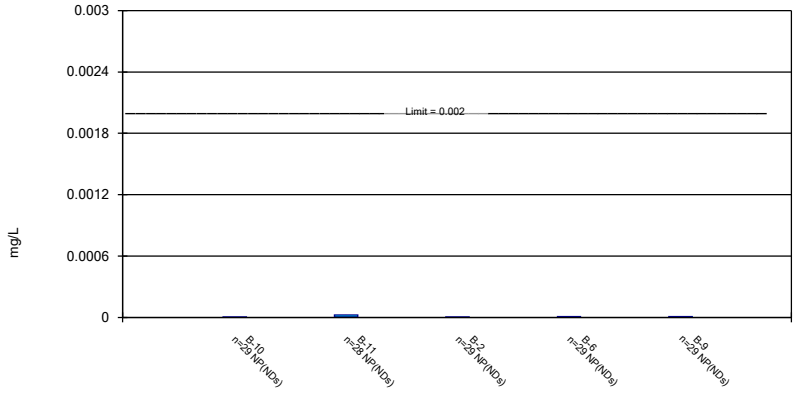


Constituent: Lithium, total Analysis Run 7/31/2024 1:33 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

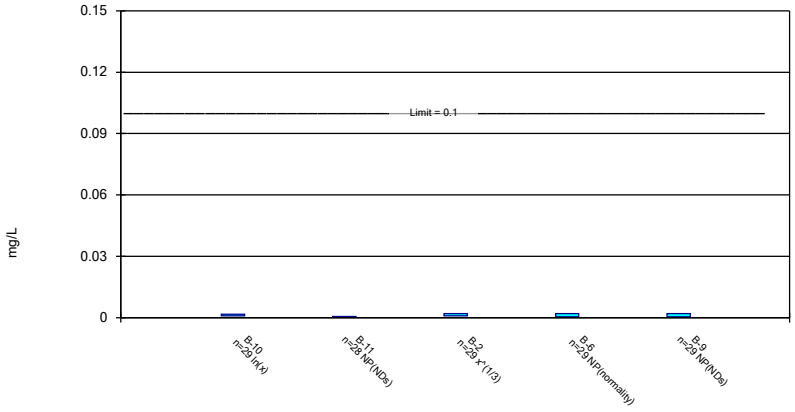


Constituent: Mercury, total Analysis Run 7/31/2024 1:33 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

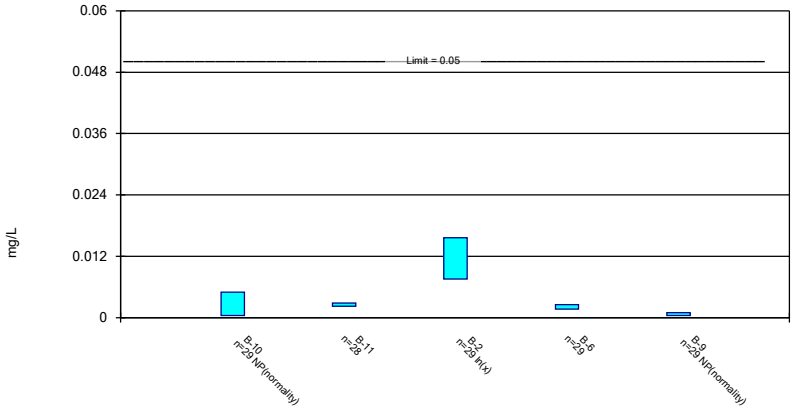


Constituent: Molybdenum, total Analysis Run 7/31/2024 1:33 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

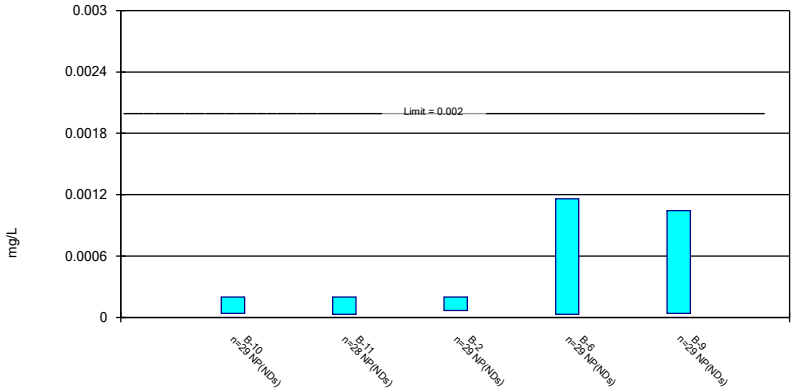


Constituent: Selenium, total Analysis Run 7/31/2024 1:33 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.17a . UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium, total Analysis Run 7/31/2024 1:33 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Geosyntec consultants

engineers | scientists | innovators

STATISTICAL ANALYSIS SUMMARY, 2024 2ND SEMIANNUAL EVENT

LANDFILL

Flint Creek Plant

Gentry, Arkansas

Prepared for

American Electric Power
1 Riverside Plaza
Columbus, Ohio 43215-2372

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Project Number: CHA8500B

December 10, 2024

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Table 3: Appendix III Data Summary

LIST OF ATTACHMENTS

Attachment A: Certification by Qualified Professional Engineer

Attachment B: Statistical Analysis Output

ACRONYMS AND ABBREVIATIONS

CCR	coal combustion residuals
CFR	Code of Federal Regulations
GWPS	groundwater protection standard
LPL	lower prediction limit
mg/L	milligrams per liter
PQL	practical quantitation limit
QA/QC	quality assurance and quality control
SSI	statistically significant increase
SSL	statistically significant level
TDS	total dissolved solids
UPL	upper prediction limit

1. INTRODUCTION

In accordance with United States Environmental Protection Agency regulations regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (Code of Federal Regulations [CFR] Title 40, Section 257, Subpart D), groundwater monitoring has been conducted at the Landfill, an existing CCR unit at the Flint Creek Power Plant in Gentry, Arkansas. Recent groundwater monitoring results were used to identify concentrations of Appendix IV constituents that may be above site-specific groundwater protection standards (GWPSs).

Based on detection monitoring conducted in 2017 and 2018, statistically significant increases (SSIs) over background were concluded for boron at the Landfill (Geosyntec 2018). An alternative source was not identified following the detection monitoring event, so the Landfill has been in assessment monitoring since 2018. A semiannual sampling event for Appendix III parameters and Appendix IV parameters, as required by 40 CFR 257.95(d)(1), was completed in August 2024. The results of the August 2024 assessment sampling event are documented in this report.

Before the statistical analyses were conducted, the groundwater data underwent several validation tests, including those for completeness, sample tracking accuracy, transcription errors, and consistent use of measurement units. No data quality issues that would impact data usability were identified.

The monitoring data were submitted to Groundwater Stats Consulting, LLC for statistical analysis. GWPSs were reestablished for the Appendix IV parameters following calculation of site-specific background values. Confidence intervals were calculated from the Appendix IV parameter data at the compliance wells to assess whether any were present at statistically significant levels (SSLs) above the corresponding GWPS. No SSLs were identified; however, concentrations of Appendix III parameters remained above background. Therefore, the unit will remain in assessment monitoring. Certification of the selected statistical methods by a qualified professional engineer is documented in Attachment A.

2. LANDFILL EVALUATION

2.1 Data Validation and QA/QC

One set of samples was collected for analysis from each upgradient and downgradient well to meet the requirements of 40 CFR 257.95(d)(1) in August 2024 as part of the assessment monitoring program. Samples from the August 2024 sampling event were analyzed for all Appendix IV and Appendix III parameters. A summary of data collected during this assessment monitoring event is presented in Table 1.

Chemical analysis was completed by a National Environmental Laboratory Accreditation Program–certified analytical laboratory. The laboratory completed analysis of quality assurance and quality control (QA/QC) samples such as laboratory reagent blanks, continuing calibration verification samples, and laboratory fortified blanks.

The analytical data were imported into a Microsoft Access database, where checks were completed to assess the accuracy of sample location identification and analyte identification. Where necessary, unit conversions were applied to standardize reported units across all sampling events. Exported data files were created for use with the Sanitas v.10.0.23 statistics software. The export file was checked against the analytical data for transcription errors and completeness. No QA/QC issues that would impact data usability were noted.

2.2 Statistical Analysis

Statistical analyses for the Landfill were conducted in accordance with the October 2020 *Statistical Analysis Plan* (Geosyntec 2020). Time series plots and results for all completed statistical tests are provided in Attachment B.

The data obtained in August 2024 were screened for potential outliers. No outliers were identified in the data (Attachment B).

2.2.1 Establishment of GWPSs

A GWPS was established for each Appendix IV parameter in accordance with 40 CFR 257.95(h) and the Statistical Analysis Plan (Geosyntec 2020). The established GWPS was determined to be the greater value of the background concentration and either the maximum contaminant level or risk-based level specified in 40 CFR 257.95(h)(2) for each Appendix IV parameter. To determine background concentrations, an upper tolerance limit was calculated using pooled data from the background wells collected during the background monitoring and assessment monitoring events. GWPSs were previously established in January 2024 (Geosyntec 2024). This evaluation incorporated data from the March, April, and August 2024 assessment monitoring events.

Nonparametric tolerance limits were calculated for arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium, fluoride, lead, lithium, and selenium due to apparent non-normal distributions. Nonparametric tolerance limits were calculated for antimony, mercury, molybdenum, and thallium because greater than 50% of the data was composed of nondetect results. Upper tolerance limits and the final GWPSs are summarized in Table 2.

2.2.2 Evaluation of Potential Appendix IV SSLs

A confidence interval was constructed for each Appendix IV parameter at each compliance well. Confidence limits were generally calculated parametrically ($\alpha = 0.01$); however, nonparametric confidence limits were calculated in some cases (e.g., when the data were not normally distributed or when the nondetect frequency was too high). An SSL was concluded if the lower confidence limit was above the GWPS (i.e., if the entire confidence interval was above the GWPS). The calculated confidence limits (Attachment B) were compared to the GWPSs provided in Table 2.

No SSLs were identified at the Landfill.

2.2.3 Updating Appendix III Prediction Limits

Upper prediction limits (UPLs) were originally established for all Appendix III parameters following the background monitoring period (Geosyntec 2018). Intrawell tests were used to evaluate potential SSIs for calcium, chloride, fluoride, pH, sulfate, and total dissolved solids (TDS), whereas an interwell test was used to evaluate potential SSIs for boron. Prediction limits have been updated periodically during the assessment monitoring period as sufficient data became available.

For intrawell tests, insufficient data was available to compare against the existing background dataset, and so the prediction limits were not updated for the intrawell tests at this time. The intrawell prediction limits were previously calculated using historical data through June 2023 (Geosyntec 2024). The established intrawell prediction limits were used to evaluate potential SSIs for calcium, chloride, fluoride, pH, sulfate, and TDS.

Prediction limits for the interwell tests were recalculated using data collected during the 2024 assessment monitoring events. New upgradient well data were tested for outliers prior to being added to the background dataset. Upgradient well data were also evaluated for statistically significant trends using the Sen's Slope/Mann-Kendall trend test, and the results are included in Attachment B. The revised interwell prediction limits were used to evaluate potential SSIs for boron.

After the revised boron background set was established, a nonparametric analysis was selected based on the distribution of the data. Estimated results less than the reporting limit (practical quantitation limit, [PQL]) but above the method detection limit – i.e., "J-flagged" data – were considered detections and the estimated results were used in the statistical analyses. A nonparametric analyses was selected because the dataset could not be normalized by transformation. The selected nonparametric analysis for the boron dataset is shown in Attachment B.

The interwell UPL for boron was updated using all historical data through August 2024 to represent the background value. The updated interwell prediction limit for boron and intrawell prediction limits for calcium, chloride, fluoride, pH, sulfate, and TDS are summarized in Table 3. The UPLs were calculated for a one-of-two retesting procedure; i.e., if at least one sample in a series of two does not exceed the UPL, or in the case of pH, is neither less than the lower prediction limit (LPL) nor greater than the UPL, then it can be concluded that an SSI has not occurred. In practice, where the initial result does not exceed the UPL, or in the case of pH, is neither less than the LPL nor greater than the UPL, a second sample will not be collected. The retesting procedures

allow achieving an acceptably high statistical power to detect changes at downgradient wells for constituents evaluated using intrawell prediction limits.

2.2.4 Evaluation of Potential Appendix III SSIs

The Appendix III results were analyzed to assess whether concentrations of Appendix III parameters at the compliance wells were above background concentrations. Data collected during the August 2024 assessment monitoring event from each compliance well were compared to updated prediction limits to assess whether the results were statistically above background limits. The results from these events and the prediction limits are summarized in Table 3. The following exceedances of the UPLs were noted:

- Boron concentrations were above the interwell UPL of 0.107 milligrams per liter (mg/L) at B-2 (0.349 mg/L) and at B-11 (0.331 mg/L).
- Chloride concentrations were above the intrawell UPL of 7.78 mg/L at B-9 (8.44 mg/L) and the intrawell UPL of 9.82 mg/L at B-11 (20.0 mg/L).

While the prediction limits were calculated for a one-of-two retesting procedure, SSIs were conservatively assumed if the August 2024 sample was above the UPL or, in the case of pH, below the LPL. Based on this evaluation, concentrations of Appendix III constituents appear to be above background concentrations, and the unit will remain in assessment monitoring.

2.3 Conclusions

A semiannual assessment monitoring event was conducted in accordance with the CCR Rule. The laboratory and field data were reviewed prior to statistical analysis, with no QA/QC issues identified that prevented data usage. A review of outliers identified no potential outliers in the August 2024 data. GWPSs were re-established for the Appendix IV parameters. A confidence interval was constructed at each compliance well for each Appendix IV parameter; SSLs were concluded if the entire confidence interval was above the GWPSs. No SSLs were identified. Appendix III parameters were compared to updated prediction limits; concentrations of boron and chloride were identified above the prediction limits.

Based on this evaluation, the Landfill CCR unit will remain in assessment monitoring.

3. REFERENCES

Geosyntec. 2018. *Statistical Analysis Summary – Landfill, Flint Creek Plant, Gentry, Arkansas.* Geosyntec Consultants, Inc. January.

Geosyntec. 2020. *Statistical Analysis Plan – Flint Creek Plant*. Geosyntec Consultants, Inc. October.

Geosyntec. 2024. *Statistical Analysis Summary – Landfill, Flint Creek Plant, Gentry, Arkansas*. Geosyntec Consultants, Inc. January.

TABLES

Table 1. Groundwater Data Summary
Statistical Analysis Summary
Flint Creek Plant – Landfill

Parameter	Unit	B-1B		B-2		B-4	B-5	B-6	B-7A	B-9	B-10		B-11		B-12	B-13
		8/19/2024	8/20/2024	8/19/2024	8/26/2024	8/19/2024	8/20/2024	8/19/2024	8/19/2024	8/20/2024	8/19/2024	8/20/2024	8/20/2024	8/26/2024	8/19/2024	8/20/2024
Antimony	µg/L	--	0.1 U1	0.014 J1	--	0.1 U1	0.009 J1	0.015 J1	0.012 J1	0.024 J1	--	0.213	0.1 U1	--	0.042 J1	0.010 J1
Arsenic	µg/L	--	0.09 J1	0.25	--	0.05 J1	0.43	0.19	8.01	0.37	--	0.37	0.17	--	0.09 J1	0.07 J1
Barium	µg/L	--	114	69.8	--	50.2	18.9	38.3	54.3	185	--	88.2	106	--	58.7	48.9
Beryllium	µg/L	--	0.016 J1	0.045 J1	--	0.114	0.439	0.018 J1	0.010 J1	0.05 U1	--	0.010 J1	0.247	--	0.05 U1	0.053
Boron	mg/L	--	0.013 J1	0.349	--	0.032 J1	0.011 J1	0.026 J1	0.012 J1	0.017 J1	--	0.05 U1	0.331	--	0.014 J1	0.018 J1
Cadmium	µg/L	--	0.02 U1	0.028	--	0.034	0.153	0.011 J1	0.007 J1	0.02 U1	--	0.030	0.089	--	0.017 J1	0.032
Calcium	mg/L	--	84.8	40.3	--	24.6	14.6	34.1	99.2	88.2	--	76.1	16.1	--	61.4	15.6
Chloride	mg/L	--	2.07	4.11	--	4.88	9.04	6.38	2.90	8.44	--	10.9	20.0	--	8.72	3.13
Chromium	µg/L	--	0.21 J1	1.61	--	0.83	2.46	2.06	0.37	0.58	--	1.29	0.92	--	0.99	0.70
Cobalt	µg/L	--	0.010 J1	0.063	--	0.024	0.222	0.129	0.405	0.037	--	0.284	0.094	--	3.34	0.074
Combined Radium	pCi/L	--	5.73	1.51	--	0.6	2.33	2.36	4.21	3.77	--	1.91	1.04	--	0.75	1.2
Fluoride	mg/L	--	0.33	0.09	--	0.06 U1	0.05 J1	0.06 U1	0.15	0.06	--	0.08	0.02 J1	--	0.04 J1	0.06 U1
Lead	µg/L	--	0.38	0.2 U1	--	0.2 U1	0.14 J1	0.17 J1	0.08 J1	0.2 U1	--	0.27	0.06 J1	--	0.2 U1	0.08 J1
Lithium	mg/L	--	0.0244	0.00105	--	0.00086	0.00227	0.00045	0.0137	0.00285	--	0.00143	0.00169	--	0.00079	0.00062
Mercury	µg/L	--	0.005 U1	--	0.005 U1	0.005 U1	0.004 J1	0.005 U1	0.002 J1	0.005 U1	--	0.005 U1	--	0.005 U1	0.005 U1	0.005 U1
Molybdenum	µg/L	--	0.3 J1	1.4	--	0.5 U1	0.5 U1	0.2 J1	0.4 J1	0.3 J1	--	0.7	0.5 U1	--	0.4 J1	0.1 J1
Selenium	µg/L	--	0.5 U1	7.42	--	0.32 J1	34.1	1.14	0.5 U1	0.45 J1	--	0.57	2.24	--	0.17 J1	0.41 J1
Sulfate	mg/L	--	9.7	75.9	--	4.7	239	11.8	31.9	41.8	--	27.0	38.3	--	7.3	14.2
Thallium	µg/L	--	0.2 U1	0.05 J1	--	0.2 U1	0.04 J1	0.2 U1	0.2 U1	0.2 U1	--	0.2 U1	0.02 J1	--	0.2 U1	0.2 U1
Total Dissolved Solids	mg/L	--	270	270	--	110	400	160	310	300	--	270	130	--	200	80
pH	SU	7.3	--	5.5	--	6.8	5.2	6.1	7.5	6.9	6.4	--	5.6	--	6.8	5.5

Notes:
--: not sampled
J1: estimated value. Parameter was detected in concentrations below the reporting limit.
mg/L: milligrams per liter
pCi/L: picocuries per liter
SU: standard unit
U1: non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
µg/L: micrograms per liter

Table 2. Appendix IV Groundwater Protection Standards
Statistical Analysis Summary
Flint Creek Plant – Landfill

Constituent Name	MCL	CCR Rule-Specified	Calculated UTL	GWPS
Antimony, Total (mg/L)	0.00600		0.00452	0.00600
Arsenic, Total (mg/L)	0.0100		0.00983	0.0100
Barium, Total (mg/L)	2.00		0.131	2.00
Beryllium, Total (mg/L)	0.00400		0.00100	0.00400
Cadmium, Total (mg/L)	0.00500		0.00100	0.00500
Chromium, Total (mg/L)	0.100		0.00600	0.100
Cobalt, Total (mg/L)	n/a	0.00600	0.00350	0.00600
Combined Radium, Total (pCi/L)	5.00		8.79	8.79
Fluoride, Total (mg/L)	4.00		0.596	4.00
Lead, Total (mg/L)	n/a	0.0150	0.00389	0.0150
Lithium, Total (mg/L)	n/a	0.0400	0.0410	0.0410
Mercury, Total (mg/L)	0.00200		0.0000960	0.00200
Molybdenum, Total (mg/L)	n/a	0.100	0.00466	0.100
Selenium, Total (mg/L)	0.0500		0.0392	0.0500
Thallium, Total (mg/L)	0.00200		0.00199	0.00200

Notes:
1. Calculated UTL (upper tolerance limit) represents site-specific background values.
2. Gray cells indicate the GWPS is based upon calculated UTL, which is higher than the MCL or CCR Rule-Specified value.
CCR: coal combustion residuals
GWPS: groundwater protection standard
MCL: maximum contaminant level
mg/L: milligrams per liter
n/a: not applicable
pCi/L: picocuries per liter

Table 3. Appendix III Data Summary
Statistical Analysis Summary
Flint Creek Plant – Landfill

Geosyntec Consultants, Inc.

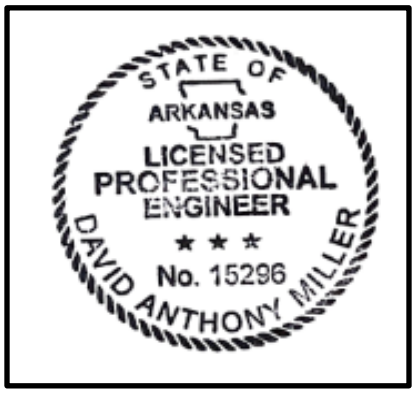
Analyte	Unit	Description	B-2	B-6	B-9	B-10*	B-11
			8/19/2024	8/19/2024	8/20/2024	8/20/2024	8/20/2024
Boron	mg/L	Interwell Background Value (UPL)	0.107				
		Analytical Result	**0.349**	0.026	0.017	0.007	**0.331**
Calcium	mg/L	Intrawell Background Value (UPL)	50.4	58.5	130	116	19.8
		Analytical Result	40.3	34.1	88.2	76.1	16.1
Chloride	mg/L	Intrawell Background Value (UPL)	8.88	8.70	7.78	12.4	9.82
		Analytical Result	4.11	6.38	**8.44**	10.9	**20.0**
Fluoride	mg/L	Intrawell Background Value (UPL)	0.200	0.207	0.356	0.330	0.200
		Analytical Result	0.09	0.02	0.06	0.08	0.02
pH	SU	Intrawell Background Value (UPL)	6.9	7.3	8.1	8.3	6.9
		Intrawell Background Value (LPL)	5.1	5.9	6.3	6.1	5.0
		Analytical Result	5.5	6.1	6.9	6.4	5.6
Sulfate	mg/L	Intrawell Background Value (UPL)	195	42.9	44.5	35.8	62.6
		Analytical Result	75.9	11.8	41.8	27.0	38.3
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	522	271	315	301	190
		Analytical Result	270	160	300	270	130

Notes:
1. Bold values exceed the background value.
2. Background values are shaded gray.
*: pH measured on 8/19/2024. Well purged dry and sampled the following day.
LPL: lower prediction limit
mg/L: milligrams per liter
SU: standard units
UPL: upper prediction limit

ATTACHMENT A
Certification by Qualified Professional Engineer

Certification by Qualified Professional Engineer

I certify that selected and above described statistical method is appropriate for evaluating the groundwater monitoring data for the Flint Creek Landfill CCR management area and that the requirements of 40 CFR 257.93(f) have been met.



David Anthony Miller

Printed Name of Licensed Professional Engineer

David Anthony Miller

Signature

15296	Arkansas	12.12.2024
License Number	Licensing State	Date

ATTACHMENT B
Statistical Analysis Output

GROUNDWATER STATS CONSULTING

November 5, 2024

Geosyntec Consultants
Attn: Ms. Allison Kreinberg
500 W. Wilson Bridge Road, Suite 250
Worthington, OH 43085

Re: Flint Creek Landfill – Background Update & Assessment Monitoring 2024

Dear Ms. Kreinberg,

Groundwater Stats Consulting (GSC), formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the background update and statistical analysis of August 2024 groundwater data for American Electric Power Inc.'s Flint Creek Landfill. The analysis complies with the federal rule for the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities (CCR Rule, 2015) as well as with the United States Environmental Protection Agency (USEPA) Unified Guidance (2009).

Sampling began at the site for the CCR program in 2016. The monitoring well network, as provided by Geosyntec Consultants, consists of the following:

- **Upgradient wells:** B-1B, B-4, B-5, B-7A, B-12, and B-13
- **Downgradient wells:** B-2, B-6, B-9, B-10, and B-11

Data were sent electronically, and the analysis was reviewed by Dr. Jim Loftis, Civil & Environmental Engineering professor emeritus at Colorado State University and Senior Advisor to Groundwater Stats Consulting. The statistical analysis was conducted according to the Statistical Analysis Plan and screening evaluation prepared by GSC and approved by Dr. Kirk Cameron, PhD Statistician with MacStat Consulting, primary author of the USEPA Unified Guidance, and Senior Advisor to GSC.

The CCR program consists of the following constituents listed below. The terms "constituent" and "parameter" are interchangeable.

- **Appendix III** (Detection Monitoring) **-** boron, calcium, chloride, fluoride, pH, sulfate, and TDS
- **Appendix IV** (Assessment Monitoring) **–** antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium 226 + 228, fluoride, lead, lithium, mercury, molybdenum, selenium, and thallium

Note that Appendix III parameters were not sampled during the March 2024 event. All wells and all constituents were sampled during the August 2024 event.

Time series plots and box plots for Appendix III and IV parameters are provided for all wells (Figures A and B, respectively). Values which have been flagged as outliers may be seen in a lighter font and as a disconnected symbol on the time series plots. A summary of flagged values follows this letter (Figure C). The time series plots are used to evaluate concentrations over time and between wells, to initially screen for suspected outliers and trends, while the box plots provide visual representation of variation within individual wells and between wells.

For regulatory comparison of current observations against statistical limits for Appendix III constituents, the annual site-wide false positive rate is based on the USEPA Unified Guidance (2009) recommendation of 10% (5% for each semi-annual sample event). Power curves were included with the previous screening report and demonstrated that the selected statistical method provides sufficient power to detect a change at any of the downgradient wells which complies with the USEPA Unified Guidance recommendation. The EPA suggests the selected statistical method should provide at least 55% power at 3 standard deviations or at least 80% power at 4 standard deviations. Power curves were based on the following:

Semi-Annual Sampling
1-of-2 resample plan
Constituents, c=7
Downgradient wells, w=5

Summary of Statistical Methods – Appendix III Parameters:

1) Intrawell prediction limits, combined with a 1-of-2 resample plan for calcium, chloride, fluoride, pH, sulfate, and TDS

2) Interwell prediction limits, combined with a 1-of-2 resample plan for boron

Parametric prediction limits are utilized when the screened historical data follow a normal or transformed-normal distribution. When data cannot be normalized or the majority of data are non-detects, a nonparametric test is utilized. While the annual false positive rate associated with parametric limits is fixed at 10% as recommended by the EPA Unified Guidance (2009), the false positive rate associated with nonparametric limits is not fixed and depends upon the available background sample size, number of future comparisons, and verification resample plan. The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (US EPA, 2009), data are analyzed using either parametric or non-parametric prediction limits as appropriate. Non-detects are handled as follows:

- No statistical analyses are required on wells and analytes containing 100% non-detects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% non-detects, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for non-detects is the most recent practical quantification limit (PQL) as reported by the laboratory.
- When data contain between 15-50% non-detects, the Kaplan-Meier non-detect adjustment is applied to the background data for parametric limits. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric prediction limits are used on data containing greater than 50% non-detects.

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits is necessary to accommodate these types of changes. In the intrawell case, data for all wells and constituents may be re-evaluated when a minimum of 4 new data points are available to determine whether earlier concentrations are representative of present-day groundwater quality. In the interwell case, prediction limits may be updated with upgradient well data following each sampling event after screening for any new outliers. In some cases, deselecting the earlier portion of data may be necessary prior to construction of limits so that resulting statistical limits are capable of rapidly detecting changes in groundwater quality. Even though the data are excluded from the calculation, the values will continue to be reported and shown in tables and graphs.

Summary of Background Screening Conducted in November 2017

Interwell prediction limits combined with a 1-of-2 verification strategy were recommended for boron; and intrawell prediction limits combined with a 1-of-2 verification strategy were recommended for calcium, chloride, fluoride, pH, sulfate, and TDS. All proposed background data were screened for outliers and trends during the background screening. The findings of those reports were submitted with that analysis. Interwell prediction limits utilize pooled upgradient well data for construction of statistical limits. During each sample event, upgradient well data are screened for any newly suspected outliers or obvious trending patterns using time series plots. Intrawell prediction limits utilize historical data within a given well for comparison of compliance data from the same well. As recommended in the EPA Unified Guidance (2009), the background data sets are periodically evaluated for the purpose of updating statistical limits, as described below.

Appendix III Background Update Summaries

Interwell Prediction Limits – Conducted in November 2024

Outlier Analysis

Prior to updating the interwell prediction limit for boron, pooled upgradient well data were evaluated for outliers using Tukey's outlier test and visual screening on data through August 2024.

Tukey's outlier test on pooled upgradient well data identified high values for boron; however, those values were all reported at similar concentrations and were not dramatically higher than the remaining observations. Therefore, no values were flagged in upgradient wells for boron based on Tukey's outlier test or visual screening. Tukey's outlier test results for all Appendix III parameters are shown in Figure C. A list of flagged outliers follows this report.

Interwell – Trend Test Evaluation

For boron, which is tested using interwell prediction limits, the Sen's Slope/Mann-Kendall trend test was used to test data through August 2024 in upgradient wells to determine whether concentrations are statistically increasing, decreasing or stable at the 99% confidence level. No statistically significant trends were identified; therefore, all data from upgradient wells were used to construct interwell prediction limits for boron. As more

data are collected, all upgradient well data will be re-evaluated for possible deselection of the earlier portion of the record if the measurements no longer represent current background groundwater quality conditions. A summary table of the trend test follows this report (Figure D).

Intrawell Prediction Limits – Conducted in January 2024

For parameters which use intrawell prediction limits (calcium, chloride, fluoride, pH, sulfate, and TDS), values were not re-evaluated for new outliers as these records do not have a minimum of 4 new compliance samples for updating background limits during this evaluation period. A summary of the previous update is provided below.

Outlier Analysis

During the previous update conducted in January 2024 for intrawell prediction limits, Tukey's outlier test did not identify any outliers. However, visual screening confirmed previously flagged values with the exception of a slightly elevated observation for chloride on 10/23/2018 at upgradient well B-4 which was unflagged during the update as the measurement was similar to remaining observations earlier in the record.

Visual screening identified an outlier in more recent data for sulfate at downgradient well B-2. Because this measurement was similar to higher concentrations observed early in the record, earlier data were truncated, and the June 2023 measurement was flagged as an outlier. The resulting intrawell prediction limit represents stable measurements. No additional outliers were flagged during the update. All Appendix III records will be re-evaluated during the Fall 2025 background update.

Intrawell - Mann-Whitney Evaluation

For constituents requiring intrawell prediction limits, the Mann-Whitney (Wilcoxon Rank Sum) test was used to compare the medians of historical data through June 2021 to the new compliance samples through June 2023 at each well to evaluate whether the groups are statistically different at the 99% confidence level. Any records that were truncated during previous updates due to concentrations that were not representative of present-day groundwater quality conditions used curtailed portions of the respective record for comparison with the Mann-Whitney test. Discussions of any truncated records were included in previous background update reports.

When no statistically significant difference is found, background data may be updated with compliance data. Statistically significant differences (either an increase or decrease in median concentrations) were found between the two groups for the following well/constituent pairs:

Increase:

- Chloride: B-10
- Sulfate: B-5 (upgradient) and B-9

Decrease:

- Calcium: B-12, B-1B, and B-5 (all upgradient)
- Fluoride: B-12, B-5, and B-7A (all upgradient), B-10, B-2, and B-9
- pH: B-6

Typically, when the test concludes that the medians of the two groups are statistically significantly different, particularly in the downgradient wells, the background data are not updated to include the newer data, unless it can be reasonably justified that the change in concentrations reflects a naturally occurring shift unrelated to practices at the site. In studies such as the current one, in which at least one of the segments being compared is of short duration, the comparison is complicated by the fact that normal short-term variation may be mistaken for long-term change in medians.

Regarding well/constituent pairs with statistically significant increases in medians, the record for chloride at B-10 was updated since compliance measurements were within the range of background concentrations. For sulfate in upgradient well B-5 and downgradient well B-9, more recent reported concentrations appear to have stabilized; therefore, earlier portions of the records were truncated in order to construct intrawell prediction limits representative of present-day groundwater quality conditions. Although not significant at the 99% confidence level, the median compliance concentration for calcium at upgradient well B-4 was identified as significantly different at the 98% confidence level by the Mann-Whitney test when compared to the median concentration of background data used for constructing statistical limits. Since these concentrations represent groundwater quality upgradient of the facility and current compliance data are similar to historical data that were previously truncated in this record, this well/constituent pair was updated through June 2023, and earlier measurements were reintroduced for the purpose of constructing an intrawell prediction limit.

For well/constituent pairs with statistically significant decreases in medians, the group of more recent reported concentrations for calcium at upgradient wells B-12, B-1B, and B-5 and pH at downgradient well B-6 were within the range of historic observations.

Additionally, the statistically significant decrease in medians identified by the Mann-Whitney test for the following well/constituent pairs was a result of historic non-detect values in the earlier portion of the record being compared to more recent trace values or detections lower than the reporting limit in the latter part of the record:

- Fluoride: B-12, B-5, B-7A (all upgradient), B-10, B-2, and B-9

Therefore, background datasets were updated through June 2023 for the above well/constituent pairs in order to construct statistical limits that are representative of present-day groundwater quality.

Appendix III Statistical Limits – August 2024

Prediction Limits

Intrawell limits constructed from carefully screened background data from within each well serve to provide statistical limits that are representative of the background data population, and that will rapidly identify a change in more recent compliance data from within a given well. This statistical method removes the element of variation from across wells and eliminates the chance of mistaking spatial variation for a release from the facility. Intrawell prediction limits are updated when a minimum of 4 compliance samples are available. Intrawell prediction limits for calcium, chloride, fluoride, pH, sulfate, and TDS currently use all historical data through June 2023, unless otherwise noted above, and a summary table of the limits follows this report (Figure E). No comparison of the August 2024 compliance data to statistical limits was performed in this analysis.

Interwell prediction limits, which pool upgradient well data to establish a background limit for an individual constituent, were updated during this analysis after screening for additional outliers and trends. The interwell prediction limit for boron, combined with a 1-of-2 resample plan, was constructed using all pooled upgradient data through August 2024. The summary table follows this letter (Figure F). No comparison of the August 2024 compliance data to statistical limits was performed in this analysis.

In the event of an initial exceedance of compliance well data, the 1-of-2 resample plan allows for collection of one additional sample to determine whether the initial exceedance is confirmed. When the resample confirms the initial exceedance, a statistically significant increase (SSI) is identified, and further research is required to identify the cause of the exceedance (i.e., impact from the site, natural variation, or an off-site source). If a resample

falls within the statistical limit, the initial exceedance is considered to be a false positive result; therefore, no further action is necessary.

Appendix IV Parameters Background Update – Conducted in November 2024

Outlier Analysis

Prior to evaluating Appendix IV parameters, upgradient well data are screened through both visual screening and Tukey's outlier test for potential outliers and extreme trending patterns that would lead to artificially elevated statistical limits. All flagged values may be seen on the Outlier Summary following this letter (Figure C).

Tukey's outlier test identified outliers for barium, chromium, cobalt, combined radium 226 + 228, fluoride, lithium, and selenium when pooled upgradient well data were evaluated; however, many of these values were of similar concentration to one another and thus, were not flagged as outliers. The highest detected value for chromium in well B-12, the two highest detected values for cobalt in well B-12, and the high non-detects for lithium, at the reporting limit of 0.1 mg/L, at several wells during the June 2019 event remain flagged in the database as outliers as they did not appear to represent the population at these wells and do not represent current conditions. No additional values were flagged during this analysis.

For the current analysis, downgradient well data through August 2024 were screened through visual screening using time series graphs. Since the downgradient well data are used to construct confidence intervals, values that are marginally high relative to the rest of the data are retained unless there is particular justification for excluding them. No additional outliers were flagged during this analysis, and no previously flagged outliers were unflagged. Several outliers were flagged during previous analyses for reasons listed below.

Several metals had higher reported concentrations in multiple wells during the September and November 2016 events which appear to be either a laboratory or sampling issue. Therefore, these values were flagged as outliers since they do not represent the population within these wells. Additionally, several reporting limits for the metals are significantly lower beginning in March 2019 than those reported historically. As discussed previously, the reporting limit for lithium during the June 2019 event increased from a historical limit of 0.001 mg/L to 0.1 mg/L. Therefore, the high reporting limit was flagged as an outlier in all applicable wells as it is higher than any reported concentrations for lithium.

Interwell Upper Tolerance Limits

Upper tolerance limits were used to calculate background limits from pooled upgradient well data through August 2024 for Appendix IV parameters (Figure G). For parametric limits a target of 95% confidence and 95% coverage is used. The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples.

Groundwater Protection Standards

These background limits were compared to the Maximum Contaminant Levels (MCLs) and CCR Rule-Specified levels as shown in the Groundwater Protection Standard (GWPS) table following this letter to determine the highest limit for use as the GWPS in the confidence interval comparisons (Figure H).

Evaluation of Appendix IV Parameters – August 2024

Confidence Intervals

Confidence intervals were then constructed on downgradient wells using all data through August 2024 for each of the Appendix IV parameters (Figure I). The Sanitas software was used to calculate the confidence intervals, either parametric or nonparametric, as appropriate. The lower confidence limit, which is constructed with 99% confidence for parametric confidence intervals, is compared to the GWPS prepared as described above. The confidence level associated with nonparametric confidence intervals is dependent upon the number samples available. Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its respective standard. Complete graphical results of the confidence interval analysis follow this letter. No exceedances were identified.

Trend Test Evaluation – Appendix IV

When confidence interval exceedances are identified in downgradient wells, data are further evaluated using the Sen's Slope/Mann Kendall trend test to determine whether concentrations are statistically increasing, decreasing, or stable at the 95% confidence level. Utilizing the 95% confidence level for trend tests readily identifies significant trends and is more sensitive than the 99% confidence level without drastically increasing the false negative rate. Upgradient wells are included in the trend analyses for all parameters found to exceed their confidence interval in downgradient wells. When similar patterns exist upgradient of the site, it is an indication of variability in groundwater which may be

unrelated to practices at the site. Since no exceedances were identified, no trend tests were required.

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for the Flint Creek Landfill. If you have any questions or comments, please feel free to contact us.

For Groundwater Stats Consulting,

Abdul Diane
Groundwater Analyst

Andrew T. Collins
Project Manager

100% Non-Detects

Analysis Run 10/29/2024 1:32 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

No constituent/well pairs were deselected due to 100% NDs. If this is not the expected result, try selecting all nodes before running this operation.

Date Ranges

Date: 10/29/2024 2:33 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Calcium, total (mg/L)
- B-2 background:10/7/2016-6/19/2023

Chloride, total (mg/L)
- B-4 background:3/12/2019-6/19/2023

Sulfate, total (mg/L)
- B-2 background:11/8/2016-6/19/2023
- B-5 background:4/27/2017-6/20/2023
- B-9 background:4/27/2017-6/20/2023

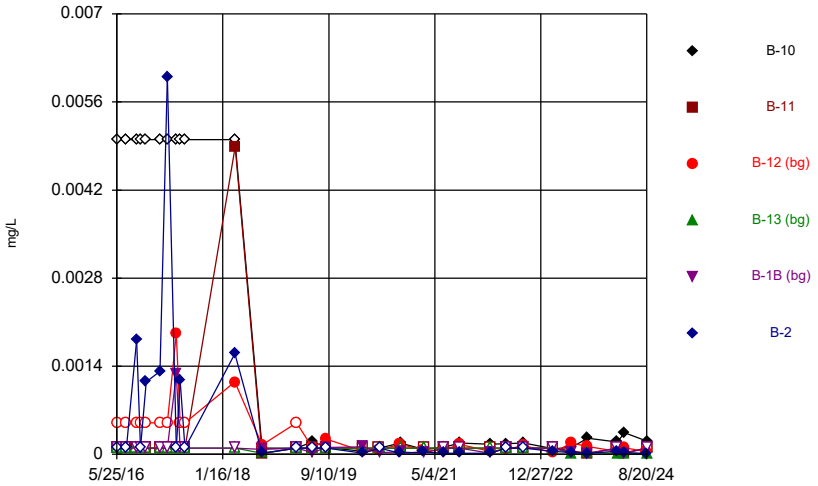
Total Dissolved Solids [TDS] (mg/L)
- B-2 background:11/8/2016-6/19/2023

FIGURE A

Time Series

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

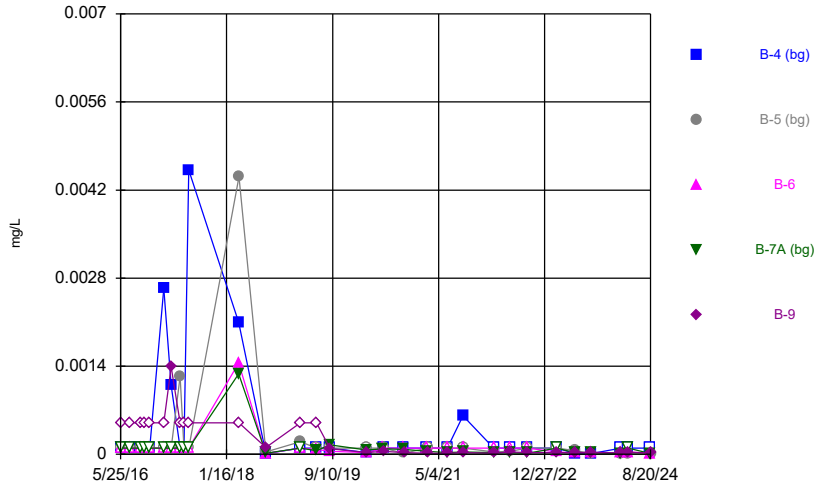
Time Series



Constituent: Antimony, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Antimony, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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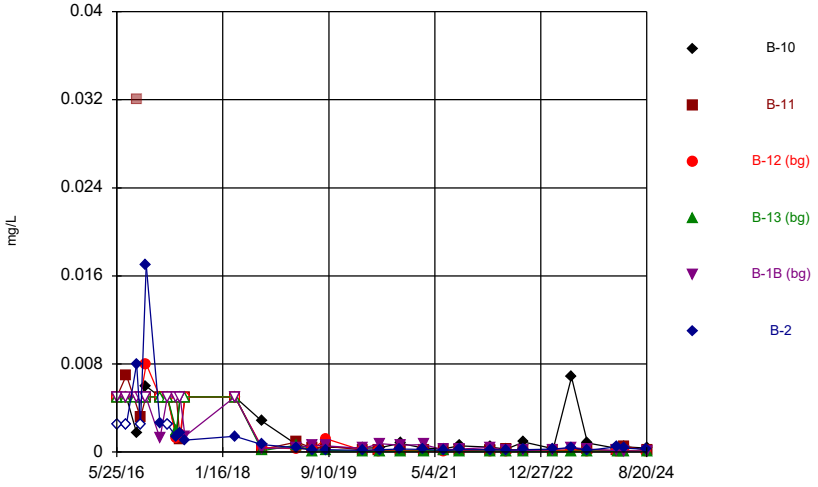
Hollow symbols indicate censored values.

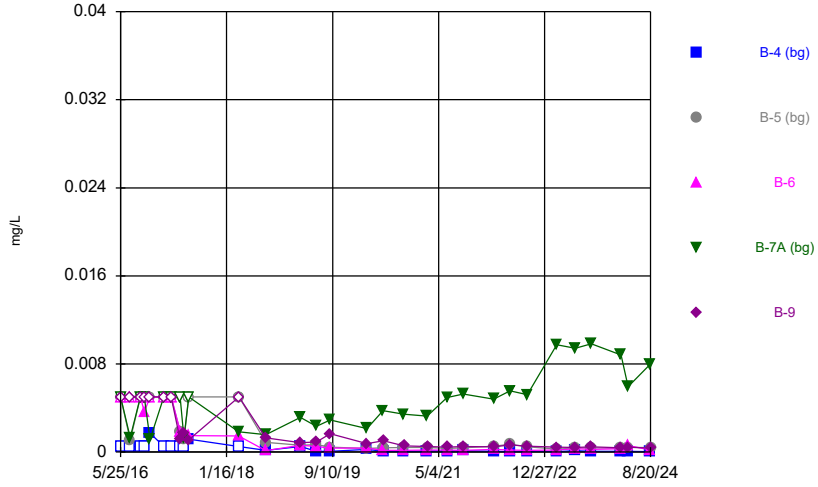
Time Series



Constituent: Arsenic, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

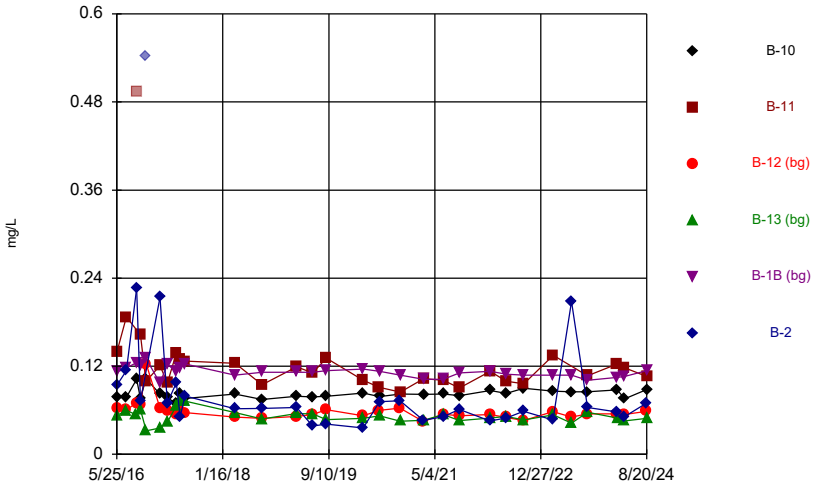
Time Series



Constituent: Arsenic, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG

Time Series

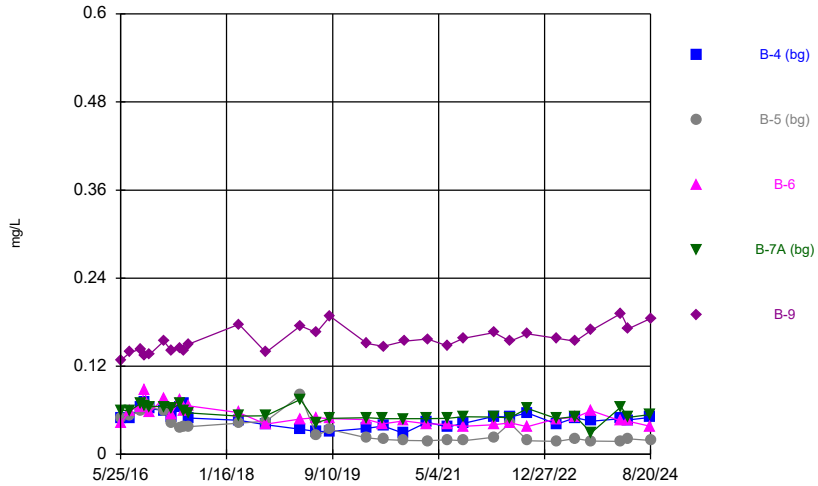


Constituent: Barium, total Analysis Run 10/31/2024 3:21 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG

Time Series



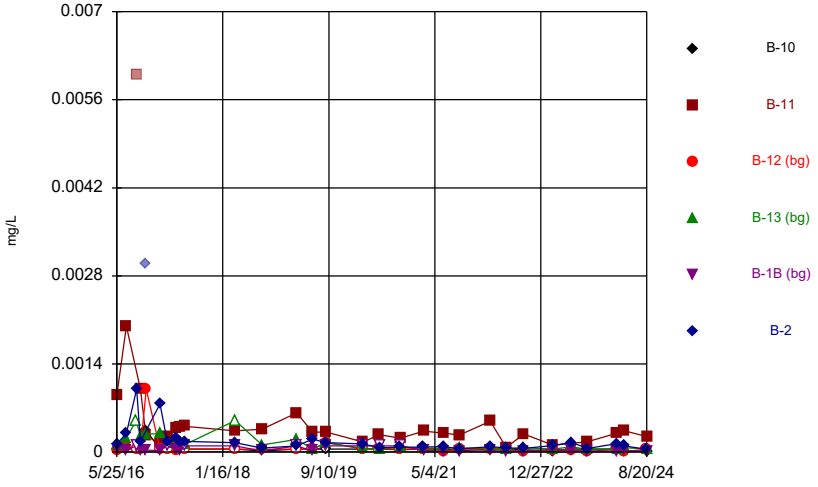
Constituent: Barium, total Analysis Run 10/31/2024 3:21 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Time Series



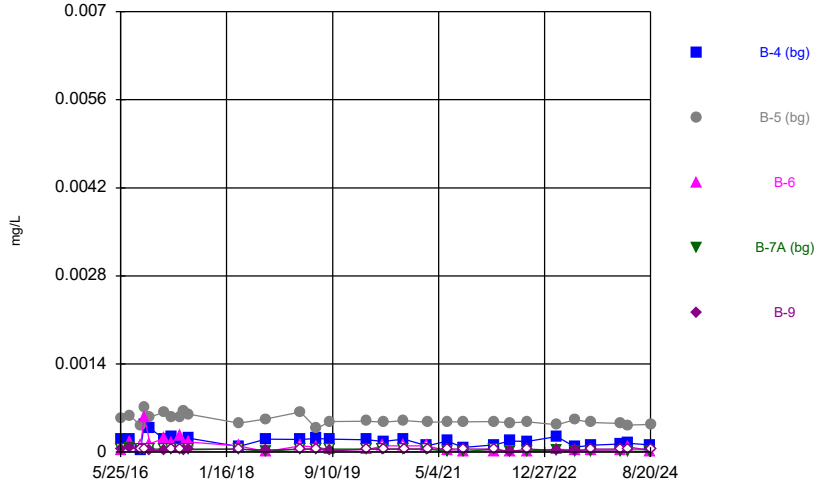
Constituent: Beryllium, total Analysis Run 10/31/2024 3:21 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Time Series

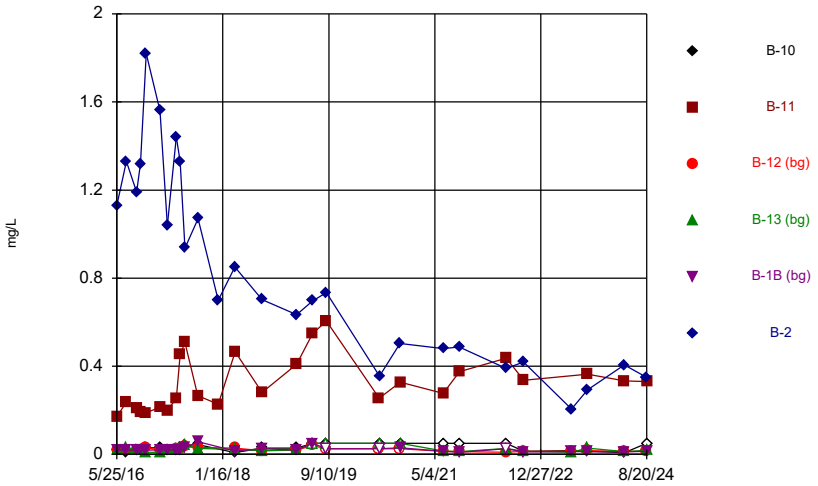


Constituent: Beryllium, total Analysis Run 10/31/2024 3:21 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

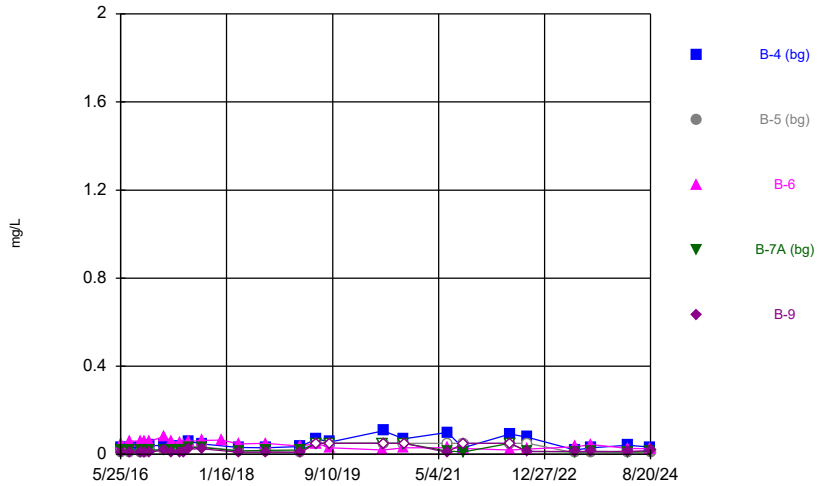
Time Series



Constituent: Boron, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

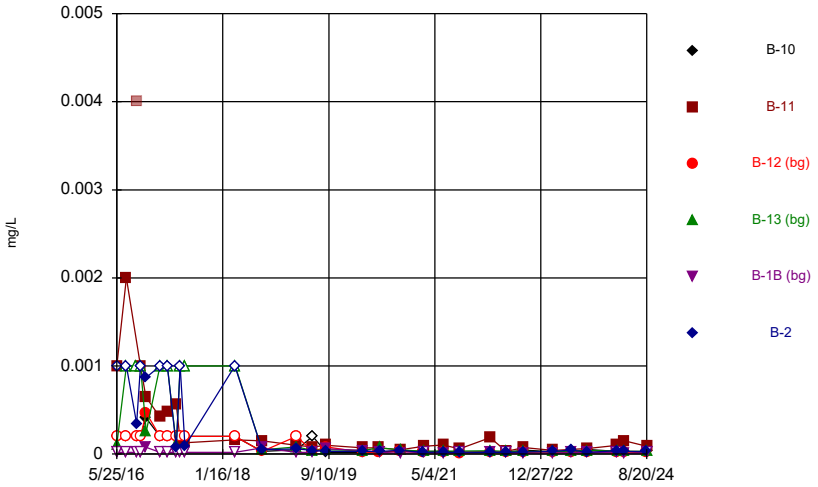
Time Series



Constituent: Boron, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

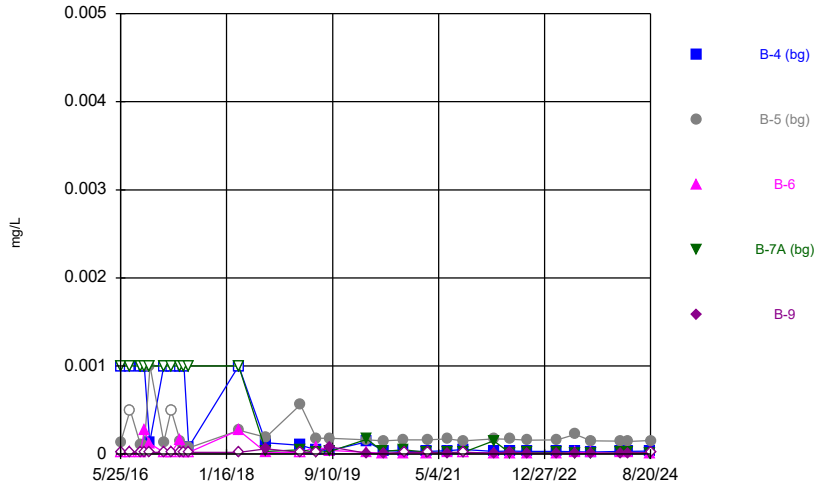
Time Series



Constituent: Cadmium, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

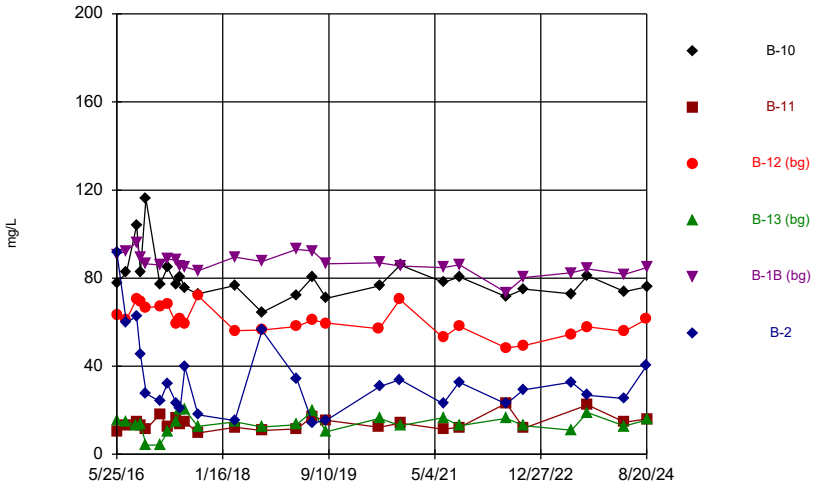
Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Cadmium, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

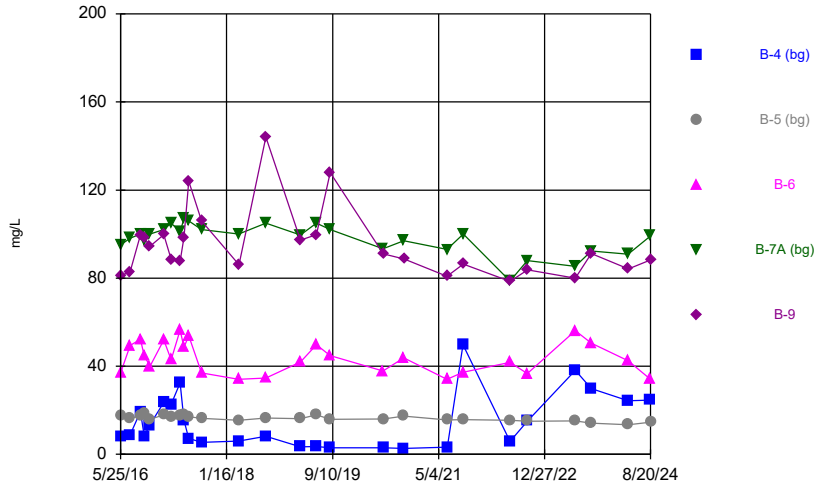
Time Series



Constituent: Calcium, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG

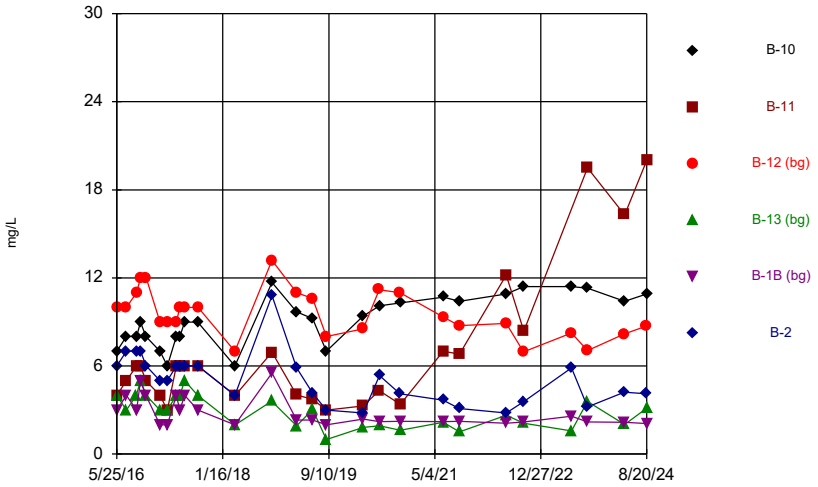
Time Series



Constituent: Calcium, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG

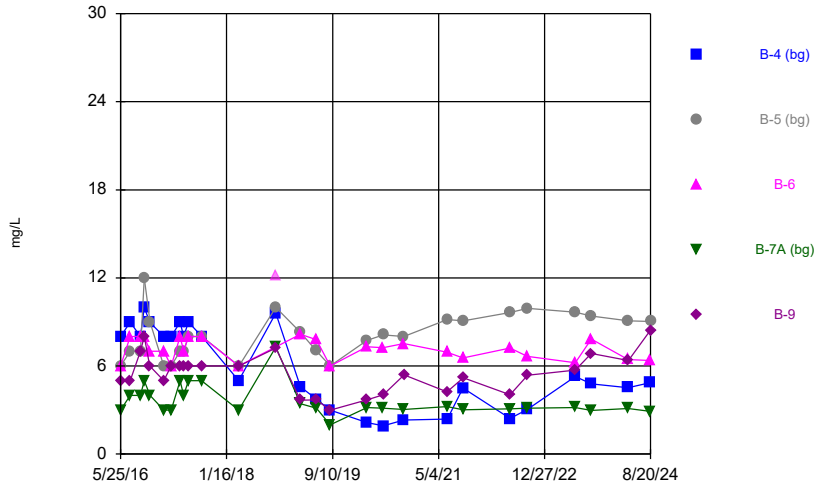
Time Series



Constituent: Chloride, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG

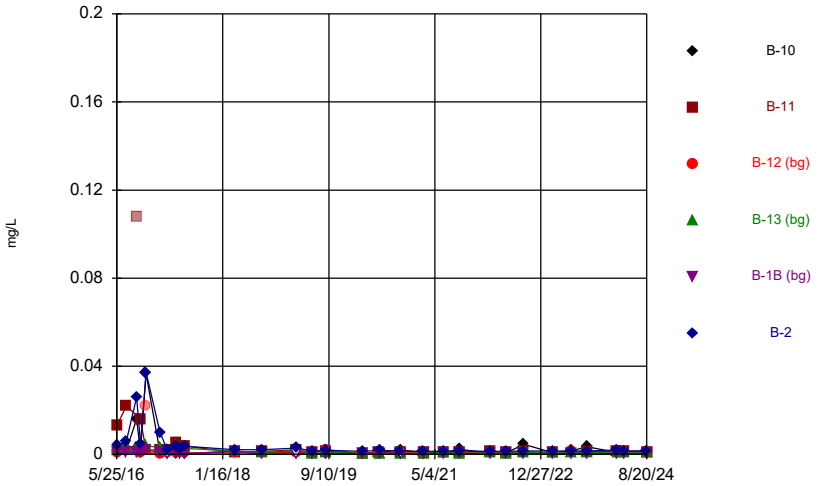
Time Series



Constituent: Chloride, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

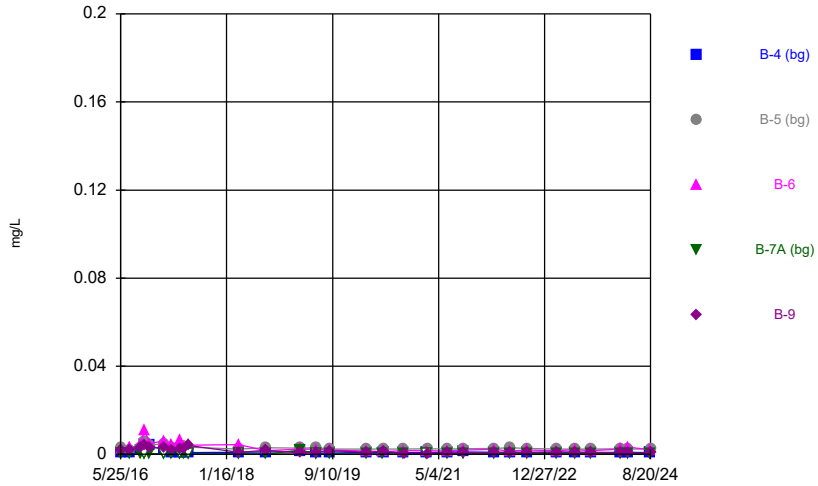
Time Series



Constituent: Chromium, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

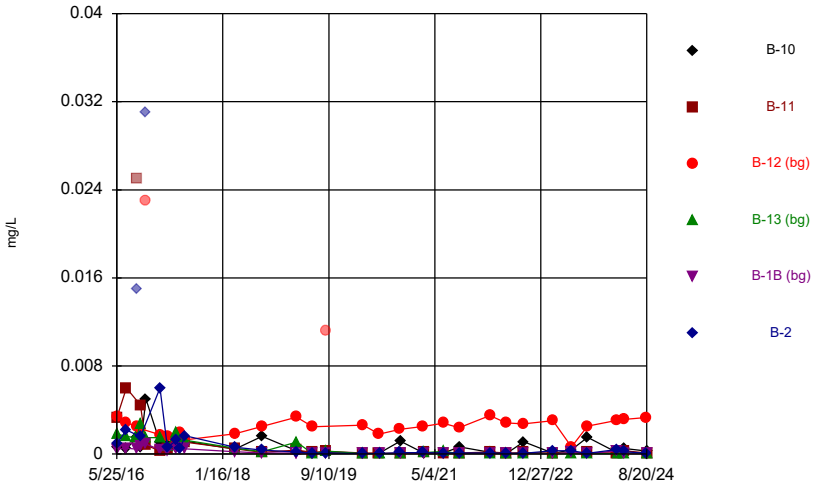
Time Series



Constituent: Chromium, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

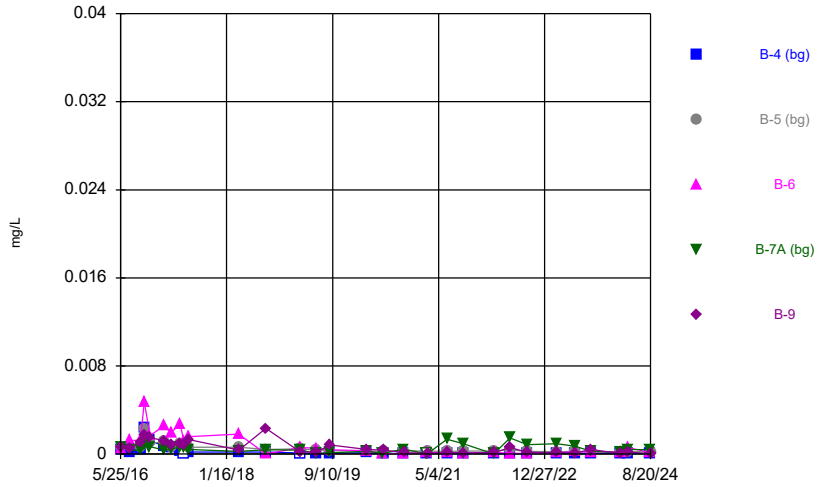
Time Series



Constituent: Cobalt, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

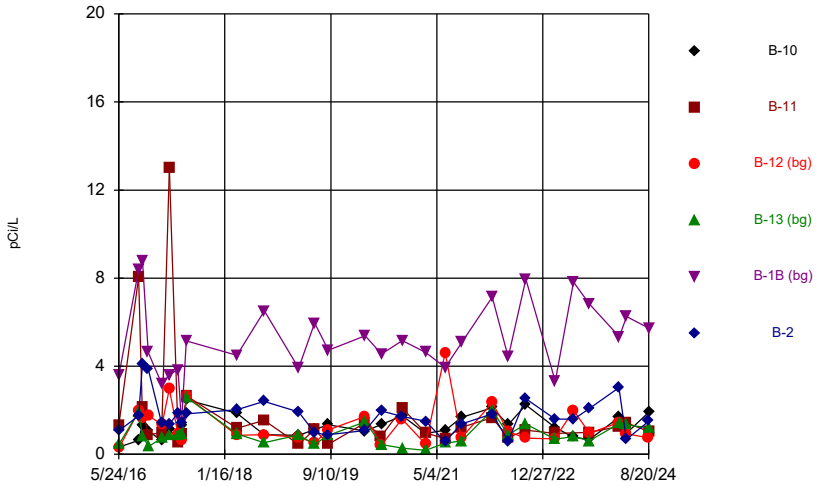
Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Cobalt, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

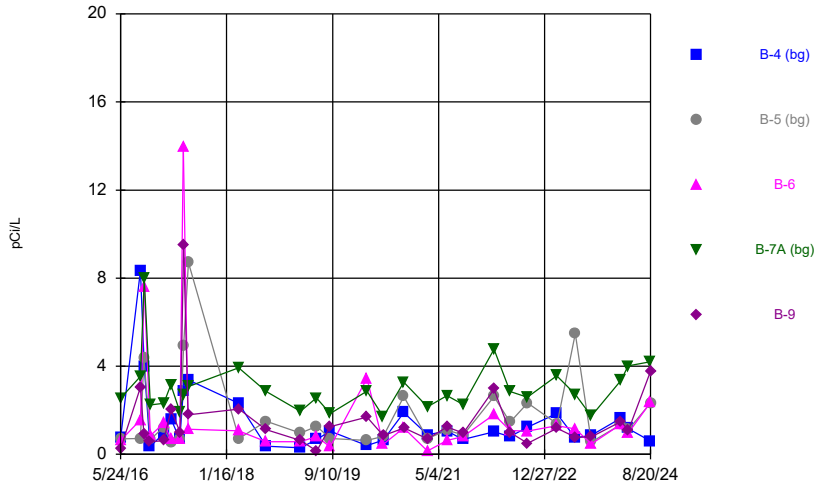
Time Series



Constituent: Combined Radium 226 + 228 Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG

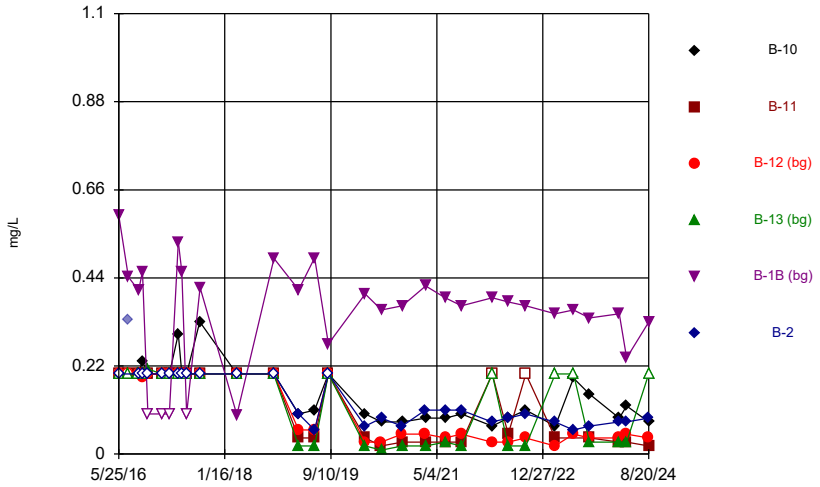
Time Series



Constituent: Combined Radium 226 + 228 Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

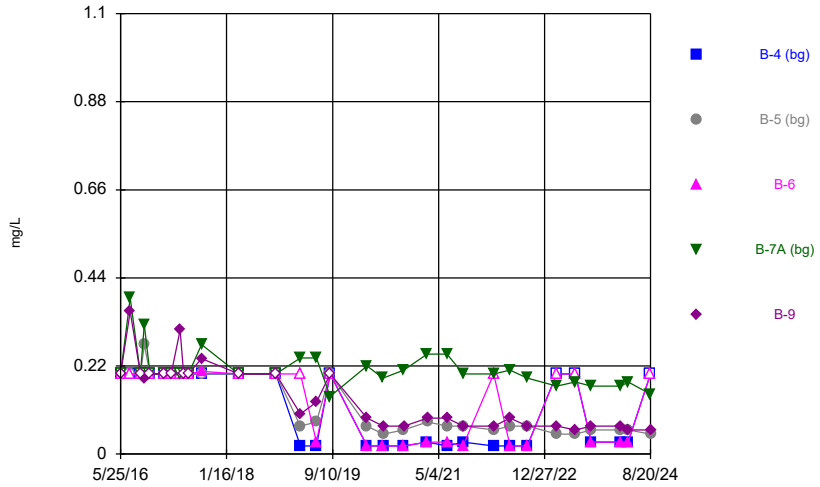
Time Series



Constituent: Fluoride, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

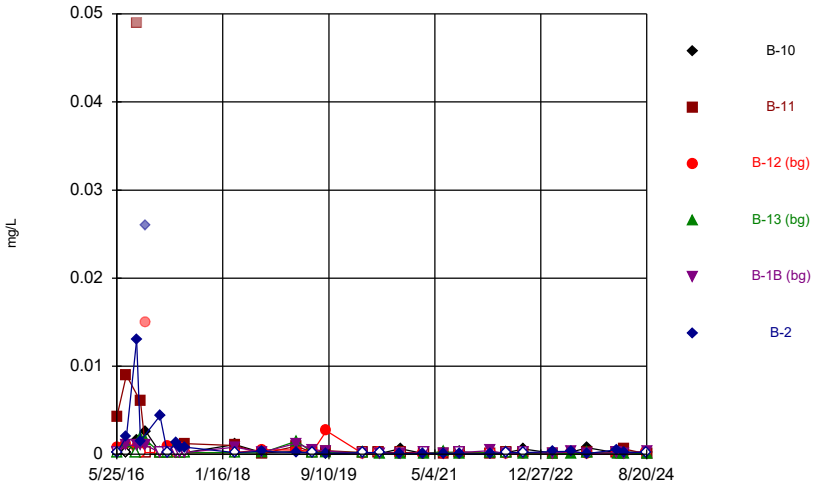
Time Series



Constituent: Fluoride, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

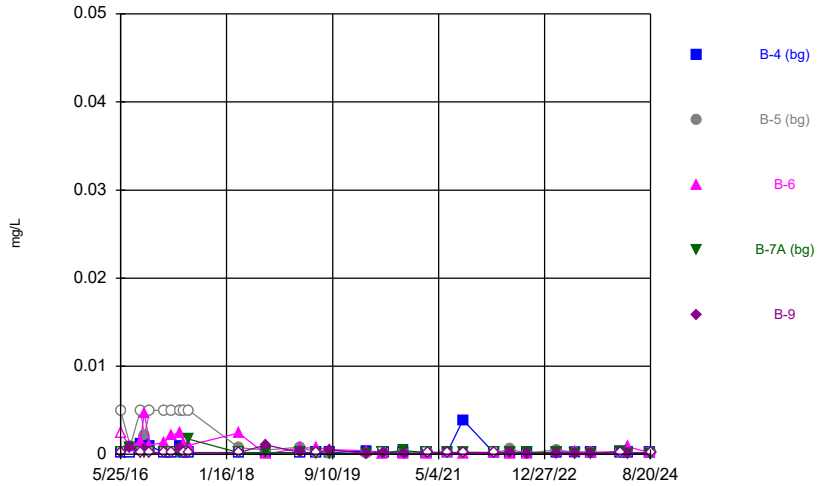
Time Series



Constituent: Lead, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

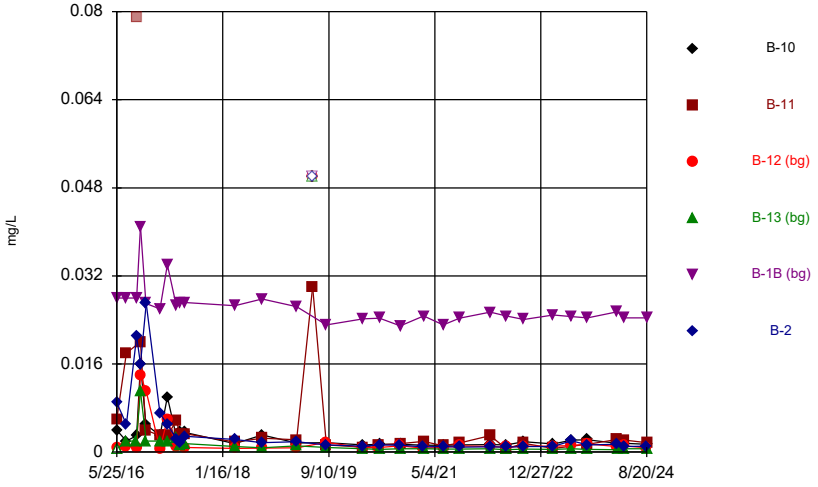
Time Series



Constituent: Lead, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

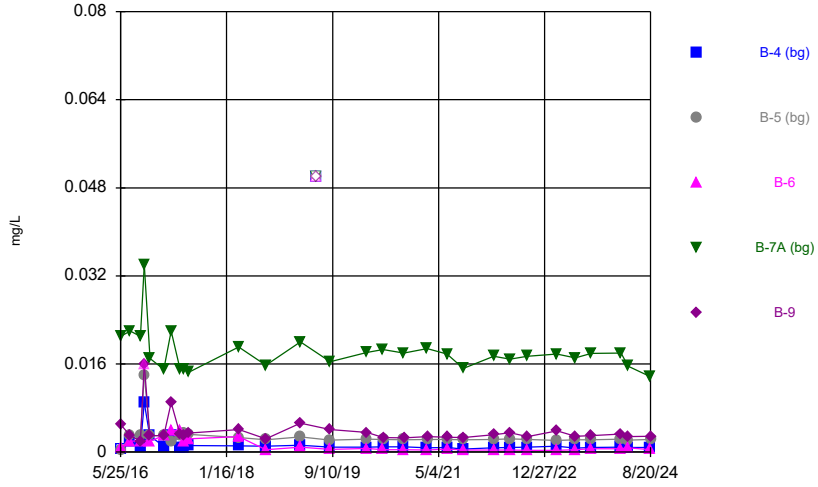
Time Series



Constituent: Lithium, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

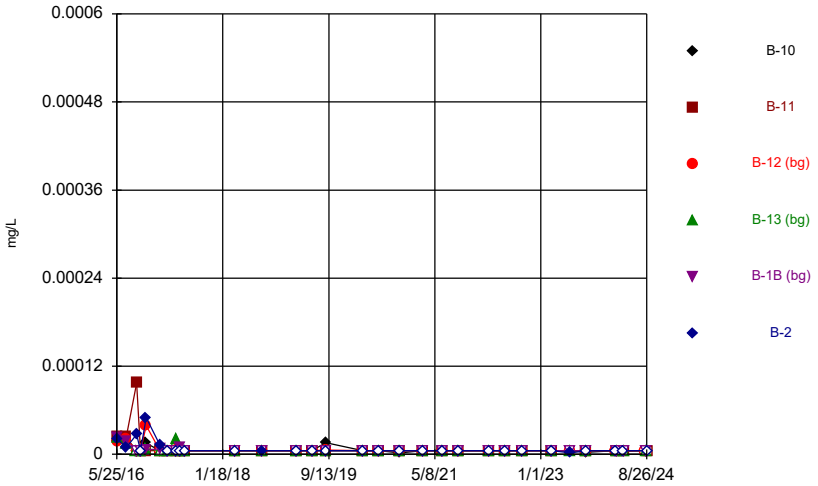
Time Series



Constituent: Lithium, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

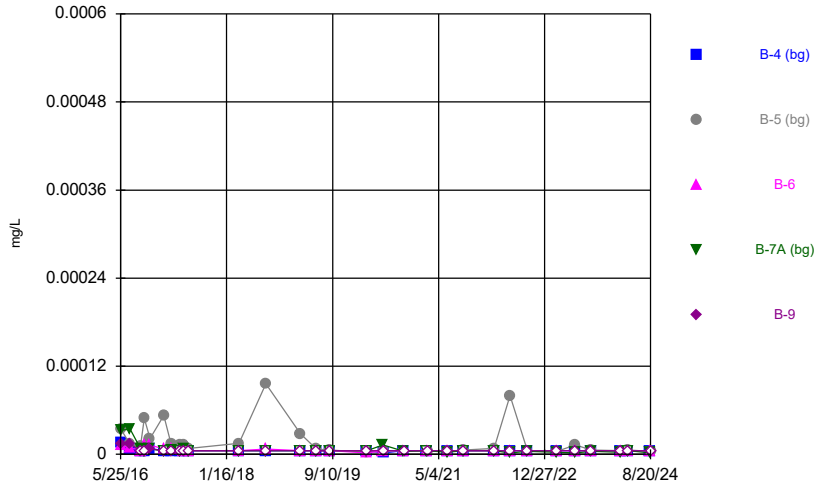
Time Series



Constituent: Mercury, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

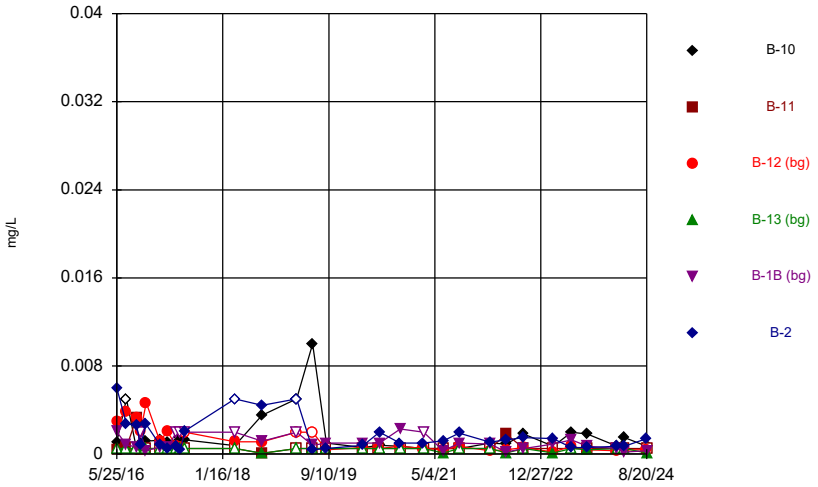
Time Series



Constituent: Mercury, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

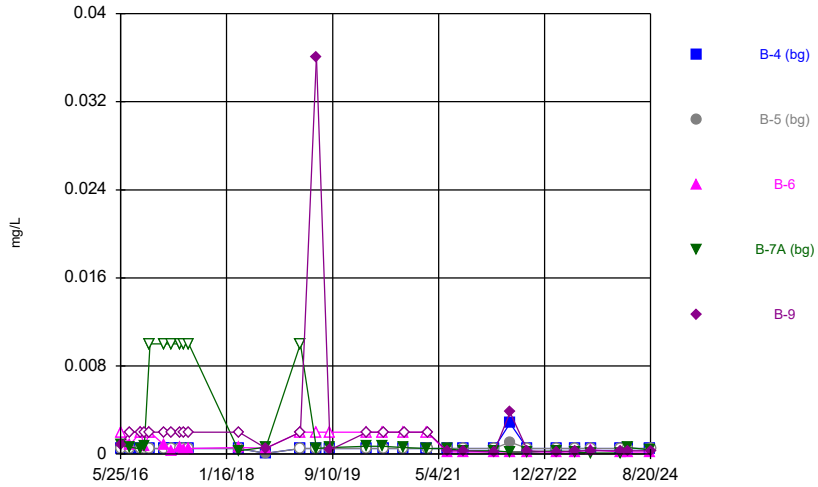
Time Series



Constituent: Molybdenum, total Analysis Run 10/31/2024 3:21 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

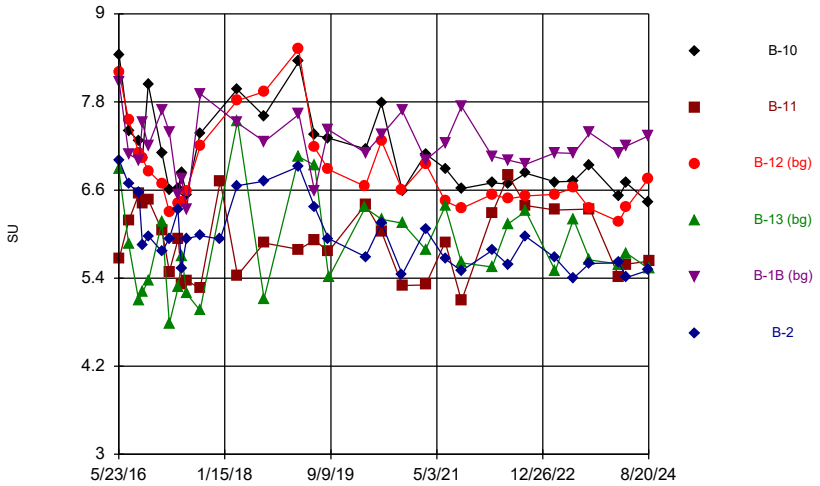
Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Molybdenum, total Analysis Run 10/31/2024 3:22 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

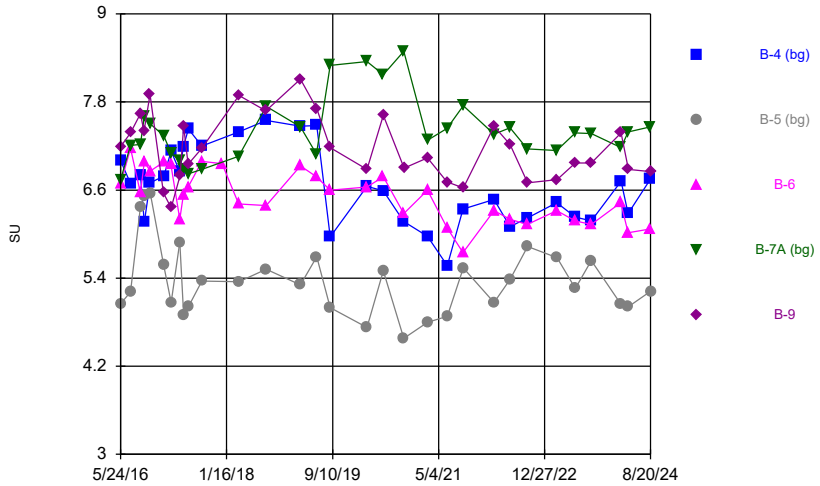
Time Series



Constituent: pH, field Analysis Run 10/31/2024 3:22 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Time Series

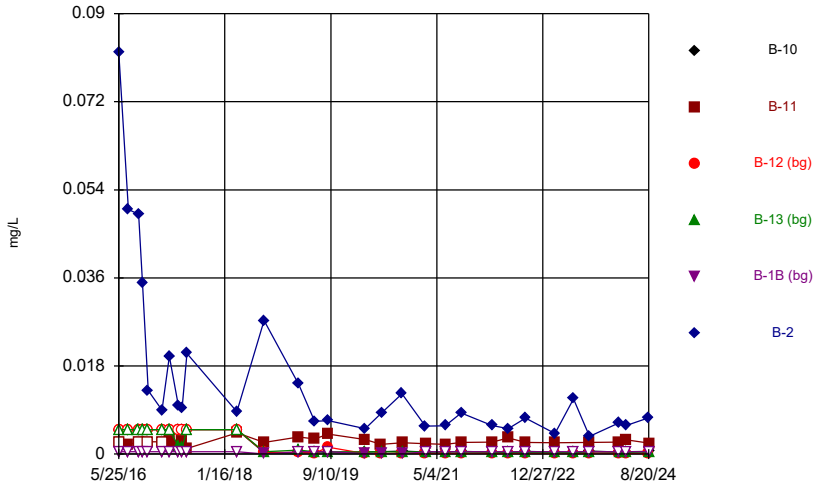


Constituent: pH, field Analysis Run 10/31/2024 3:22 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Hollow symbols indicate censored values.

Time Series

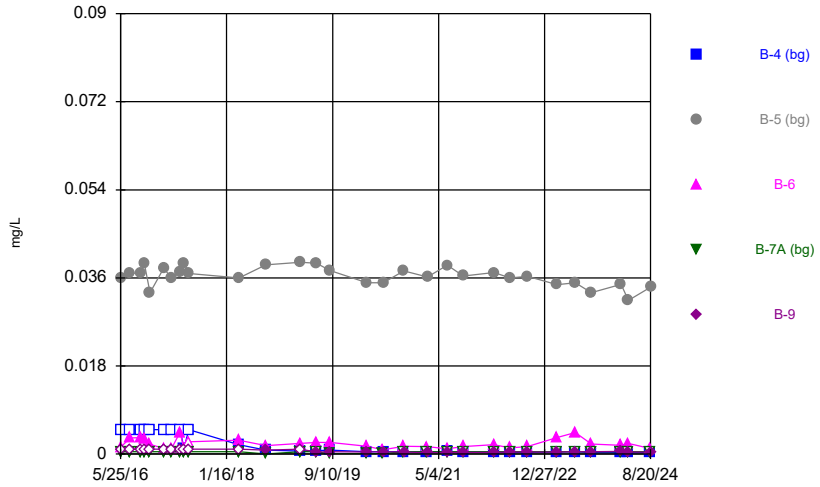


Constituent: Selenium, total Analysis Run 10/31/2024 3:22 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Hollow symbols indicate censored values.

Time Series



Constituent: Selenium, total Analysis Run 10/31/2024 3:22 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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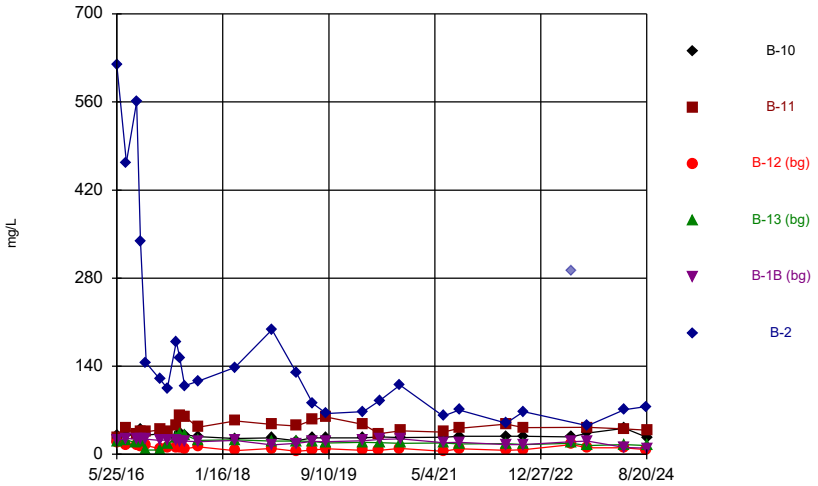
Time Series



Constituent: Sulfate, total Analysis Run 10/31/2024 3:22 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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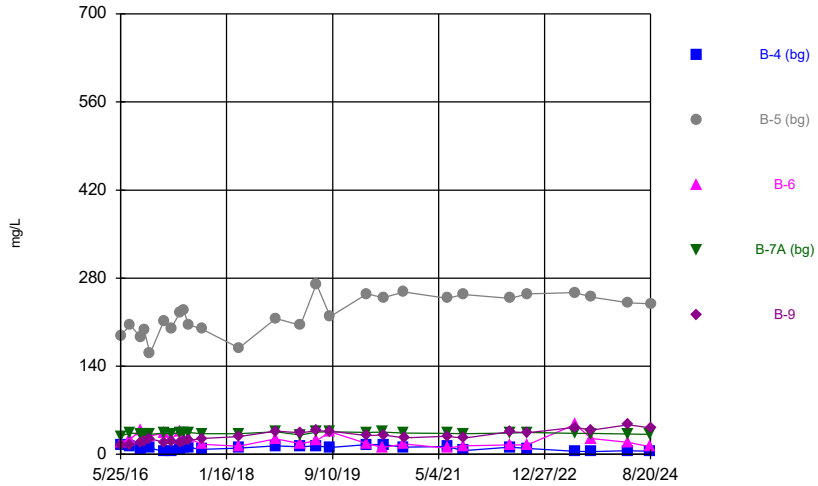
Time Series



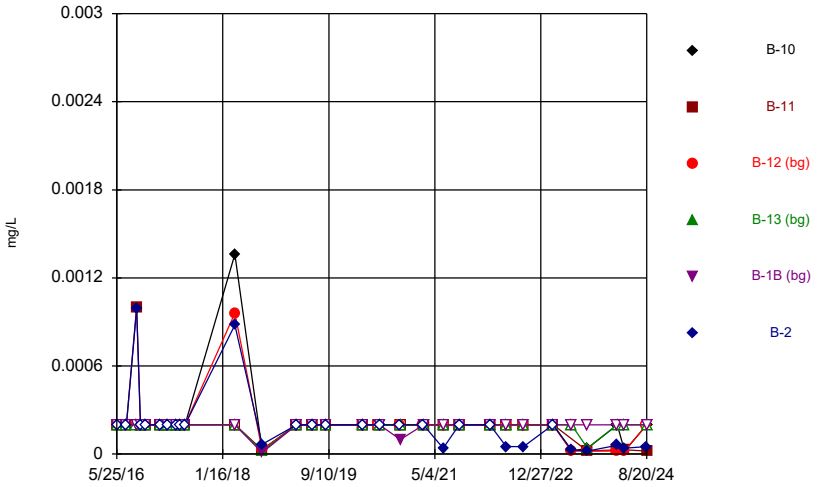
Constituent: Sulfate, total Analysis Run 10/31/2024 3:22 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Time Series



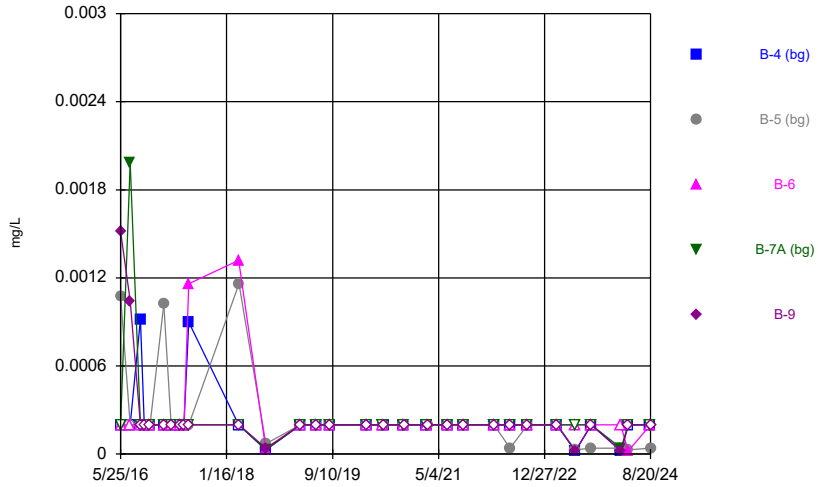
Constituent: Thallium, total Analysis Run 10/31/2024 3:22 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

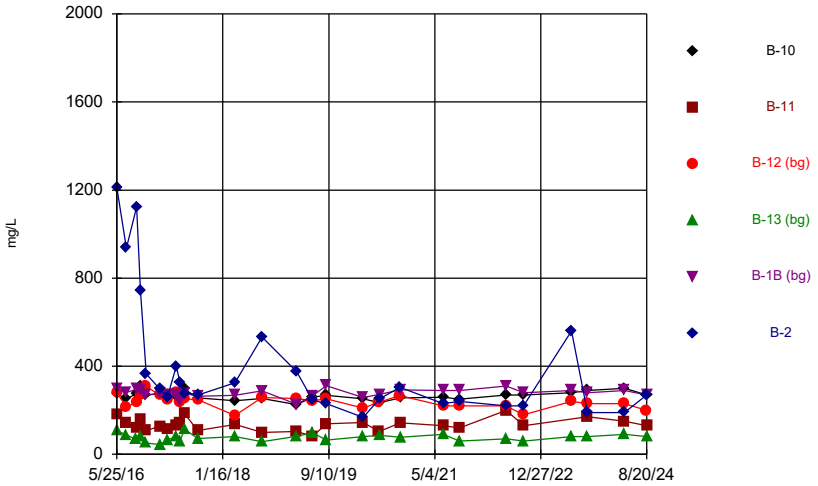
Time Series



Constituent: Thallium, total Analysis Run 10/31/2024 3:22 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Time Series



Constituent: Total Dissolved Solids [TDS] Analysis Run 10/31/2024 3:22 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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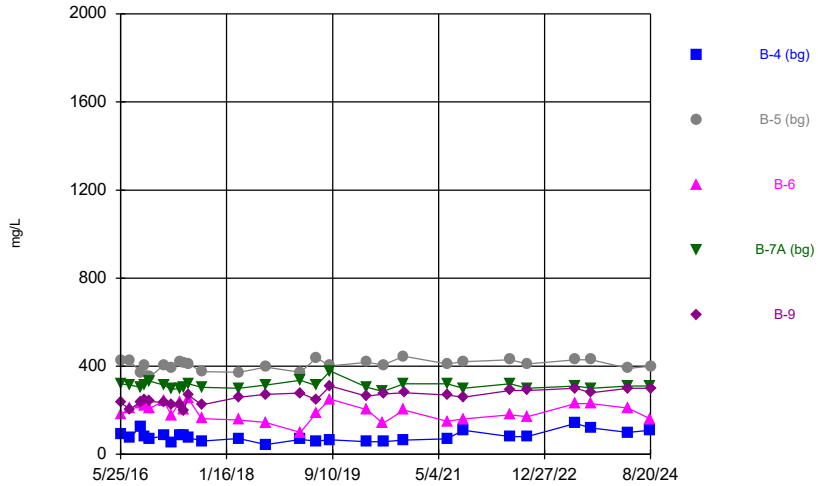
Time Series



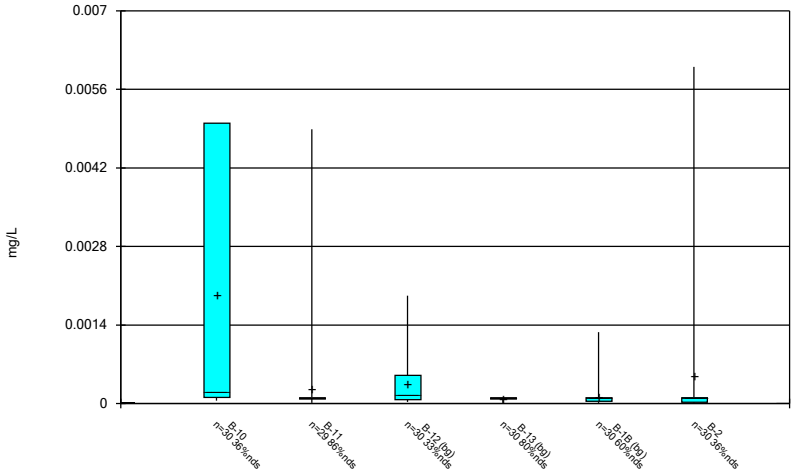
Constituent: Total Dissolved Solids [TDS] Analysis Run 10/31/2024 3:22 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

FIGURE B

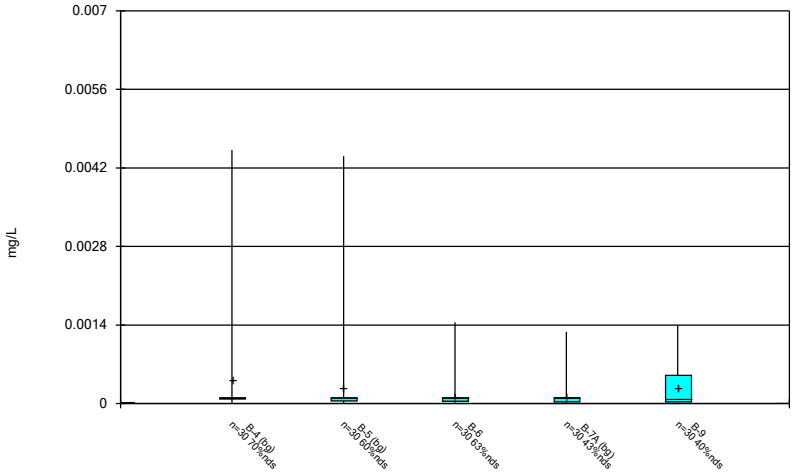
Box Plots

Box & Whiskers Plot



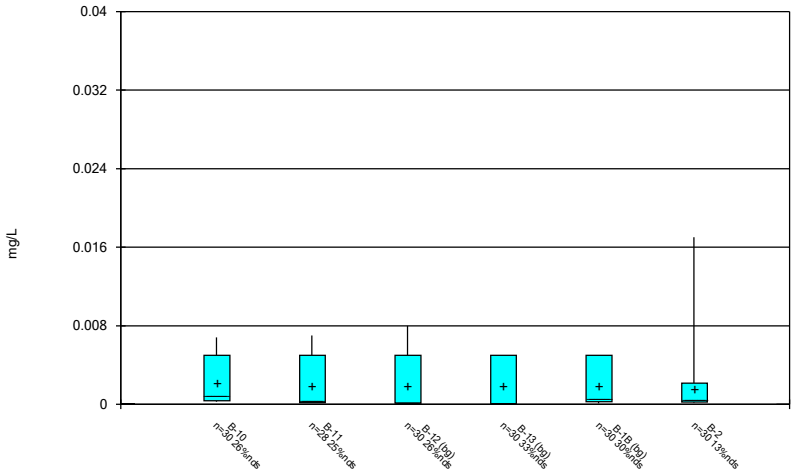
Constituent: Antimony, total Analysis Run 10/31/2024 3:46 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



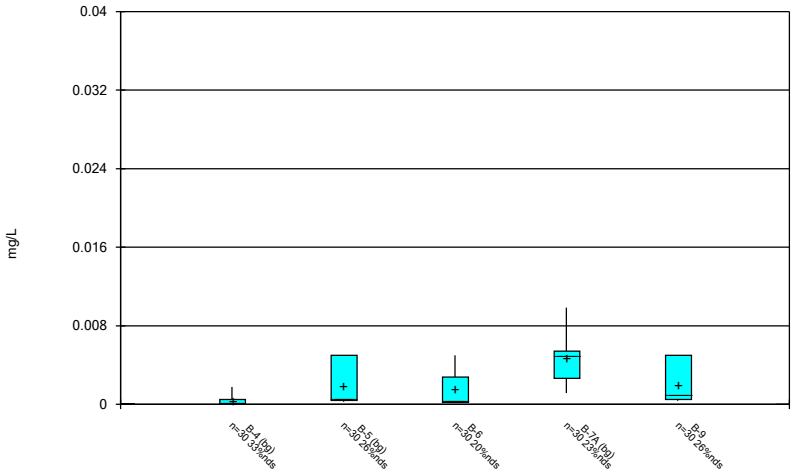
Constituent: Antimony, total Analysis Run 10/31/2024 3:46 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



Constituent: Arsenic, total Analysis Run 10/31/2024 3:46 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



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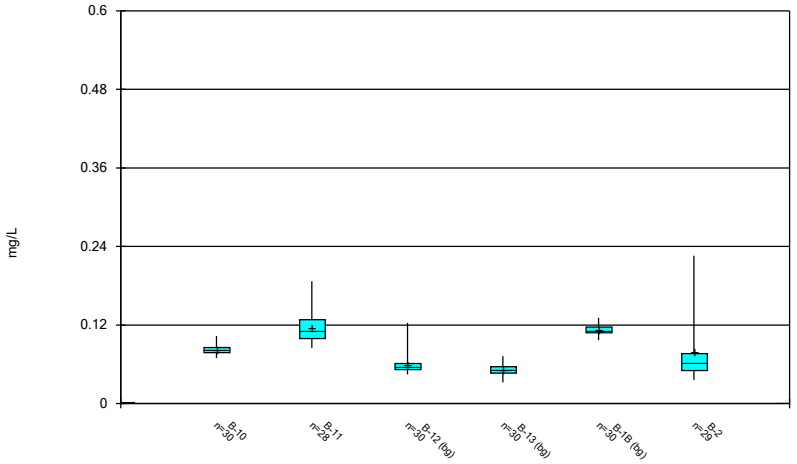
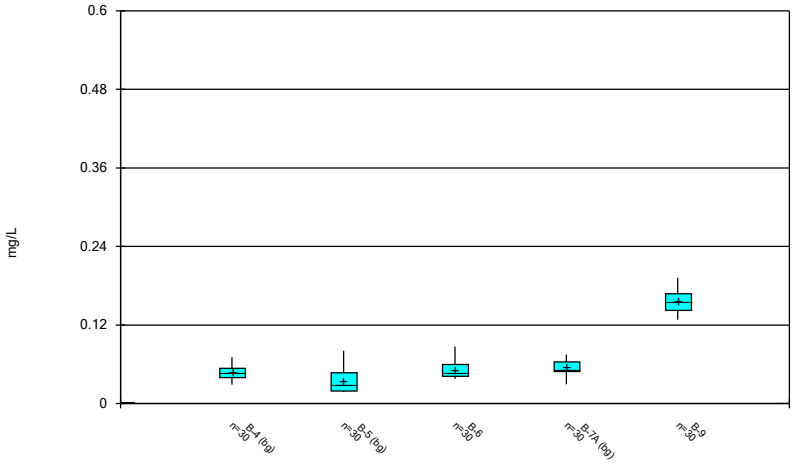
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



Constituent: Barium, total Analysis Run 10/31/2024 3:46 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



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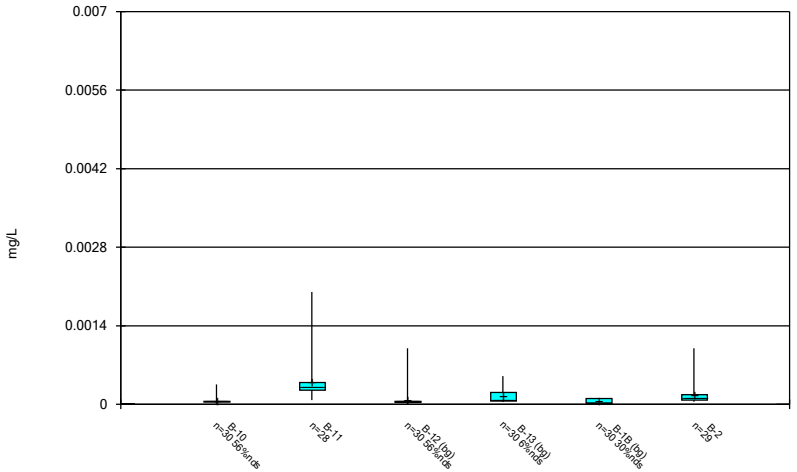
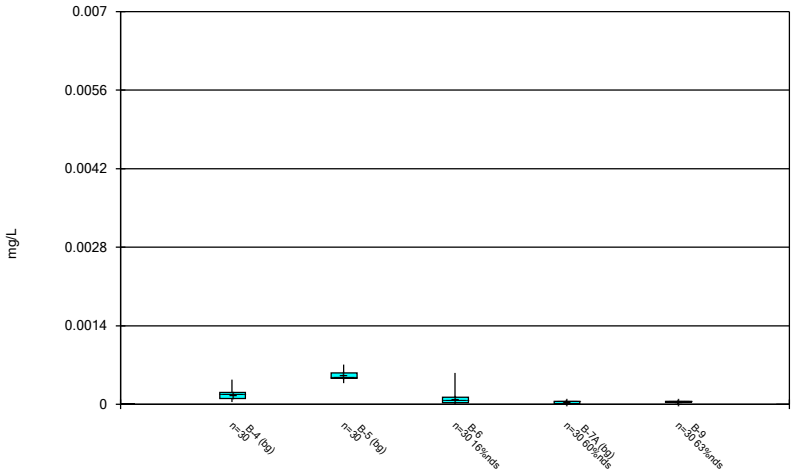
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



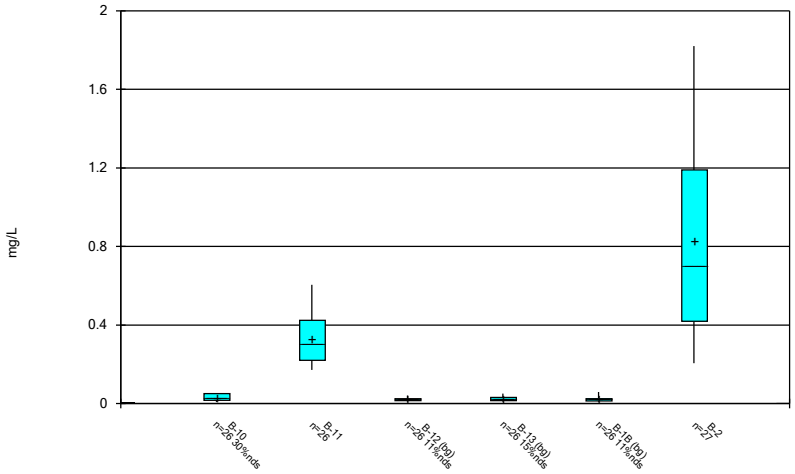
Constituent: Beryllium, total Analysis Run 10/31/2024 3:46 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



Constituent: Beryllium, total Analysis Run 10/31/2024 3:46 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

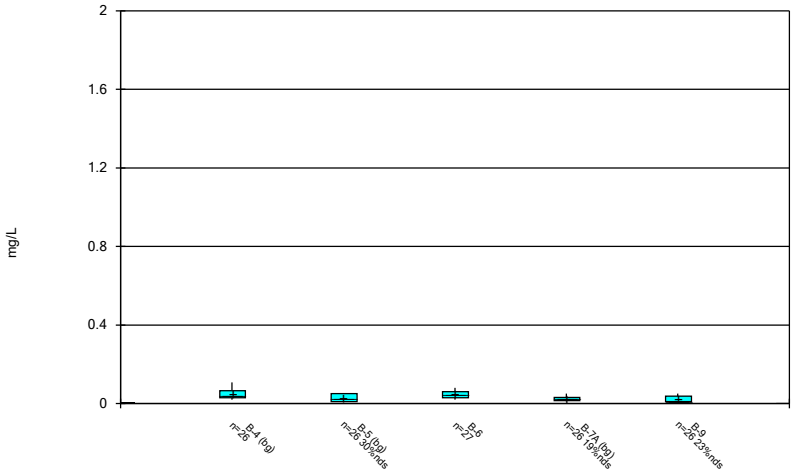
Box & Whiskers Plot



Constituent: Boron, total Analysis Run 10/31/2024 3:46 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

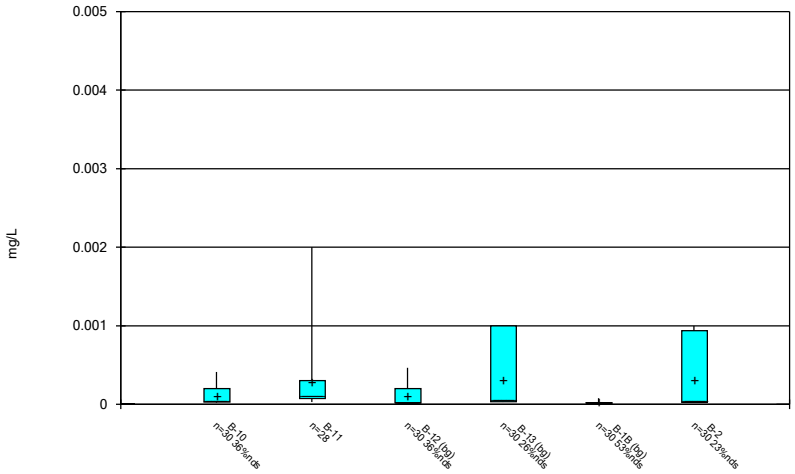
Box & Whiskers Plot



Constituent: Boron, total Analysis Run 10/31/2024 3:46 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

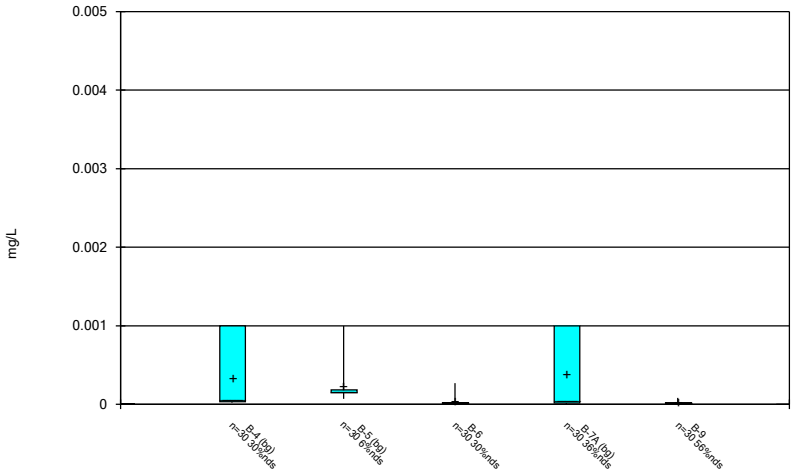
Box & Whiskers Plot



Constituent: Cadmium, total Analysis Run 10/31/2024 3:46 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

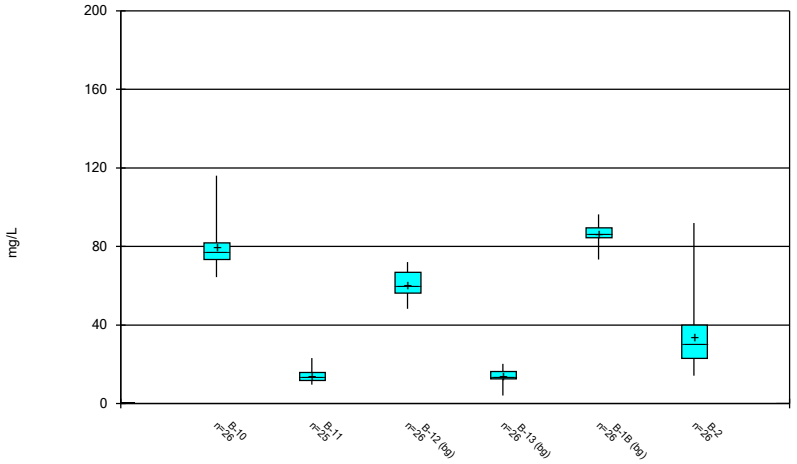
Box & Whiskers Plot



Constituent: Cadmium, total Analysis Run 10/31/2024 3:47 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



Constituent: Calcium, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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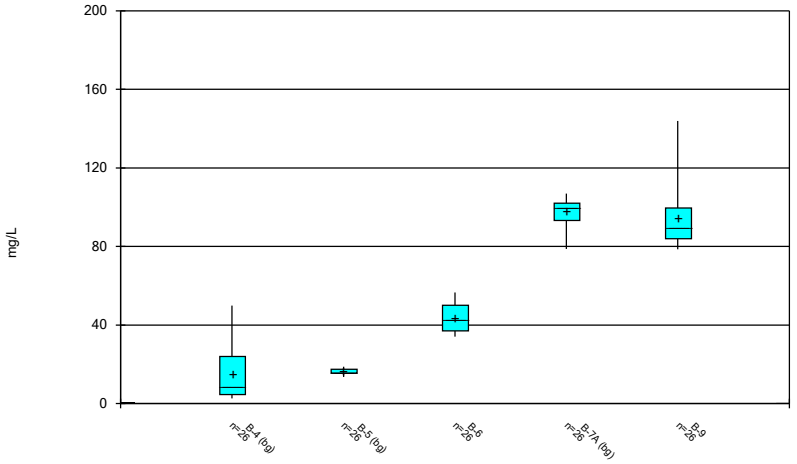
Box & Whiskers Plot



Constituent: Calcium, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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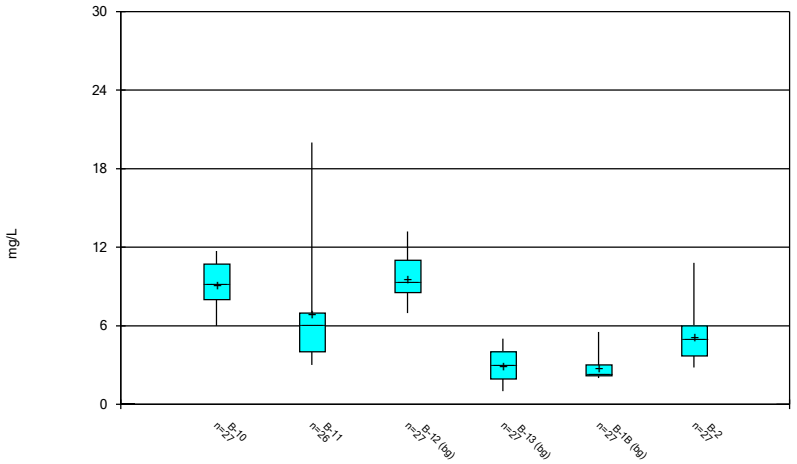
Box & Whiskers Plot



Constituent: Chloride, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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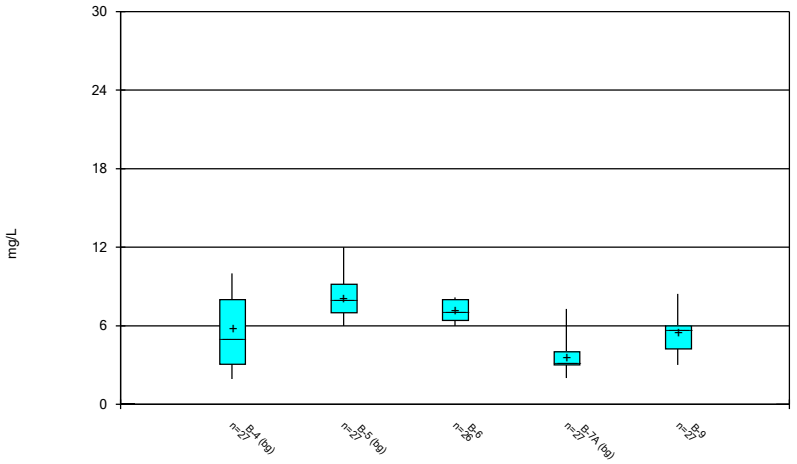
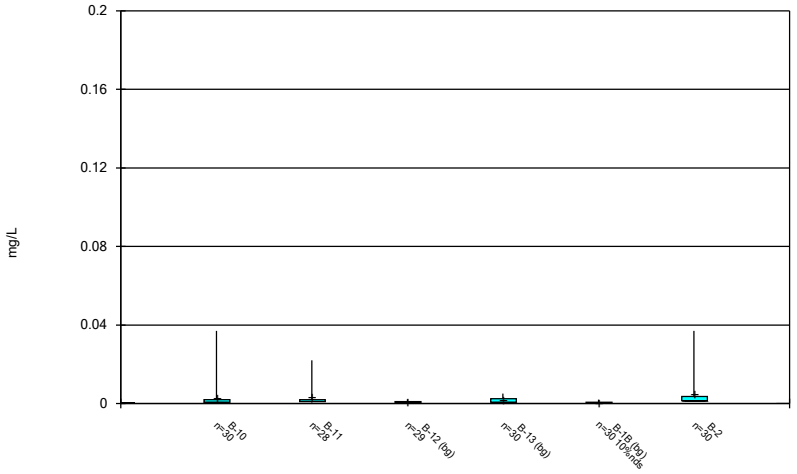
Box & Whiskers Plot



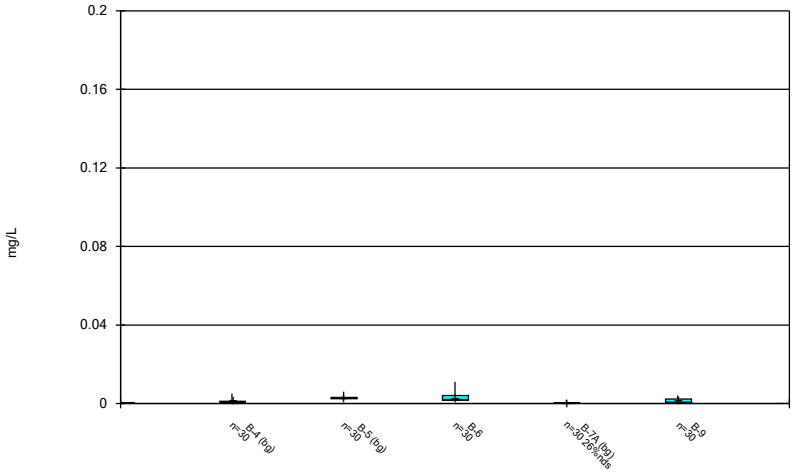
Constituent: Chloride, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



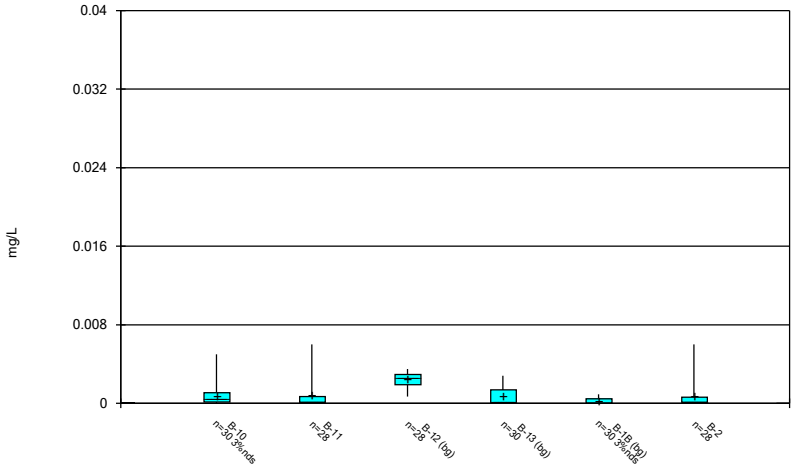
Constituent: Chromium, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



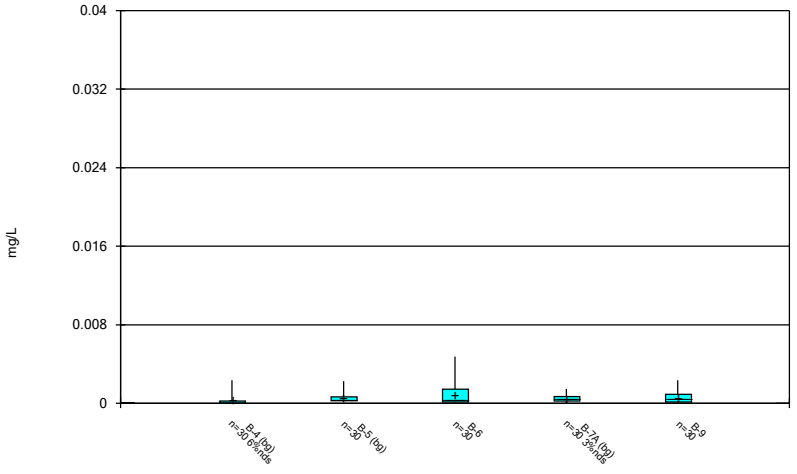
Constituent: Chromium, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



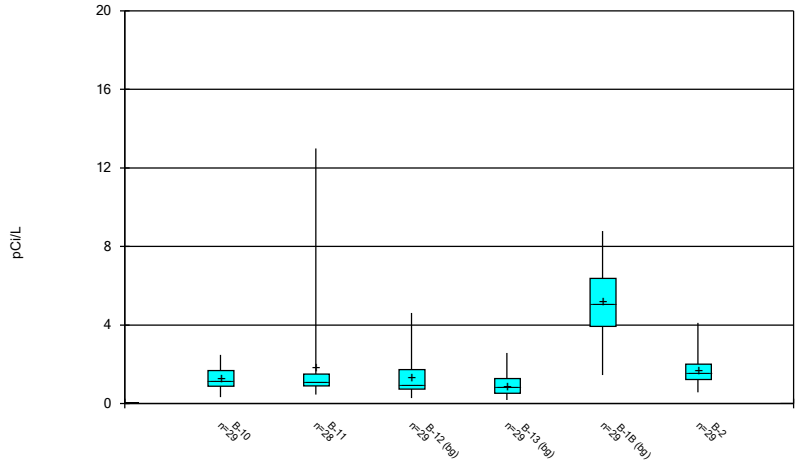
Constituent: Cobalt, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



Constituent: Cobalt, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

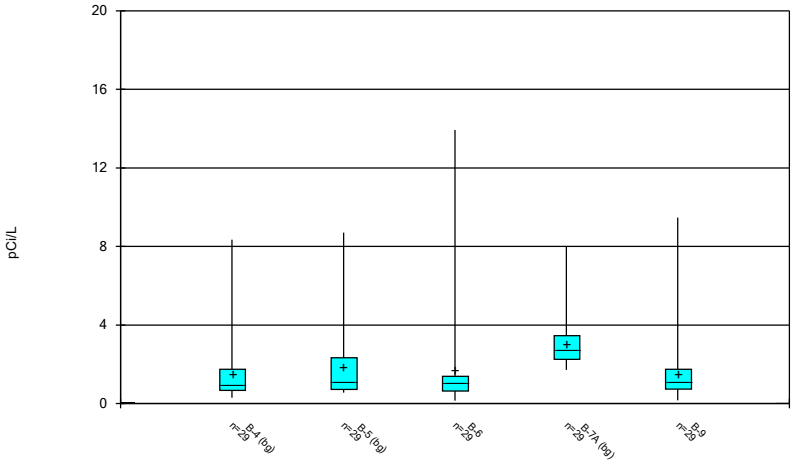
Box & Whiskers Plot



Constituent: Combined Radium 226 + 228 Analysis Run 10/31/2024 3:47 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

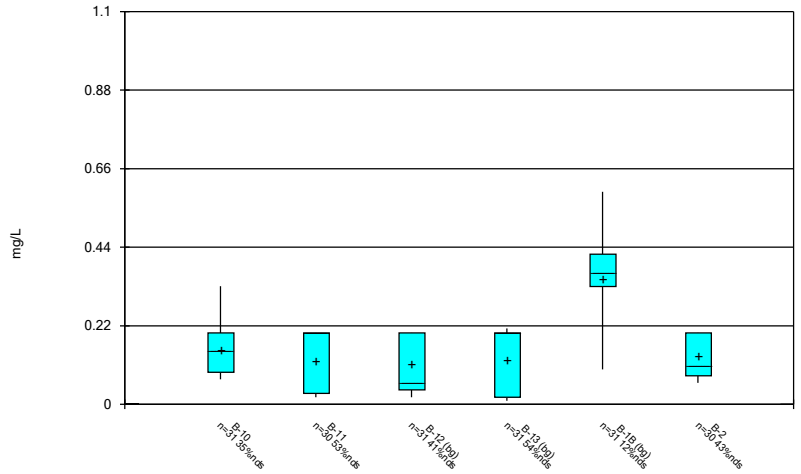
Box & Whiskers Plot



Constituent: Combined Radium 226 + 228 Analysis Run 10/31/2024 3:47 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

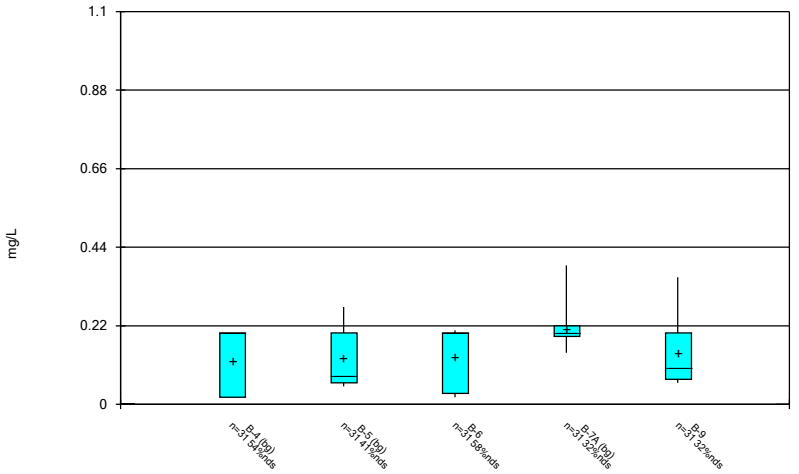
Box & Whiskers Plot



Constituent: Fluoride, total Analysis Run 10/31/2024 3:47 PM

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

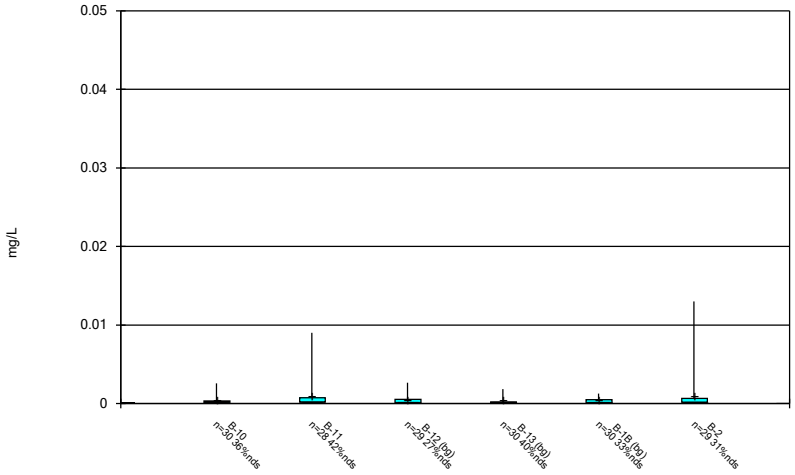
Box & Whiskers Plot



Constituent: Fluoride, total Analysis Run 10/31/2024 3:47 PM

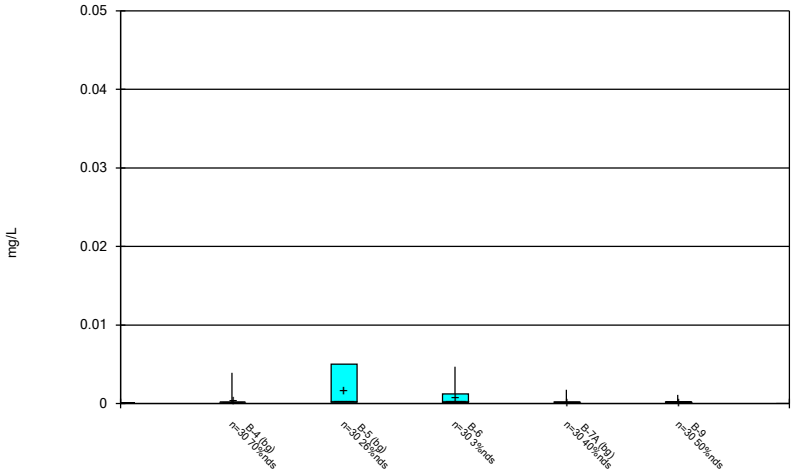
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



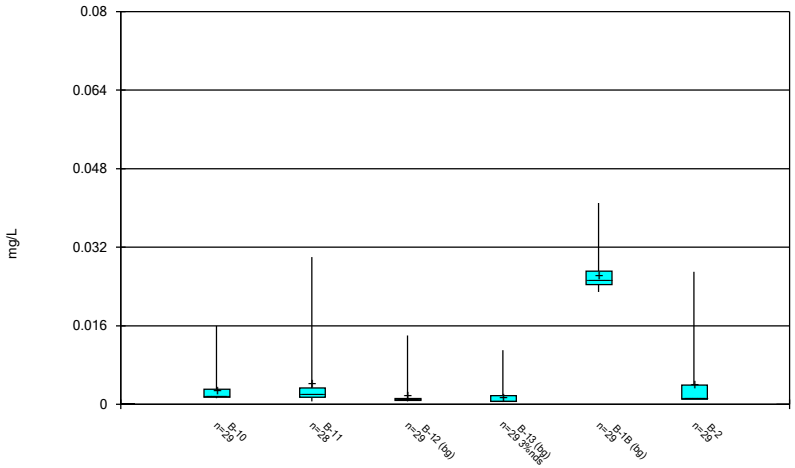
Constituent: Lead, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



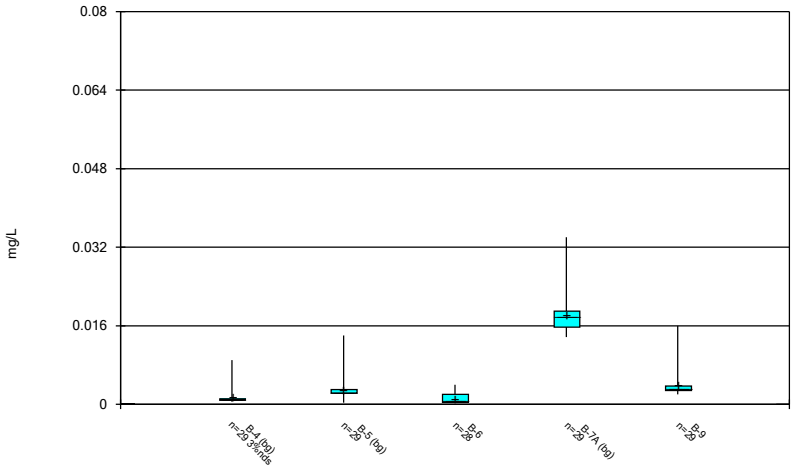
Constituent: Lead, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



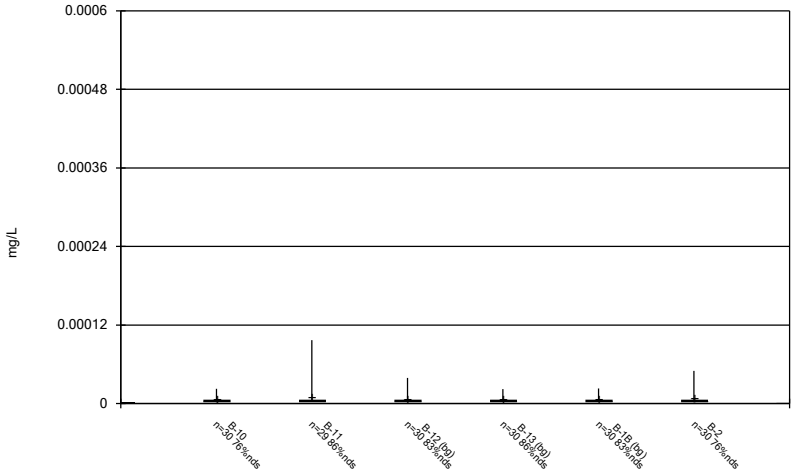
Constituent: Lithium, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



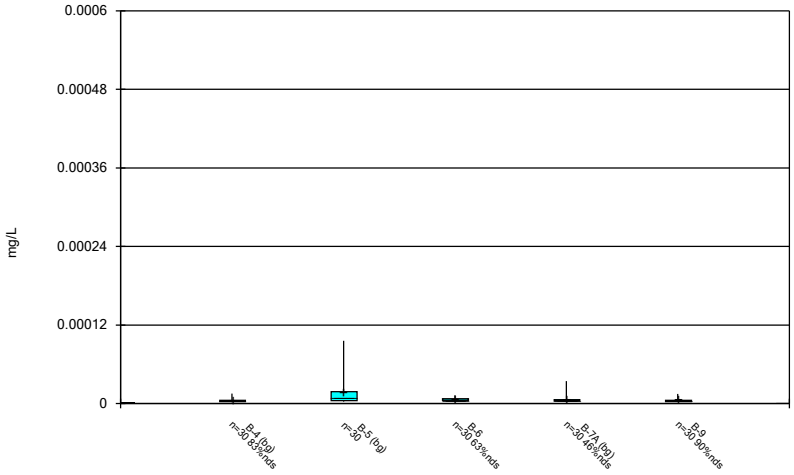
Constituent: Lithium, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



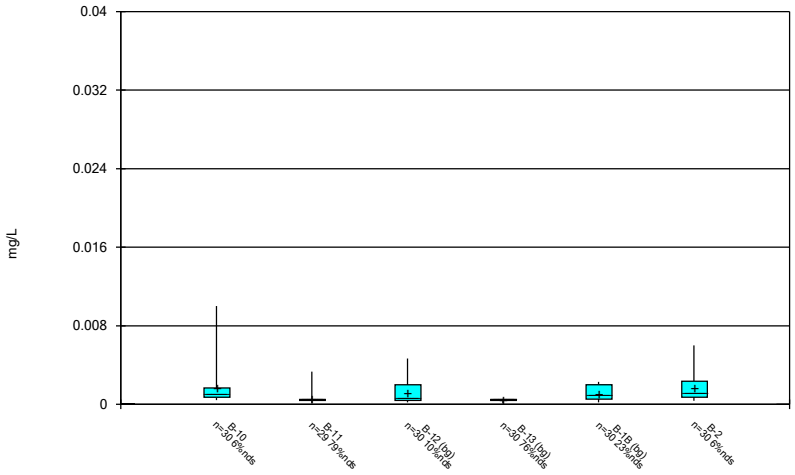
Constituent: Mercury, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



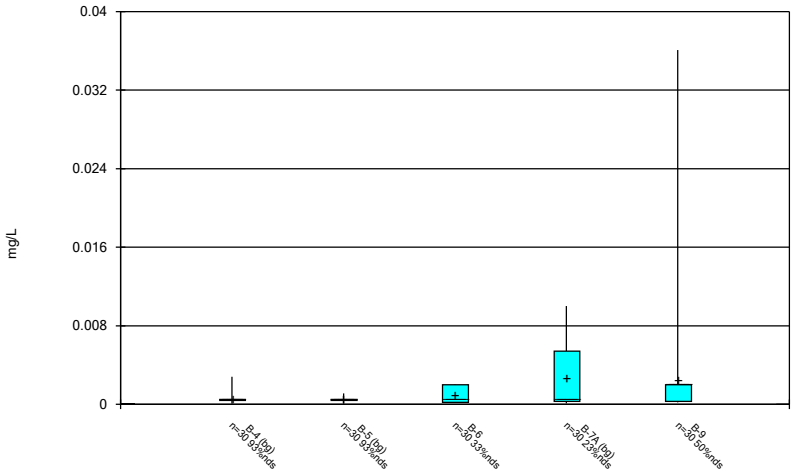
Constituent: Mercury, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



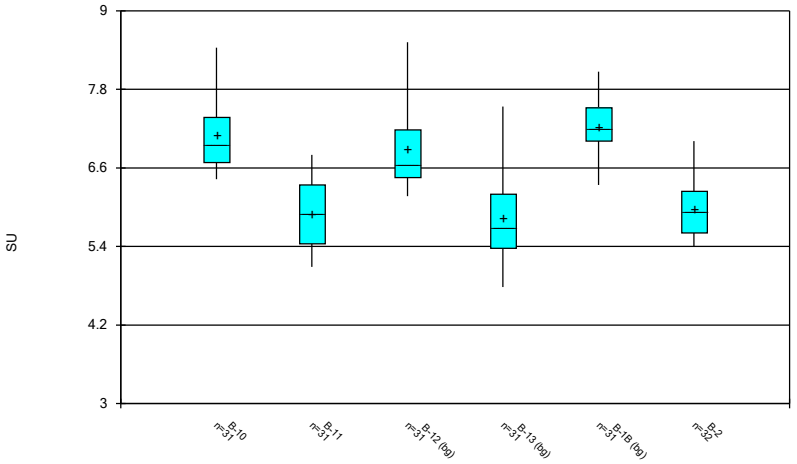
Constituent: Molybdenum, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



Constituent: Molybdenum, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



Constituent: pH, field Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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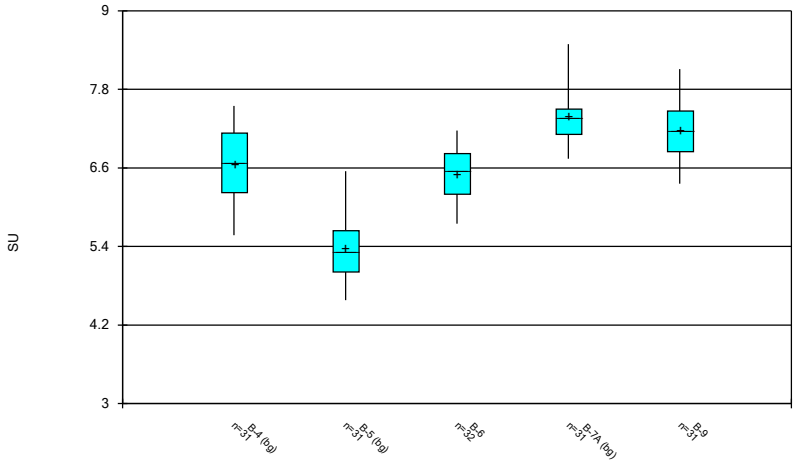
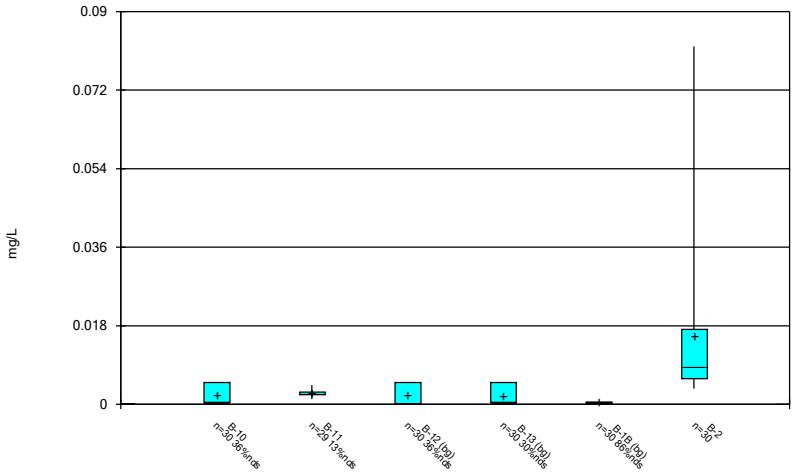
Box & Whiskers Plot



Constituent: pH, field Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Selenium, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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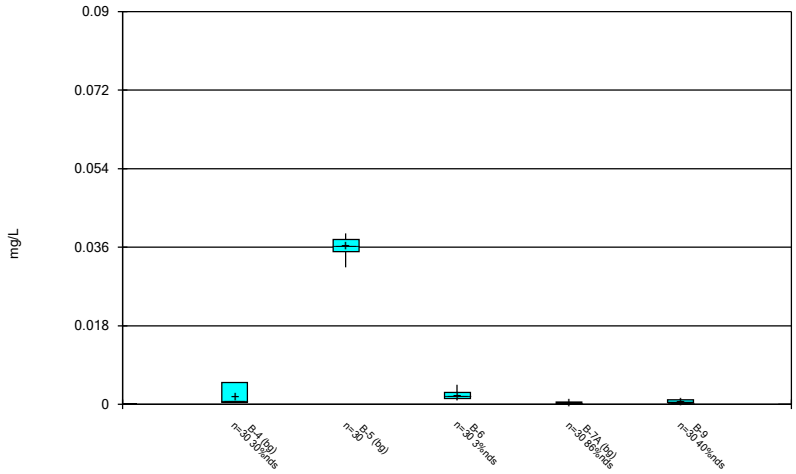
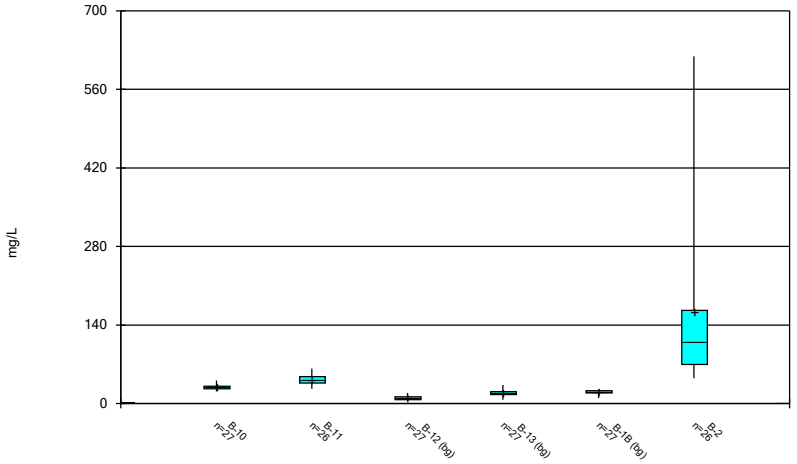
Box & Whiskers Plot



Constituent: Selenium, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Box & Whiskers Plot



Constituent: Sulfate, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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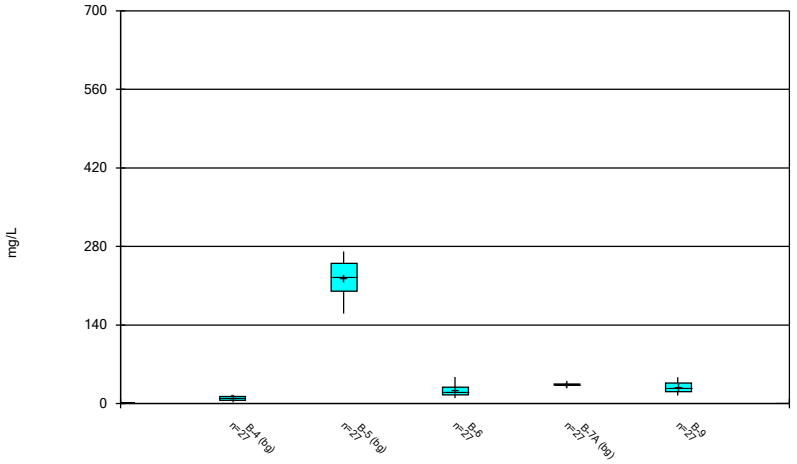
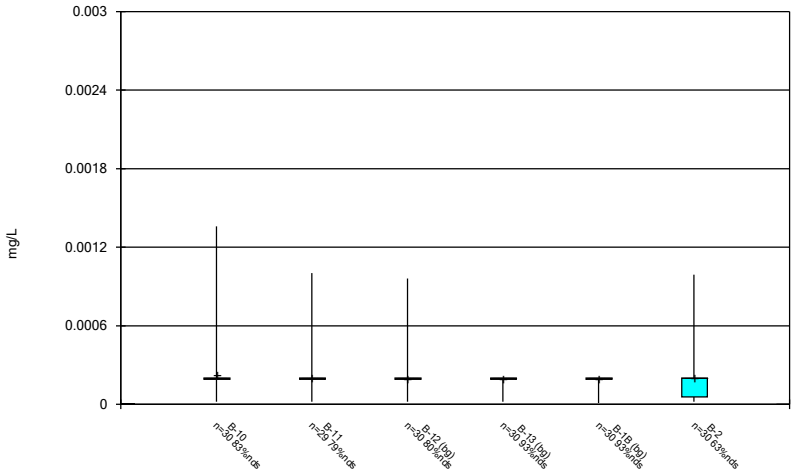
Box & Whiskers Plot



Constituent: Sulfate, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Thallium, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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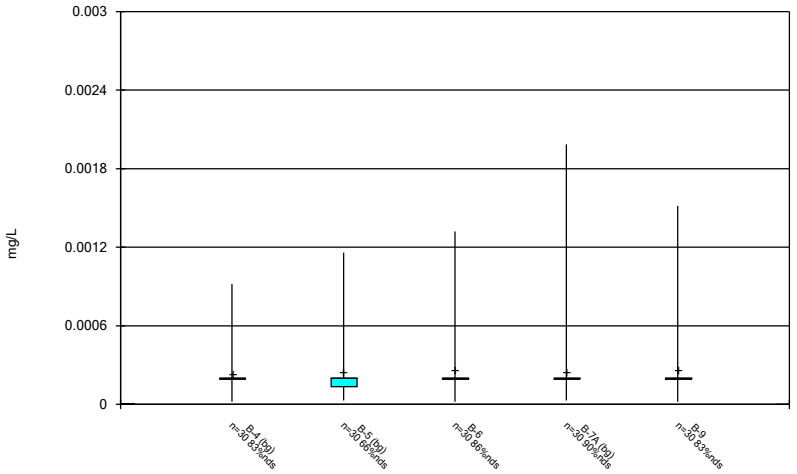
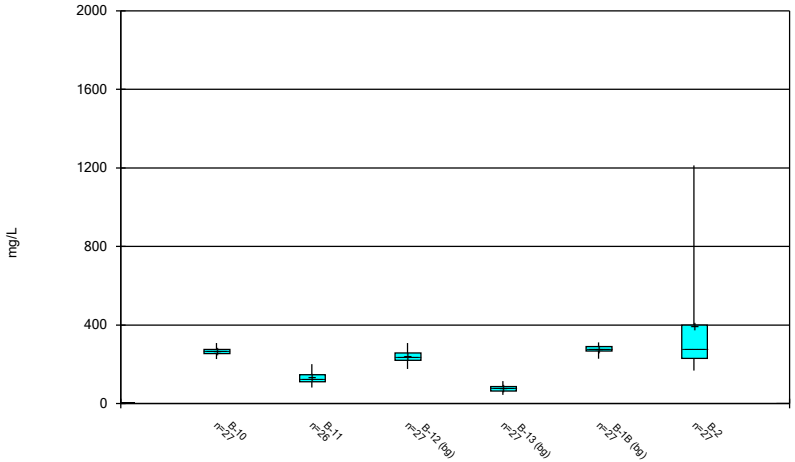
Box & Whiskers Plot



Constituent: Thallium, total Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

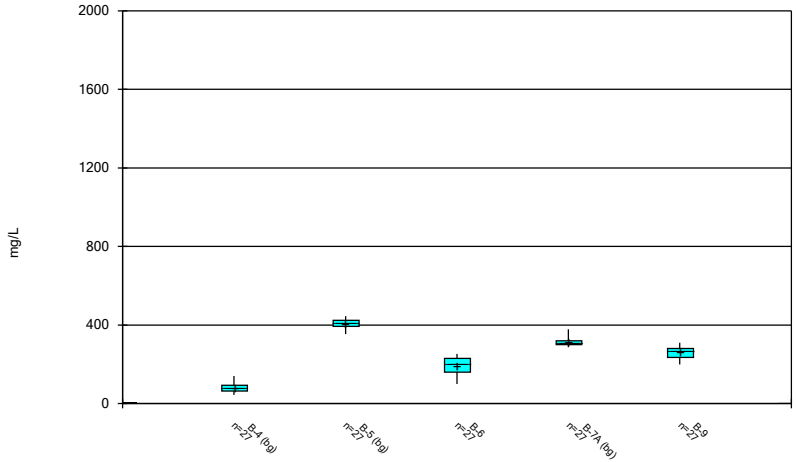
Box & Whiskers Plot



Constituent: Total Dissolved Solids [TDS] Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Total Dissolved Solids [TDS] Analysis Run 10/31/2024 3:47 PM
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

FIGURE C
Outlier Summary

Outlier Summary

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 10/31/2024, 3:20 PM

	B-11 Arsenic, total (mg/L)	B-11 Barium, total (mg/L)	B-2 Barium, total (mg/L)	B-11 Beryllium, total (mg/L)	B-2 Beryllium, total (mg/L)	B-11 Cadmium, total (mg/L)	B-6 Chloride, total (mg/L)	B-11 Chromium, total (mg/L)	B-12 Chromium, total (mg/L)	B-11 Cobalt, total (mg/L)
7/19/2016										
9/14/2016	0.032 (o)	0.494 (o)		0.006 (o)		0.004 (o)		0.108 (o)		0.025 (o)
10/7/2016										
11/8/2016			0.543 (o)		0.003 (o)				0.022 (o)	
10/23/2018							12.2 (o)			
6/10/2019										
6/11/2019										
8/27/2019										
6/19/2023										

	B-12 Cobalt, total (mg/L)	B-2 Cobalt, total (mg/L)	B-2 Fluoride, total (mg/L)	B-11 Lead, total (mg/L)	B-12 Lead, total (mg/L)	B-2 Lead, total (mg/L)	B-10 Lithium, total (mg/L)	B-11 Lithium, total (mg/L)	B-12 Lithium, total (mg/L)	B-13 Lithium, total (mg/L)
7/19/2016			0.3361 (J,o)							
9/14/2016		0.015 (o)		0.049 (o)				0.079 (o)		
10/7/2016										
11/8/2016	0.023 (o)	0.031 (o)			0.015 (o)	0.026 (o)				
10/23/2018										
6/10/2019							<0.1 (o)		<0.1 (o)	<0.1 (o)
6/11/2019										
8/27/2019	0.0112 (o)									
6/19/2023										

	B-1B Lithium, total (mg/L)	B-2 Lithium, total (mg/L)	B-4 Lithium, total (mg/L)	B-5 Lithium, total (mg/L)	B-6 Lithium, total (mg/L)	B-7A Lithium, total (mg/L)	B-9 Lithium, total (mg/L)	B-2 Sulfate, total (mg/L)
7/19/2016								
9/14/2016								
10/7/2016					0.016 (o)			
11/8/2016								
10/23/2018								
6/10/2019	<0.1 (o)				<0.1 (o)	<0.1 (o)		
6/11/2019		<0.1 (o)	<0.1 (o)	<0.1 (o)			<0.1 (o)	
8/27/2019								
6/19/2023								292 (o)

Tukey's Outlier Test - Upgradient wells - Significant Results

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 10/31/2024, 12:21 AM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Barium, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.123,0.123,0.123,0.112,0.112,0.112,0.112,0.112,0**	**NP**	**NaN**	**180**	**0.06011**	**0.02717**	**x^6**	**ChiSquared**
Boron, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.04,0.04,0.04,0.04236,0.0579,0.0382,0.03844,0.05**	**NP**	**NaN**	**156**	**0.02481**	**0.01591**	**x^6**	**ChiSquared**
Chromium, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.022,0.004,0.004,0.003,0.003,0.003,0.003,0.003,0**	**NP**	**NaN**	**180**	**0.001353**	**0.001943**	**x^4**	**ChiSquared**
Cobalt, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.003362,0.002846,0.002534,0.002315,0.023,0.00176**	**NP**	**NaN**	**180**	**0.000922**	**0.002042**	**x^3**	**ChiSquared**
Combined Radium 226 + 228 (pCi/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**4.62,8.375,8.79,4.63,5.15,4.49,6.51,5.96,4.73,5.3**	**NP**	**NaN**	**174**	**2.306**	**2.007**	**x^5**	**ChiSquared**
Fluoride, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.5955,0.4424,0.4087,0.4557,0.53,0.4551,0.416,0.4**	**NP**	**NaN**	**186**	**0.177**	**0.1222**	**x^6**	**ChiSquared**
Lithium, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.05,0.05,0.05,0.028,0.028,0.028,0.041,0.027,0.02**	**NP**	**NaN**	**180**	**0.01058**	**0.01321**	**x^6**	**ChiSquared**
Selenium, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.0014,0.0001,0.0001,0.0001,0.0001,0.00009,0.0016**	**NP**	**NaN**	**180**	**0.006441**	**0.01344**	**normal**	**ChiSquared**

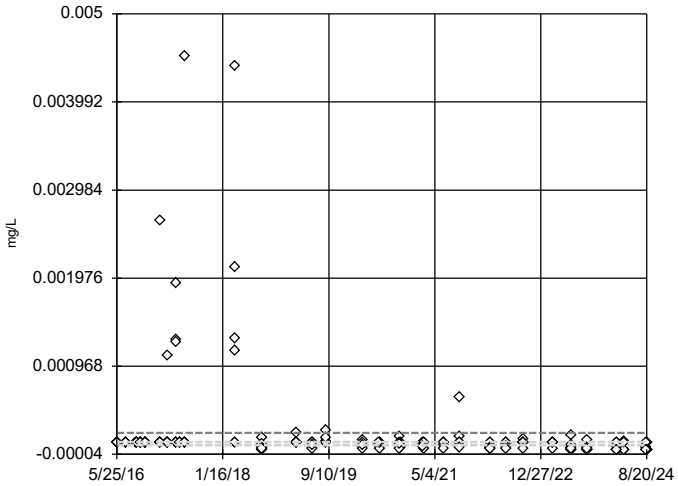
Tukey's Outlier Test - Upgradient Wells - All Results

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 10/31/2024, 12:21 AM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Antimony, total (mg/L)	B-12,B-13,B-1B,B-...	n/a	n/a	NP	NaN	180	0.000202	0.0005628	unknown	ChiSquared
Arsenic, total (mg/L)	B-12,B-13,B-1B,B-...	n/a	n/a	NP	NaN	180	0.0009871	0.001833	unknown	ChiSquared
Barium, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.123,0.123,0.123,0.112,0.112,0.112,0.112,0.112,0**	**NP**	**NaN**	**180**	**0.06011**	**0.02717**	**x^6**	**ChiSquared**
Beryllium, total (mg/L)	B-12,B-13,B-1B,B-...	n/a	n/a	NP	NaN	180	0.0001573	0.0001892	unknown	ChiSquared
Boron, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.04,0.04,0.04,0.04236,0.0579,0.0382,0.03844,0.05**	**NP**	**NaN**	**156**	**0.02481**	**0.01591**	**x^6**	**ChiSquared**
Cadmium, total (mg/L)	B-12,B-13,B-1B,B-...	n/a	n/a	NP	NaN	180	0.00006148	0.0001015	unknown	ChiSquared
Chromium, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.022,0.004,0.004,0.003,0.003,0.003,0.003,0.003,0**	**NP**	**NaN**	**180**	**0.001353**	**0.001943**	**x^4**	**ChiSquared**
Cobalt, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.003362,0.002846,0.002534,0.002315,0.023,0.00176**	**NP**	**NaN**	**180**	**0.000922**	**0.002042**	**x^3**	**ChiSquared**
Combined Radium 226 + 228 (pCi/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**4.62,8.375,8.79,4.63,5.15,4.49,6.51,5.96,4.73,5.3**	**NP**	**NaN**	**174**	**2.306**	**2.007**	**x^5**	**ChiSquared**
Fluoride, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.5955,0.4424,0.4087,0.4557,0.53,0.4551,0.416,0.4**	**NP**	**NaN**	**186**	**0.177**	**0.1222**	**x^6**	**ChiSquared**
Lead, total (mg/L)	B-12,B-13,B-1B,B-...	n/a	n/a	NP	NaN	180	0.000443	0.001197	unknown	ChiSquared
Lithium, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.05,0.05,0.05,0.028,0.028,0.028,0.041,0.027,0.02**	**NP**	**NaN**	**180**	**0.01058**	**0.01321**	**x^6**	**ChiSquared**
Mercury, total (mg/L)	B-12,B-13,B-1B,B-...	n/a	n/a	NP	NaN	180	0.000008361	0.00001132	unknown	ChiSquared
Molybdenum, total (mg/L)	B-12,B-13,B-1B,B-...	n/a	n/a	NP	NaN	180	0.0006323	0.000588	unknown	ChiSquared
Selenium, total (mg/L)	**B-12,B-13,B-1B,B-...**	**Yes**	**0.0014,0.0001,0.0001,0.0001,0.0001,0.00009,0.0016**	**NP**	**NaN**	**180**	**0.006441**	**0.01344**	**normal**	**ChiSquared**
Thallium, total (mg/L)	B-12,B-13,B-1B,B-...	n/a	n/a	NP	NaN	180	0.0002174	0.000207	unknown	ChiSquared

Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 180

No outliers found.
Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Antimony, total Analysis Run 10/31/2024 11:49 AM View: Upgradient Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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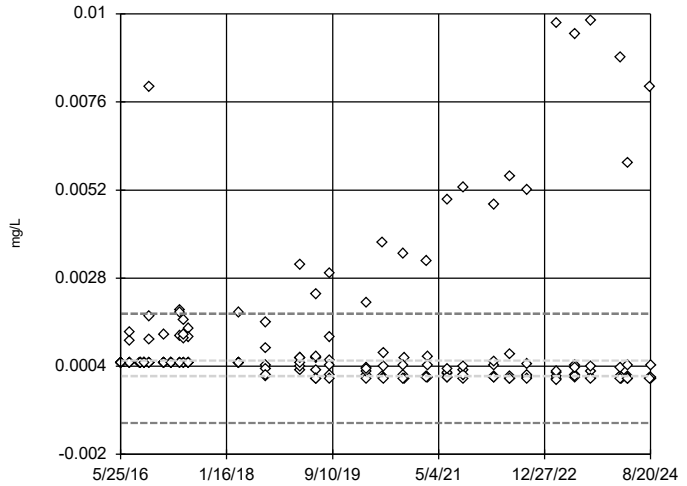
Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 180

No outliers found.
Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Arsenic, total Analysis Run 10/31/2024 11:49 AM View: Upgradient Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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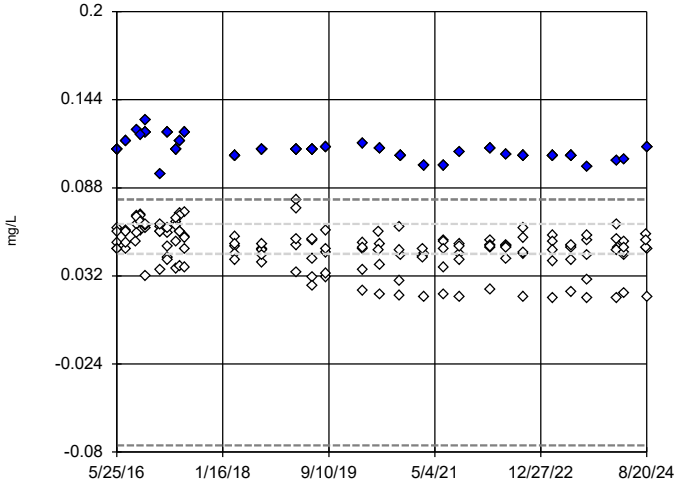
Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 180

Outliers are drawn as solid.
Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.08056, low cutoff = -0.07573, based on IQR multiplier of 3.

Constituent: Barium, total Analysis Run 10/31/2024 11:49 AM View: Upgradient Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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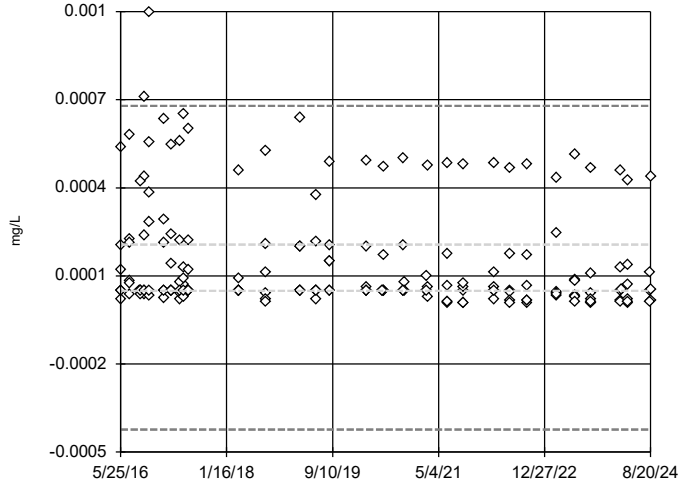
Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 180

No outliers found.
Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

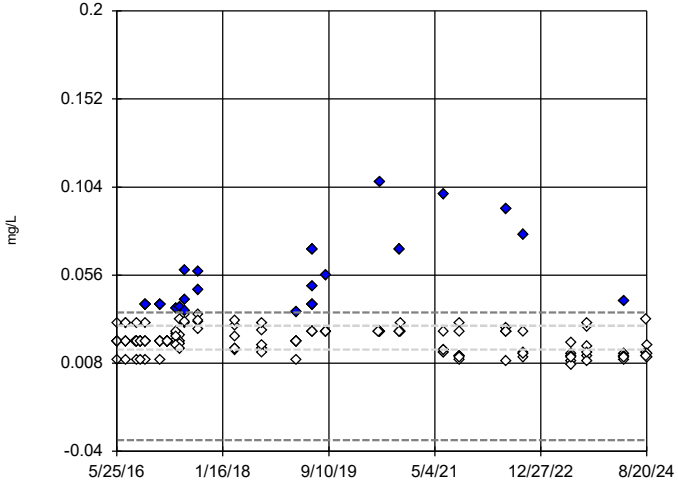
The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Beryllium, total Analysis Run 10/31/2024 11:49 AM View: Upgradient Outliers

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 156

Outliers are drawn as solid.
Tukey's method selected by user.

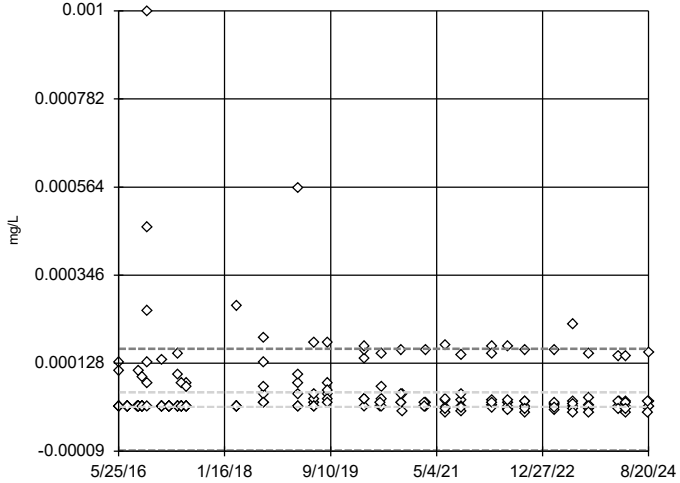
Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.03568, low cutoff = -0.03393, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 10/31/2024 11:49 AM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 180

No outliers found.
Tukey's method selected by user.

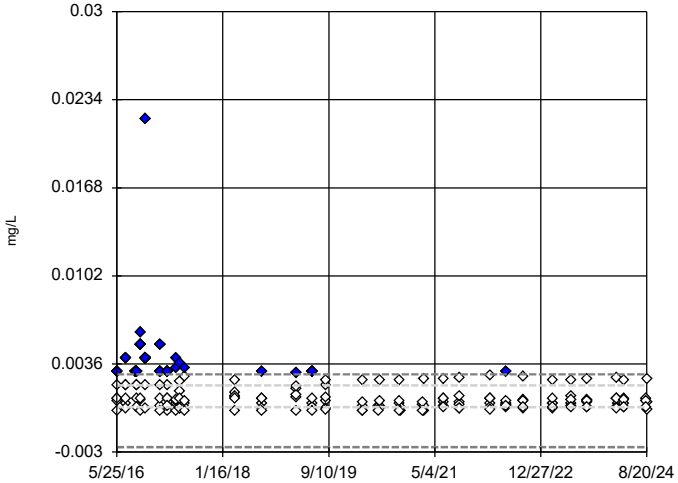
Data were x^4 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Cadmium, total Analysis Run 10/31/2024 11:49 AM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 180

Outliers are drawn as solid.
Tukey's method selected by user.

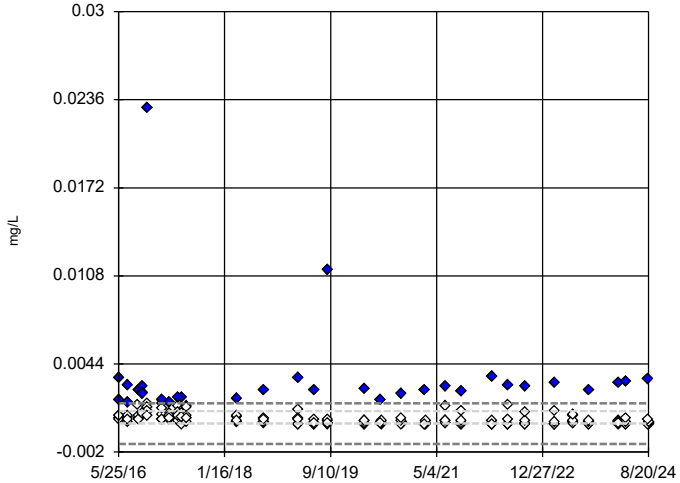
Data were x^4 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.002828, low cutoff = -0.002631, based on IQR multiplier of 3.

Constituent: Chromium, total Analysis Run 10/31/2024 11:49 AM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 180

Outliers are drawn as solid.
Tukey's method selected by user.

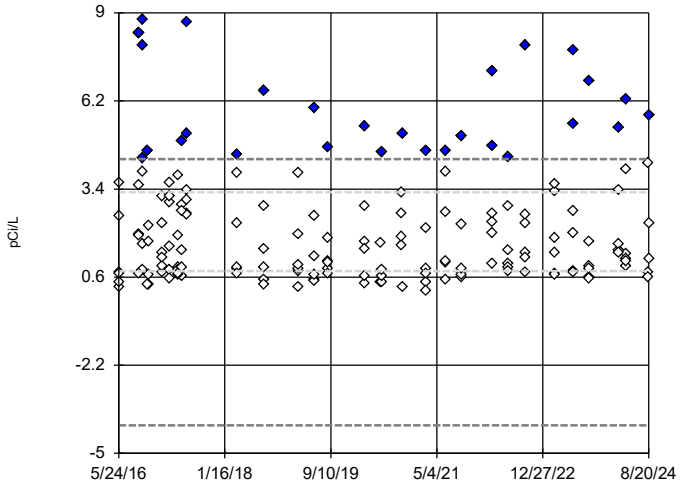
Data were cube transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.00155, low cutoff = -0.001408, based on IQR multiplier of 3.

Constituent: Cobalt, total Analysis Run 10/31/2024 11:49 AM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 174

Outliers are drawn as solid.
Tukey's method selected by user.

Data were x^5 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 4.355, low cutoff = -4.111, based on IQR multiplier of 3.

Constituent: Combined Radium 226 + 228 Analysis Run 10/31/2024 11:49 AM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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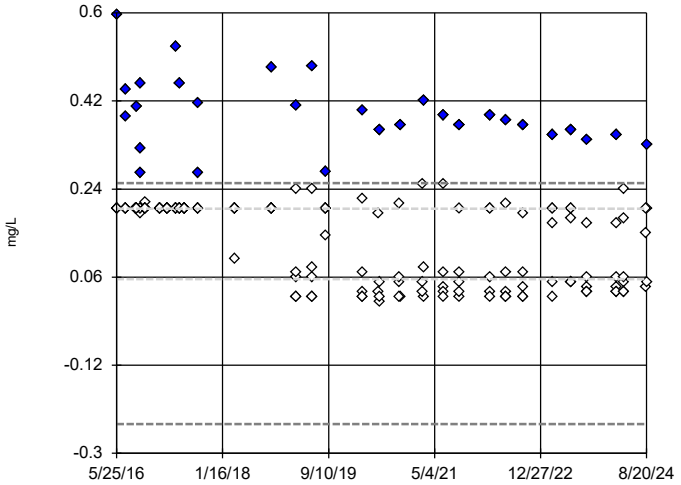
Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 186

Outliers are drawn as solid.
Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.252, low cutoff = -0.2402, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 10/31/2024 11:49 AM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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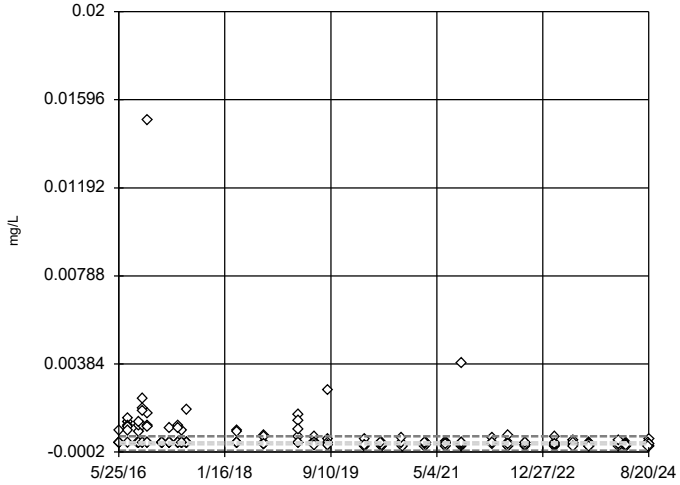
Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 180

No outliers found.
Tukey's method selected by user.

Data were x^4 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Lead, total Analysis Run 10/31/2024 11:49 AM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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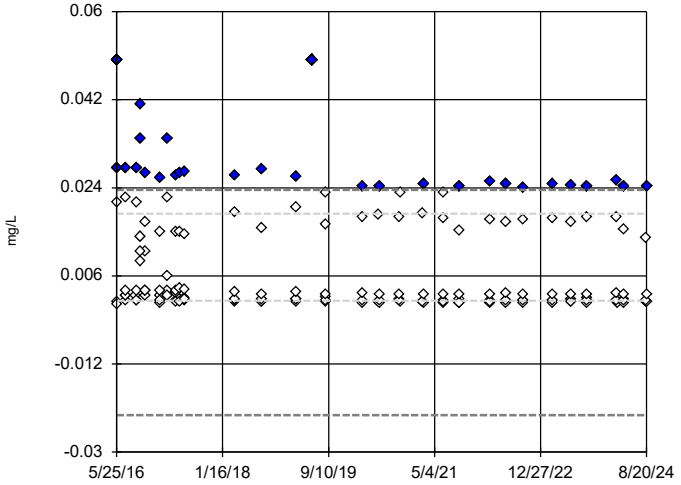
Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 180

Outliers are drawn as solid.
Tukey's method selected by user.

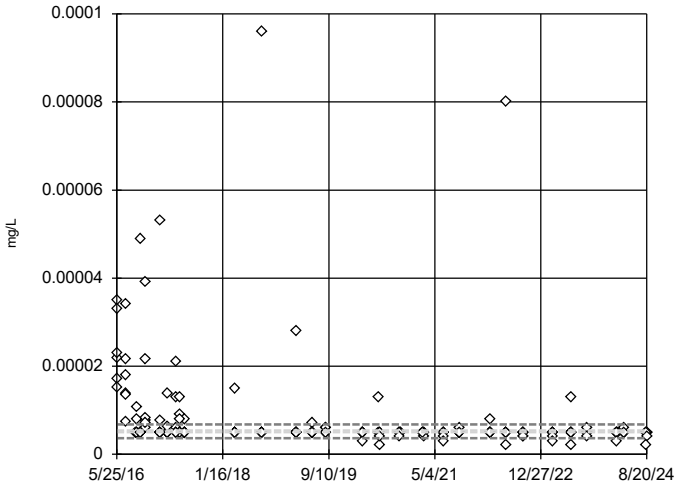
Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.02356, low cutoff = -0.02246, based on IQR multiplier of 3.

Constituent: Lithium, total Analysis Run 10/31/2024 11:49 AM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 180

No outliers found.
Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Mercury, total Analysis Run 10/31/2024 11:49 AM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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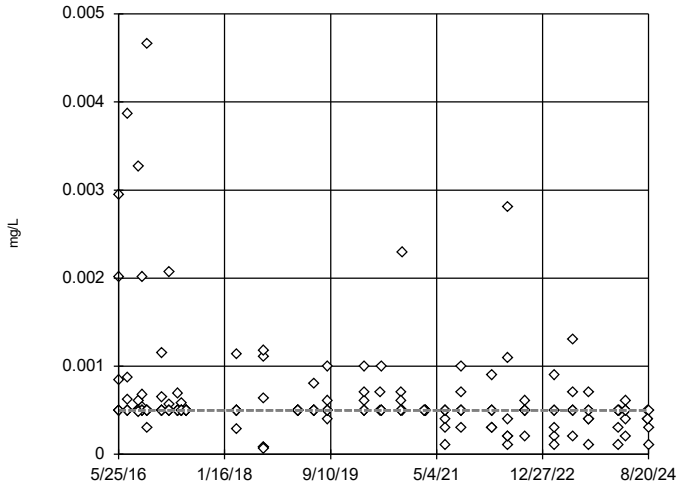
Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 180

No outliers found.
Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Molybdenum, total Analysis Run 10/31/2024 11:49 AM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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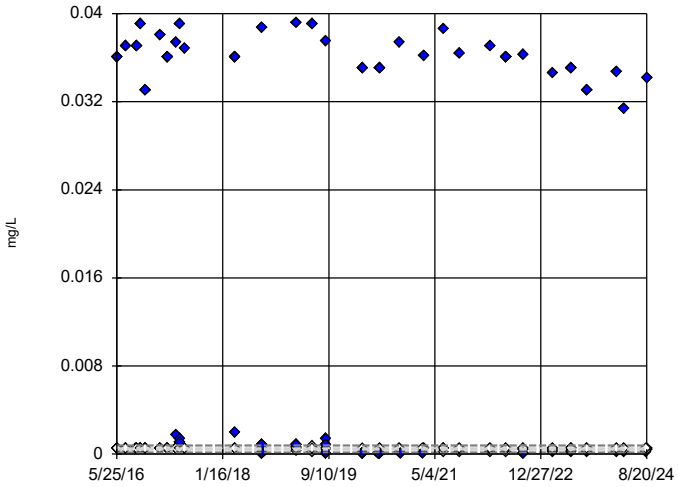
Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 180

Outliers are drawn as solid.
Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

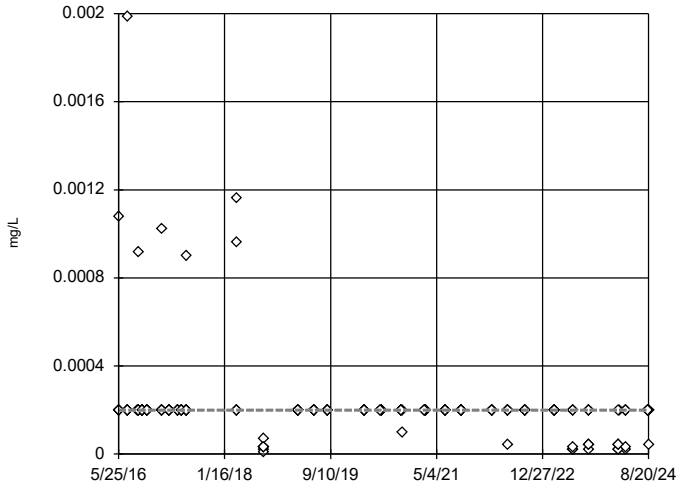
High cutoff = 0.000785, low cutoff = 0.00012, based on IQR multiplier of 3.

Constituent: Selenium, total Analysis Run 10/31/2024 11:49 AM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG

Tukey's Outlier Screening, Pooled Background

B-12,B-13,B-1B,B-4,B-5,B-7A



n = 180

No outliers found.
Tukey's method selected by user.

Data were cube transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Thallium, total Analysis Run 10/31/2024 11:49 AM View: Upgradient Outliers
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

FIGURE D
Upgradient Trend Tests

Appendix III - Upgradient Wells Trend Test - All Results (No Significant)

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 10/31/2024, 12:39 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron, total (mg/L)	B-12 (bg)	-0.0009131	-76	-111	No	25	12	n/a	n/a	0.01	NP
Boron, total (mg/L)	B-13 (bg)	0	-1	-111	No	25	16	n/a	n/a	0.01	NP
Boron, total (mg/L)	B-1B (bg)	-0.0005383	-55	-111	No	25	12	n/a	n/a	0.01	NP
Boron, total (mg/L)	B-4 (bg)	0.005464	85	111	No	25	0	n/a	n/a	0.01	NP
Boron, total (mg/L)	B-5 (bg)	0.001972	55	111	No	25	28	n/a	n/a	0.01	NP
Boron, total (mg/L)	B-7A (bg)	-0.0005982	-59	-111	No	25	20	n/a	n/a	0.01	NP

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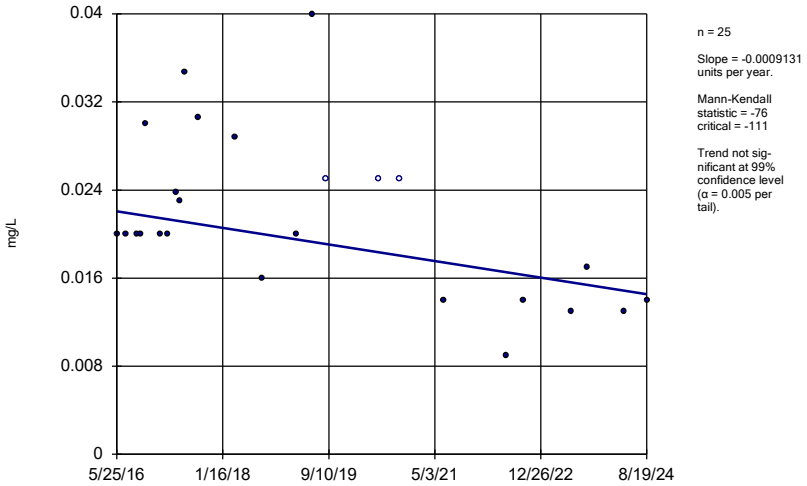
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-12 (bg)



n = 25

Slope = -0.0009131 units per year.

Mann-Kendall statistic = -76
critical = -111

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 10/31/2024 12:37 AM View: Appendix III - Trend Tests
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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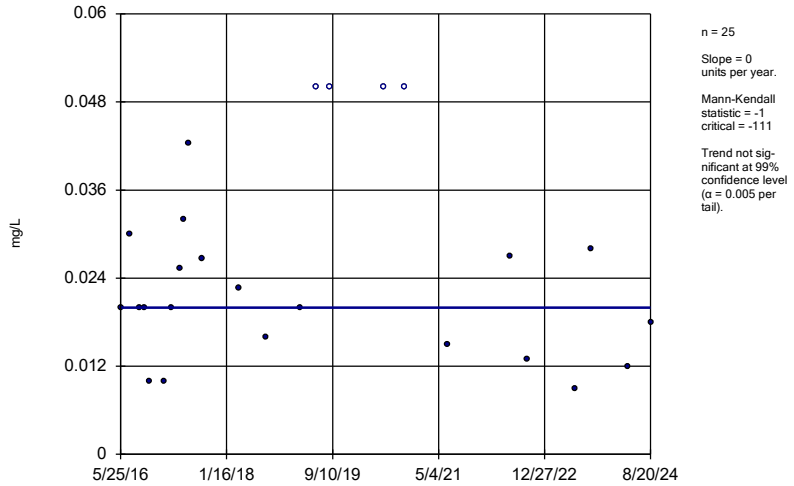
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-13 (bg)



n = 25

Slope = 0 units per year.

Mann-Kendall statistic = -1
critical = -111

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 10/31/2024 12:37 AM View: Appendix III - Trend Tests
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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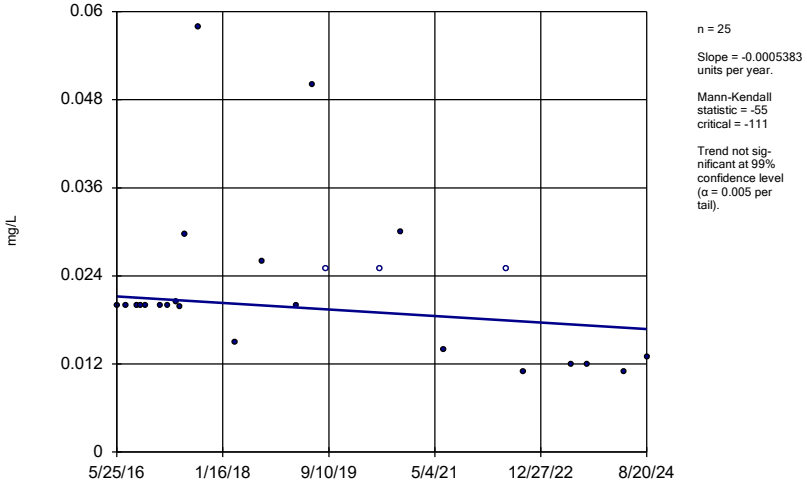
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-1B (bg)



n = 25

Slope = -0.0005383 units per year.

Mann-Kendall statistic = -55
critical = -111

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 10/31/2024 12:37 AM View: Appendix III - Trend Tests
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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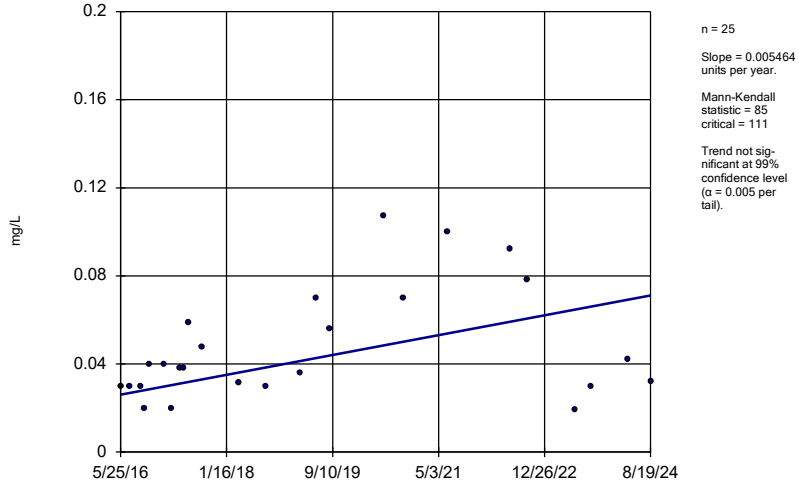
Sen's Slope Estimator

B-4 (bg)



n = 25

Slope = 0.005464 units per year.

Mann-Kendall statistic = 85
critical = 111

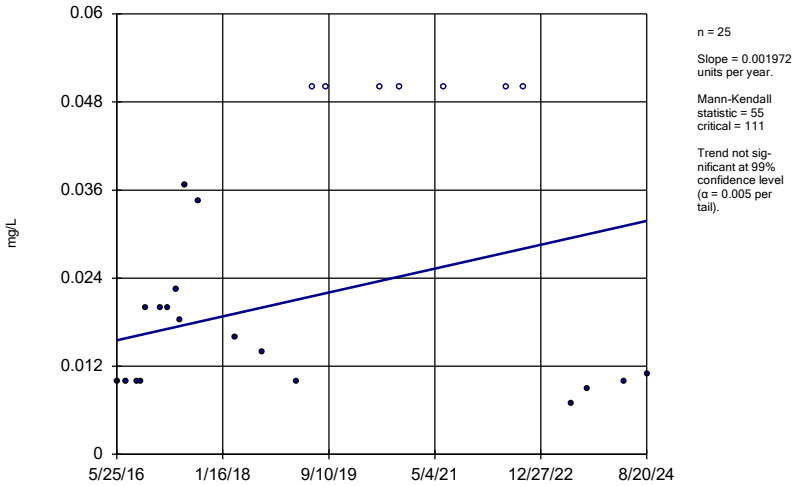
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 10/31/2024 12:37 AM View: Appendix III - Trend Tests
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-5 (bg)



n = 25

Slope = 0.001972 units per year.

Mann-Kendall statistic = 55
critical = 111

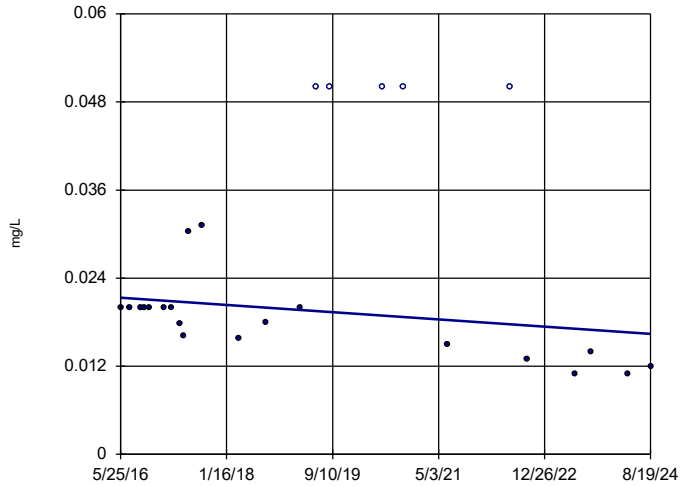
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 10/31/2024 12:37 AM View: Appendix III - Trend Tests
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

B-7A (bg)



n = 25

Slope = -0.0005982 units per year.

Mann-Kendall statistic = -59
critical = -111

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 10/31/2024 12:37 AM View: Appendix III - Trend Tests
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

FIGURE E

Intrawell PLs

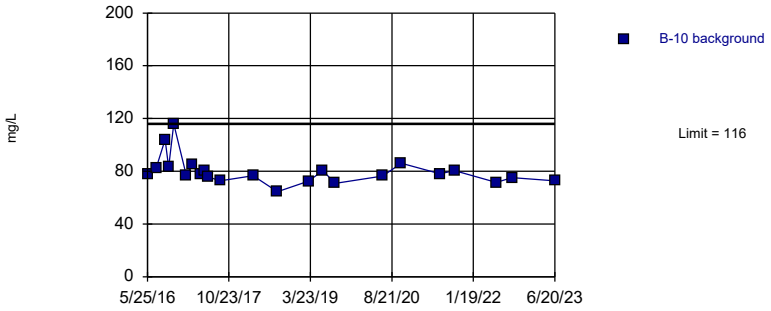
Appendix III - Intrawell Prediction Limits - All Results

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 10/29/2024, 1:19 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Calcium, total (mg/L)	B-10	116	n/a	n/a	1 future	n/a	23	n/a	n/a	0	n/a	n/a	0.003415	NP Intra (normality) 1 of 2
Calcium, total (mg/L)	B-11	19.79	n/a	n/a	1 future	n/a	22	13.63	3.033	0	None	No	0.001504	Param Intra 1 of 2
Calcium, total (mg/L)	B-12	74.3	n/a	n/a	1 future	n/a	23	60.86	6.666	0	None	No	0.001504	Param Intra 1 of 2
Calcium, total (mg/L)	B-13	21.84	n/a	n/a	1 future	n/a	23	13.6	4.087	0	None	No	0.001504	Param Intra 1 of 2
Calcium, total (mg/L)	B-1B	96.53	n/a	n/a	1 future	n/a	23	86.98	4.734	0	None	No	0.001504	Param Intra 1 of 2
Calcium, total (mg/L)	B-2	50.36	n/a	n/a	1 future	n/a	20	28.57	10.59	0	None	No	0.001504	Param Intra 1 of 2
Calcium, total (mg/L)	B-4	41.5	n/a	n/a	1 future	n/a	23	3.323	1.546	0	None	sqrt(x)	0.001504	Param Intra 1 of 2
Calcium, total (mg/L)	B-5	18.75	n/a	n/a	1 future	n/a	23	16.63	1.048	0	None	No	0.001504	Param Intra 1 of 2
Calcium, total (mg/L)	B-6	58.47	n/a	n/a	1 future	n/a	23	43.77	7.287	0	None	No	0.001504	Param Intra 1 of 2
Calcium, total (mg/L)	B-7A	112.2	n/a	n/a	1 future	n/a	23	98.27	6.928	0	None	No	0.001504	Param Intra 1 of 2
Calcium, total (mg/L)	B-9	130	n/a	n/a	1 future	n/a	23	4.551	0.157	0	None	ln(x)	0.001504	Param Intra 1 of 2
Chloride, total (mg/L)	B-10	12.36	n/a	n/a	1 future	n/a	24	8.968	1.692	0	None	No	0.001504	Param Intra 1 of 2
Chloride, total (mg/L)	B-11	9.816	n/a	n/a	1 future	n/a	23	2.286	0.4199	0	None	sqrt(x)	0.001504	Param Intra 1 of 2
Chloride, total (mg/L)	B-12	12.89	n/a	n/a	1 future	n/a	24	9.78	1.554	0	None	No	0.001504	Param Intra 1 of 2
Chloride, total (mg/L)	B-13	5.227	n/a	n/a	1 future	n/a	24	2.915	1.154	0	None	No	0.001504	Param Intra 1 of 2
Chloride, total (mg/L)	B-1B	5.53	n/a	n/a	1 future	n/a	24	n/a	n/a	0	n/a	n/a	0.003124	NP Intra (normality) 1 of 2
Chloride, total (mg/L)	B-2	8.88	n/a	n/a	1 future	n/a	24	5.256	1.809	0	None	No	0.001504	Param Intra 1 of 2
Chloride, total (mg/L)	B-4	5.962	n/a	n/a	1 future	n/a	11	3.214	1.145	0	None	No	0.001504	Param Intra 1 of 2
Chloride, total (mg/L)	B-5	11.16	n/a	n/a	1 future	n/a	24	7.986	1.585	0	None	No	0.001504	Param Intra 1 of 2
Chloride, total (mg/L)	B-6	8.695	n/a	n/a	1 future	n/a	23	7.158	0.762	0	None	No	0.001504	Param Intra 1 of 2
Chloride, total (mg/L)	B-7A	7.28	n/a	n/a	1 future	n/a	24	n/a	n/a	0	n/a	n/a	0.003124	NP Intra (normality) 1 of 2
Chloride, total (mg/L)	B-9	7.78	n/a	n/a	1 future	n/a	24	5.303	1.236	0	None	No	0.001504	Param Intra 1 of 2
Fluoride, total (mg/L)	B-10	0.3304	n/a	n/a	1 future	n/a	27	n/a	n/a	40.74	n/a	n/a	0.002502	NP Intra (normality) 1 of 2
Fluoride, total (mg/L)	B-11	0.2	n/a	n/a	1 future	n/a	26	n/a	n/a	61.54	n/a	n/a	0.002667	NP Intra (NDs) 1 of 2
Fluoride, total (mg/L)	B-12	0.2	n/a	n/a	1 future	n/a	27	n/a	n/a	48.15	n/a	n/a	0.002502	NP Intra (normality) 1 of 2
Fluoride, total (mg/L)	B-13	0.2121	n/a	n/a	1 future	n/a	27	n/a	n/a	59.26	n/a	n/a	0.002502	NP Intra (NDs) 1 of 2
Fluoride, total (mg/L)	B-1B	0.5611	n/a	n/a	1 future	n/a	27	0.1458	0.08571	14.81	None	x^2	0.001504	Param Intra 1 of 2
Fluoride, total (mg/L)	B-2	0.2	n/a	n/a	1 future	n/a	26	n/a	n/a	50	n/a	n/a	0.002667	NP Intra (normality) 1 of 2
Fluoride, total (mg/L)	B-4	0.2	n/a	n/a	1 future	n/a	27	n/a	n/a	59.26	n/a	n/a	0.002502	NP Intra (NDs) 1 of 2
Fluoride, total (mg/L)	B-5	0.2728	n/a	n/a	1 future	n/a	27	n/a	n/a	48.15	n/a	n/a	0.002502	NP Intra (normality) 1 of 2
Fluoride, total (mg/L)	B-6	0.2066	n/a	n/a	1 future	n/a	27	n/a	n/a	62.96	n/a	n/a	0.002502	NP Intra (NDs) 1 of 2
Fluoride, total (mg/L)	B-7A	0.3892	n/a	n/a	1 future	n/a	27	n/a	n/a	37.04	n/a	n/a	0.002502	NP Intra (normality) 1 of 2
Fluoride, total (mg/L)	B-9	0.3556	n/a	n/a	1 future	n/a	27	n/a	n/a	37.04	n/a	n/a	0.002502	NP Intra (normality) 1 of 2
pH, field (SU)	B-10	8.279	6.123	n/a	1 future	n/a	27	2.676	0.1021	0	None	sqrt(x)	0.000752	Param Intra 1 of 2
pH, field (SU)	B-11	6.897	4.957	n/a	1 future	n/a	27	5.927	0.4919	0	None	No	0.000752	Param Intra 1 of 2
pH, field (SU)	B-12	8.52	6.3	n/a	1 future	n/a	27	n/a	n/a	0	n/a	n/a	0.005004	NP Intra (normality) 1 of 2
pH, field (SU)	B-13	7.259	4.5	n/a	1 future	n/a	27	5.88	0.6994	0	None	No	0.000752	Param Intra 1 of 2
pH, field (SU)	B-1B	8.051	6.414	n/a	1 future	n/a	27	7.233	0.415	0	None	No	0.000752	Param Intra 1 of 2
pH, field (SU)	B-2	6.93	5.142	n/a	1 future	n/a	28	6.036	0.4552	0	None	No	0.000752	Param Intra 1 of 2
pH, field (SU)	B-4	7.763	5.61	n/a	1 future	n/a	27	6.687	0.5459	0	None	No	0.000752	Param Intra 1 of 2
pH, field (SU)	B-5	6.409	4.379	n/a	1 future	n/a	27	5.394	0.5146	0	None	No	0.000752	Param Intra 1 of 2
pH, field (SU)	B-6	7.253	5.883	n/a	1 future	n/a	28	6.568	0.3488	0	None	No	0.000752	Param Intra 1 of 2
pH, field (SU)	B-7A	8.334	6.475	n/a	1 future	n/a	27	7.404	0.4711	0	None	No	0.000752	Param Intra 1 of 2
pH, field (SU)	B-9	8.103	6.287	n/a	1 future	n/a	27	7.195	0.4603	0	None	No	0.000752	Param Intra 1 of 2
Sulfate, total (mg/L)	B-10	35.78	n/a	n/a	1 future	n/a	24	28.68	3.546	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-11	62.57	n/a	n/a	1 future	n/a	23	43.56	9.427	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-12	17.2	n/a	n/a	1 future	n/a	24	9.848	3.671	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-13	31.17	n/a	n/a	1 future	n/a	24	19.53	5.814	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-1B	26.95	n/a	n/a	1 future	n/a	24	20.96	2.991	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-2	194.8	n/a	n/a	1 future	n/a	19	107.8	41.8	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-4	16.7	n/a	n/a	1 future	n/a	24	10.42	3.135	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-5	291.6	n/a	n/a	1 future	n/a	17	233.2	27.47	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-6	42.9	n/a	n/a	1 future	n/a	24	23.22	9.823	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-7A	36.87	n/a	n/a	1 future	n/a	24	33.68	1.593	0	None	No	0.001504	Param Intra 1 of 2
Sulfate, total (mg/L)	B-9	44.48	n/a	n/a	1 future	n/a	17	30.26	6.682	0	None	No	0.001504	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-10	300.9	n/a	n/a	1 future	n/a	24	264.5	18.17	0	None	No	0.001504	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-11	190	n/a	n/a	1 future	n/a	23	132.3	28.62	0	None	No	0.001504	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-12	304	n/a	n/a	1 future	n/a	24	242.6	30.65	0	None	No	0.001504	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-13	109.8	n/a	n/a	1 future	n/a	24	75.75	16.98	0	None	No	0.001504	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-1B	317.6	n/a	n/a	1 future	n/a	24	278.3	19.65	0	None	No	0.001504	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-2	522.3	n/a	n/a	1 future	n/a	20	17.26	2.718	0	None	sqrt(x)	0.001504	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-4	122.6	n/a	n/a	1 future	n/a	24	77.5	22.53	0	None	No	0.001504	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-5	453	n/a	n/a	1 future	n/a	24	406.1	23.4	0	None	No	0.001504	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-6	270.8	n/a	n/a	1 future	n/a	24	191.6	39.53	0	None	No	0.001504	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-7A	378	n/a	n/a	1 future	n/a	24	n/a	n/a	0	n/a	n/a	0.003124	NP Intra (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	B-9	314.5	n/a	n/a	1 future	n/a	24	255.7	29.35	0	None	No	0.001504	Param Intra 1 of 2

Prediction Limit

Intrawell Non-parametric, B-10

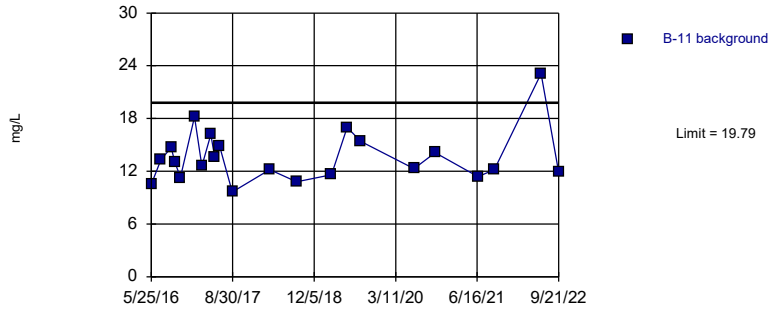


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 23 background values. Well-constituent pair annual alpha = 0.006819. Individual comparison alpha = 0.003415 (1 of 2). Assumes 1 future value.

Constituent: Calcium, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-11

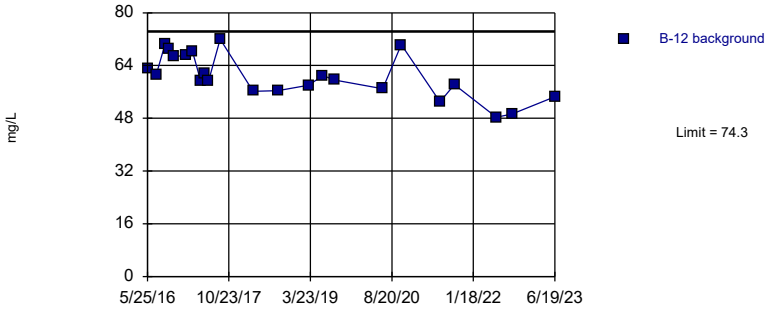


Background Data Summary: Mean=13.63, Std. Dev.=3.033, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8801, critical = 0.878. Kappa = 2.031 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-12 (bg)

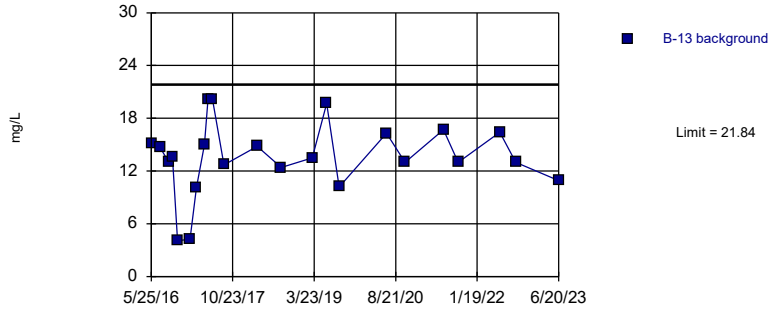


Background Data Summary: Mean=60.86, Std. Dev.=6.666, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9616, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-13 (bg)

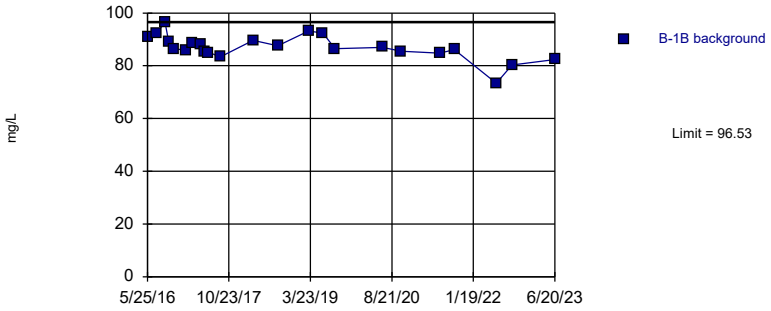


Background Data Summary: Mean=13.6, Std. Dev.=4.087, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9195, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-1B (bg)

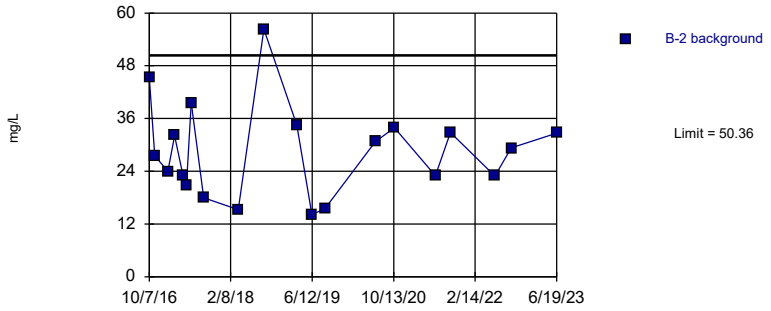


Background Data Summary: Mean=86.98, Std. Dev.=4.734, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9497, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-2

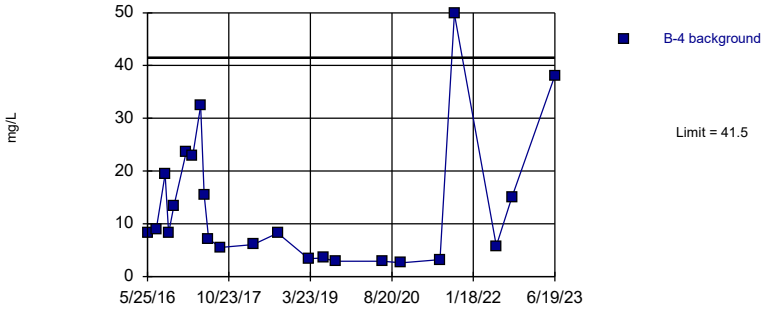


Background Data Summary: Mean=28.57, Std. Dev.=10.59, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9369, critical = 0.868. Kappa = 2.058 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-4 (bg)

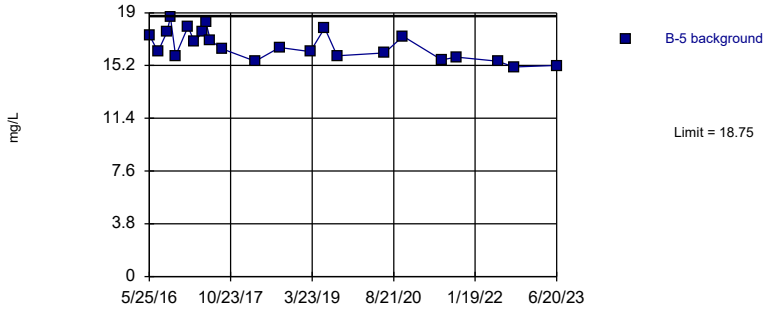


Background Data Summary (based on square root transformation): Mean=3.323, Std. Dev.=1.546, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8974, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-5 (bg)

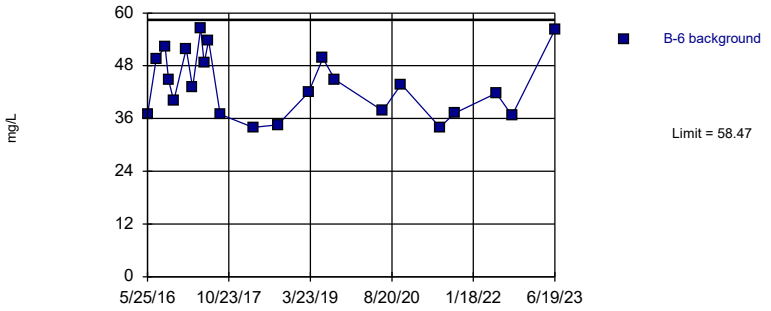


Background Data Summary: Mean=16.63, Std. Dev.=1.048, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9514, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-6



Background Data Summary: Mean=43.77, Std. Dev.=7.287, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9311, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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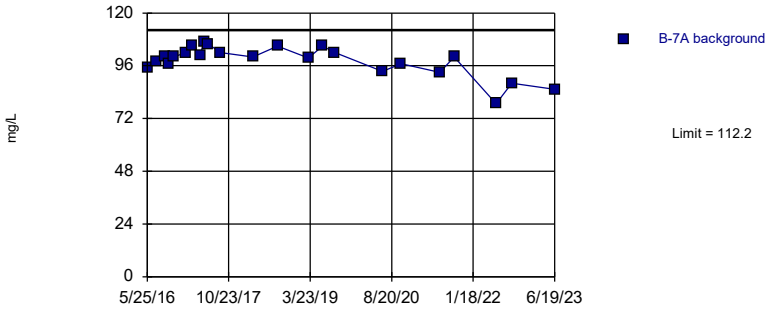
Prediction Limit

Intrawell Parametric, B-7A (bg)



Background Data Summary: Mean=98.27, Std. Dev.=6.928, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8881, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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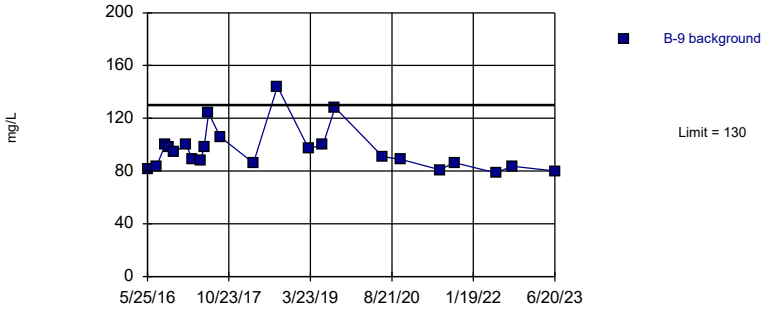
Prediction Limit

Intrawell Parametric, B-9



Background Data Summary (based on natural log transformation): Mean=4.551, Std. Dev.=0.157, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8813, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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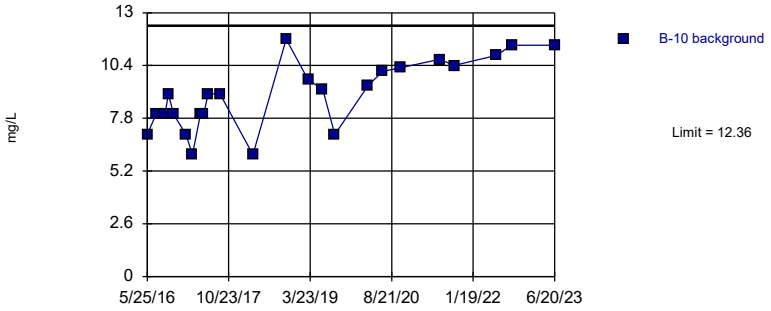
Prediction Limit

Intrawell Parametric, B-10

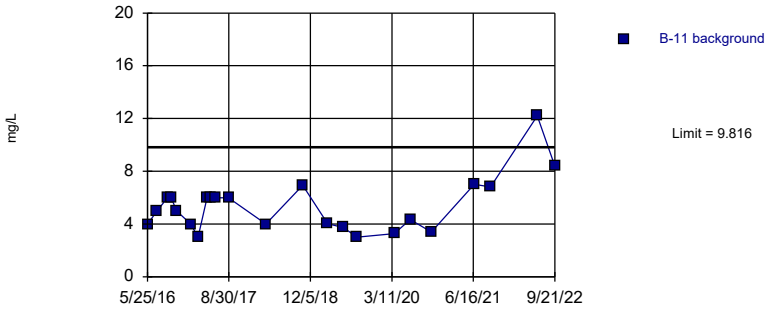


Background Data Summary: Mean=8.968, Std. Dev.=1.692, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9561, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-11

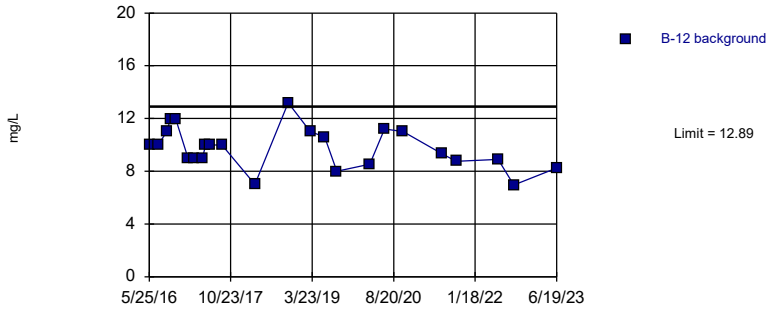


Background Data Summary (based on square root transformation): Mean=2.286, Std. Dev.=0.4199, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9152, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-12 (bg)

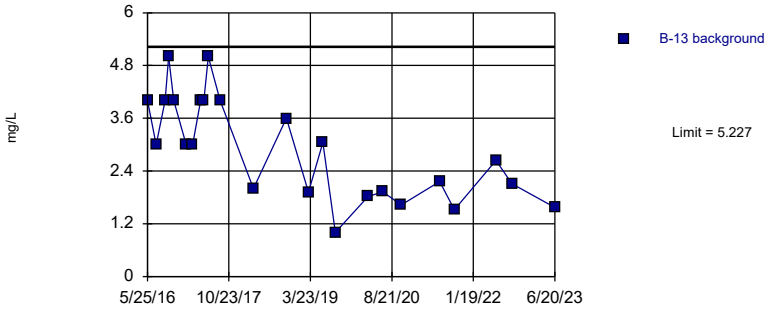


Background Data Summary: Mean=9.78, Std. Dev.=1.554, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9764, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-13 (bg)

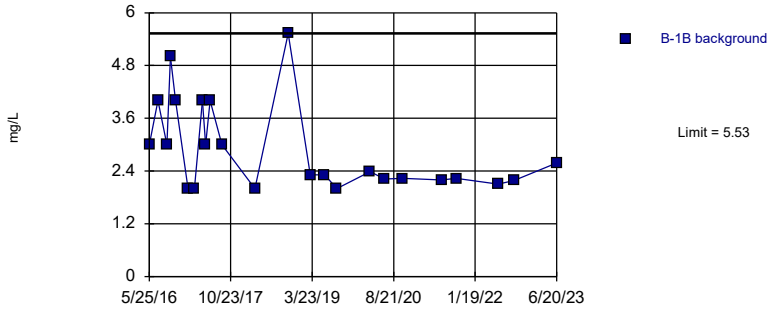


Background Data Summary: Mean=2.915, Std. Dev.=1.154, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9321, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Non-parametric, B-1B (bg)

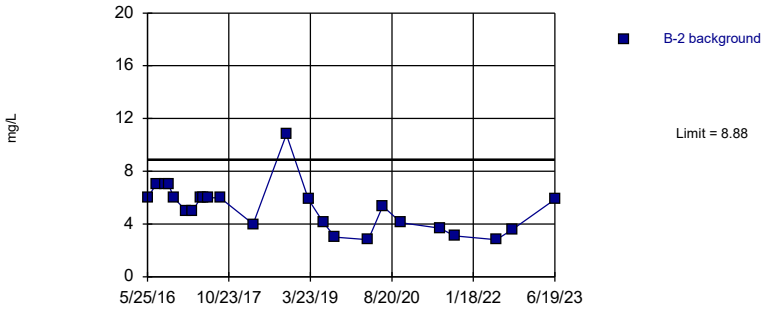


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 24 background values. Well-constituent pair annual alpha = 0.006238. Individual comparison alpha = 0.003124 (1 of 2). Assumes 1 future value.

Constituent: Chloride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-2



Background Data Summary: Mean=5.256, Std. Dev.=1.809, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8946, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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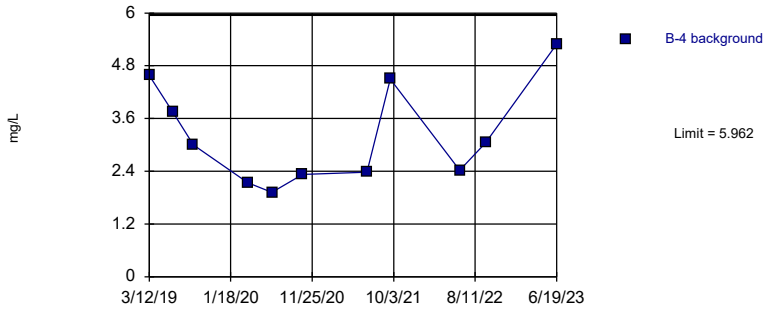
Prediction Limit

Intrawell Parametric, B-4 (bg)



Background Data Summary: Mean=3.214, Std. Dev.=1.145, n=11. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8945, critical = 0.85. Kappa = 2.4 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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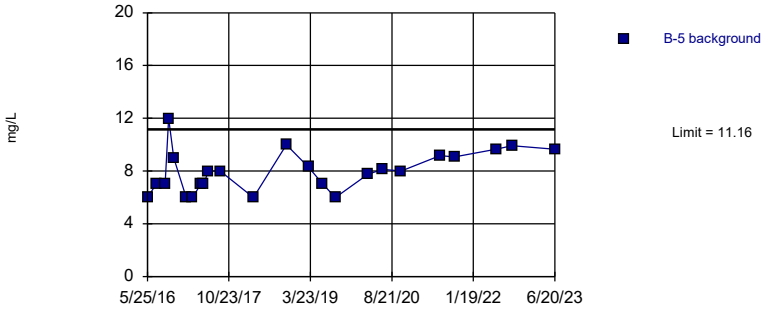
Prediction Limit

Intrawell Parametric, B-5 (bg)



Background Data Summary: Mean=7.986, Std. Dev.=1.585, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9302, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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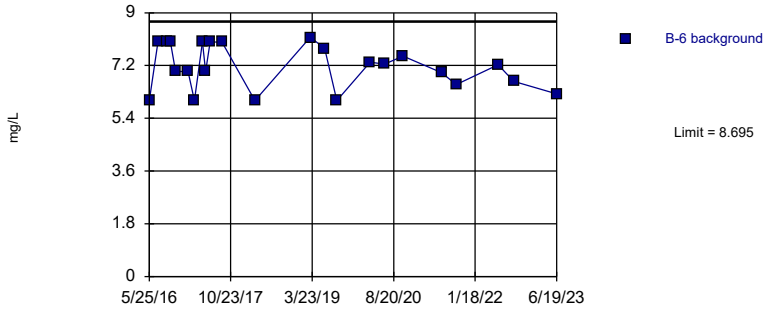
Prediction Limit

Intrawell Parametric, B-6

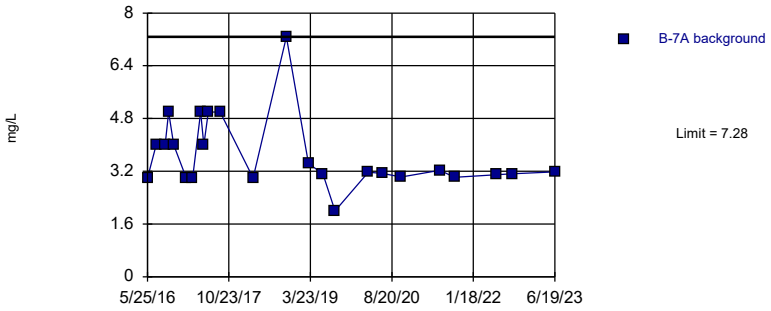


Background Data Summary: Mean=7.158, Std. Dev.=0.762, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8906, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Non-parametric, B-7A (bg)

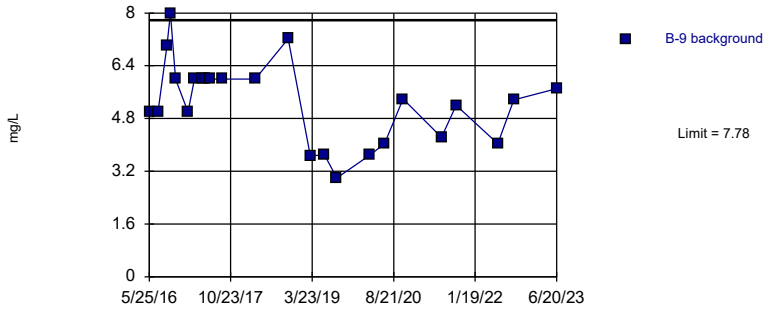


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 24 background values. Well-constituent pair annual alpha = 0.006238. Individual comparison alpha = 0.003124 (1 of 2). Assumes 1 future value.

Constituent: Chloride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-9



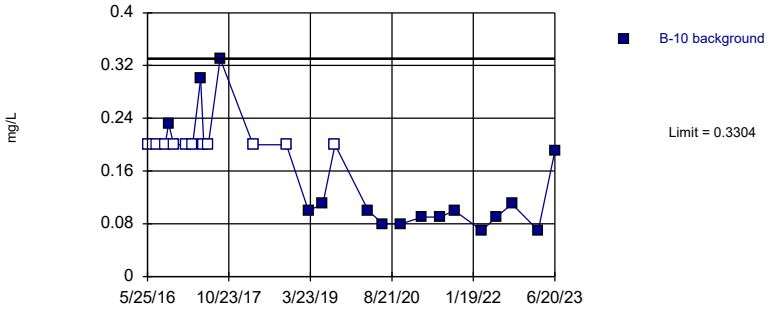
Background Data Summary: Mean=5.303, Std. Dev.=1.236, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.957, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-10



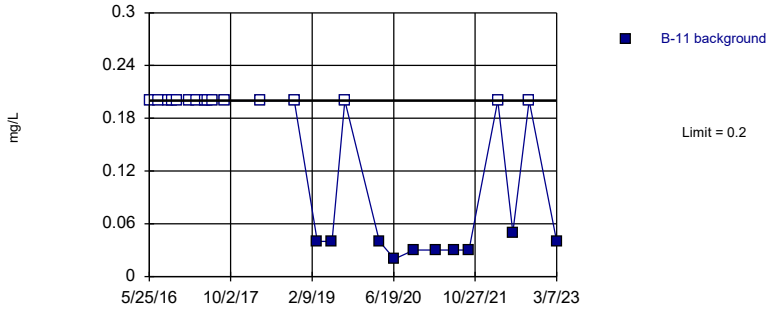
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 40.74% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-11



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 26 background values. 61.54% NDs. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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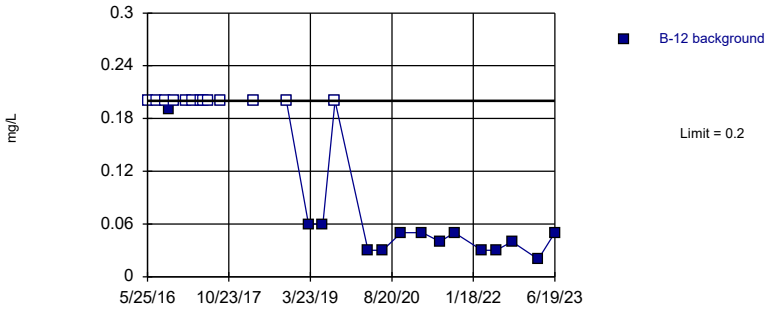
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-12 (bg)



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 48.15% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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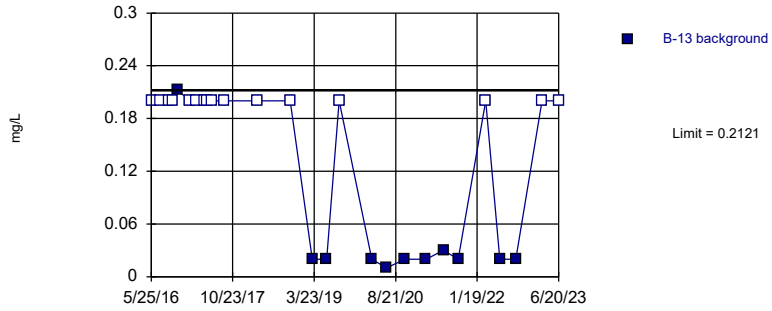
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-13 (bg)



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 59.26% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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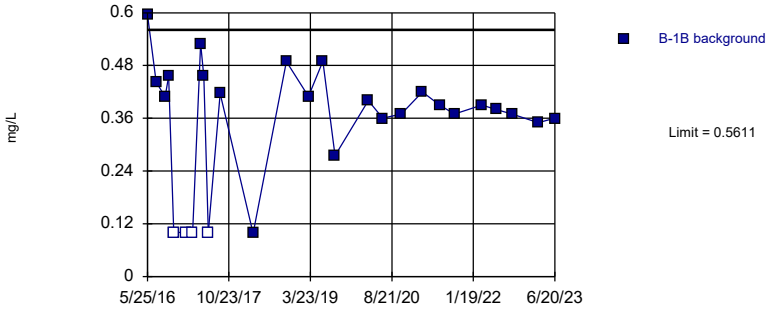
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Parametric, B-1B (bg)



Background Data Summary (based on square transformation): Mean=0.1458, Std. Dev.=0.08571, n=27, 14.81% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9284, critical = 0.894. Kappa = 1.972 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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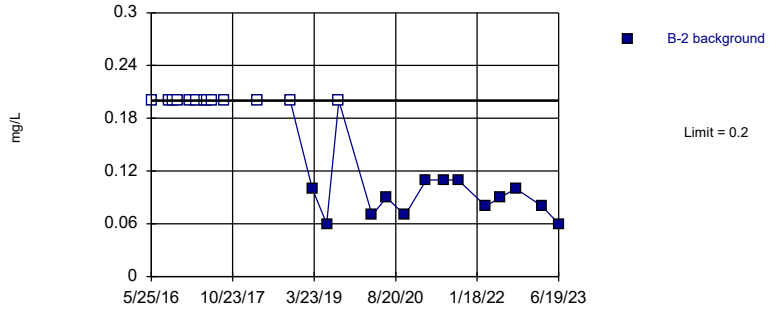
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-2



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 26 background values. 50% NDs. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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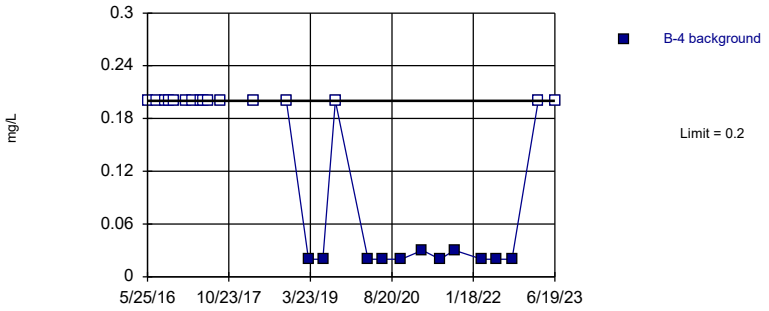
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-4 (bg)



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 59.26% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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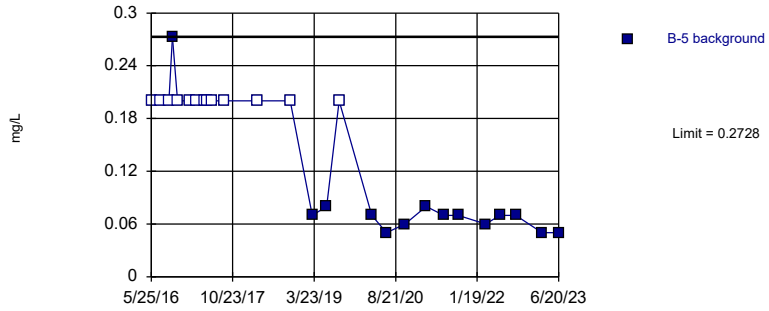
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-5 (bg)



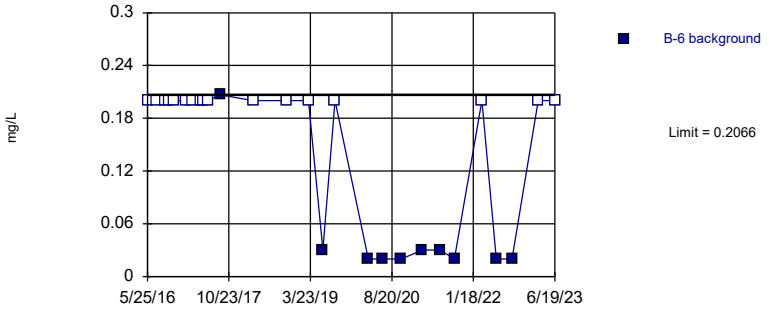
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 48.15% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-6



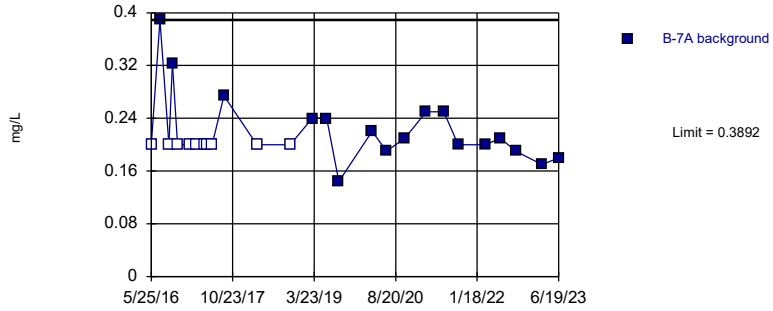
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 62.96% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Sanitas™ v.10.0.23 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-7A (bg)



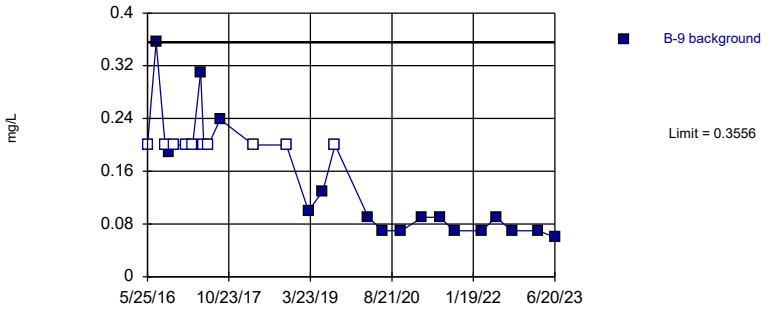
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 37.04% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, B-9

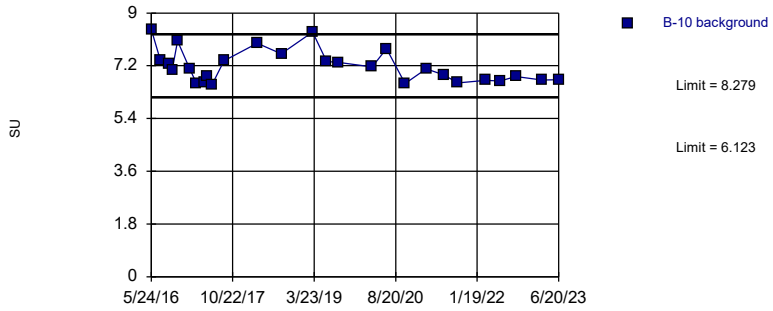


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 27 background values. 37.04% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-10

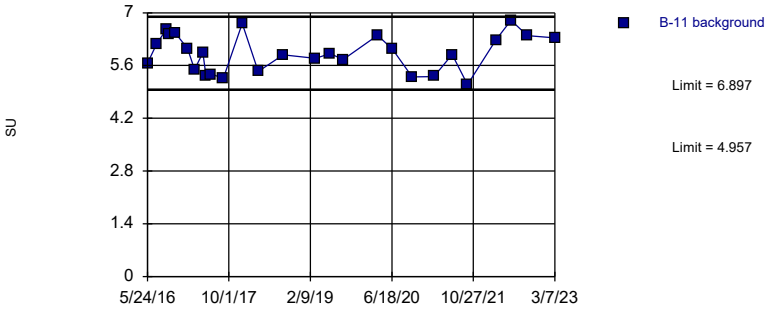


Background Data Summary (based on square root transformation): Mean=2.676, Std. Dev.=0.1021, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.899, critical = 0.894. Kappa = 1.972 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-11

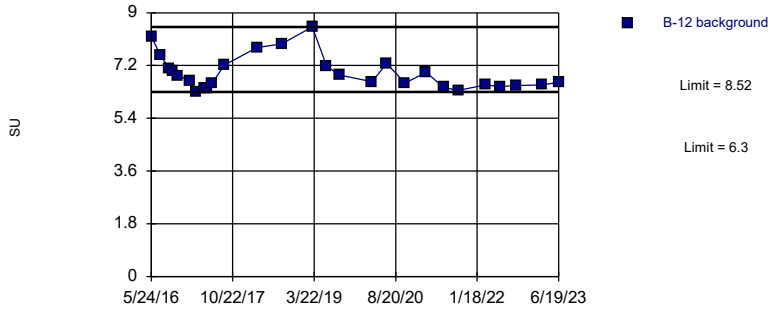


Background Data Summary: Mean=5.927, Std. Dev.=0.4919, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9549, critical = 0.894. Kappa = 1.972 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Non-parametric, B-12 (bg)

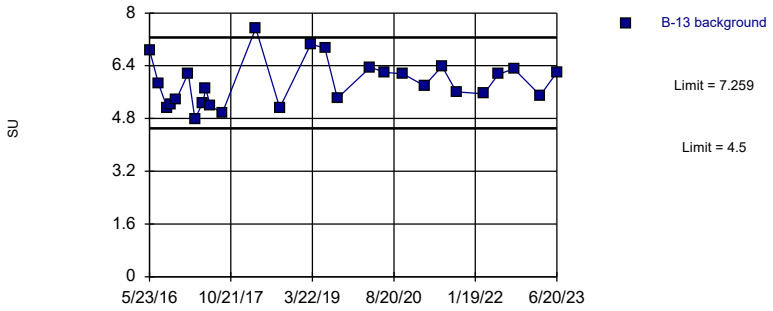


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 27 background values. Well-constituent pair annual alpha = 0.009996. Individual comparison alpha = 0.005004 (1 of 2). Assumes 1 future value.

Constituent: pH, field Analysis Run 10/29/2024 1:17 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-13 (bg)

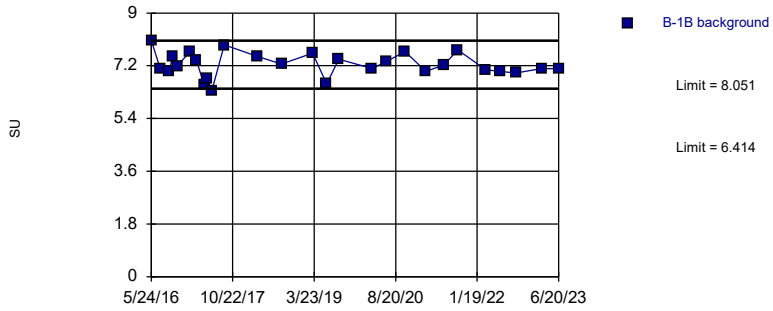


Background Data Summary: Mean=5.88, Std. Dev.=0.6994, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.957, critical = 0.894. Kappa = 1.972 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-1B (bg)

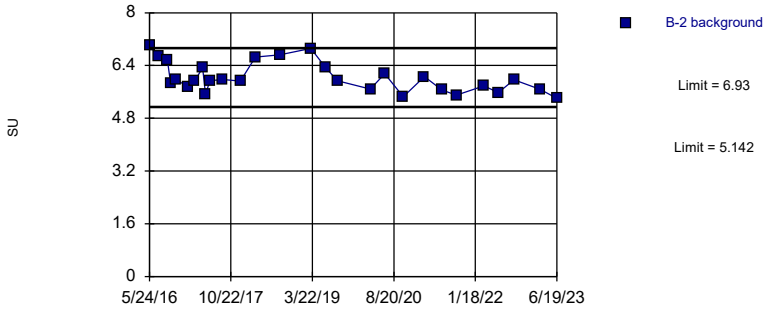


Background Data Summary: Mean=7.233, Std. Dev.=0.415, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.982, critical = 0.894. Kappa = 1.972 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-2

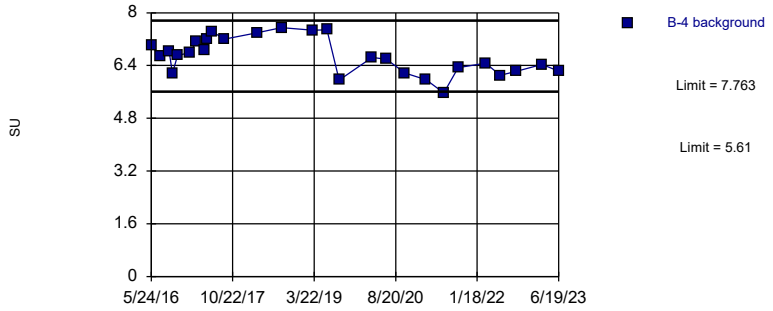


Background Data Summary: Mean=6.036, Std. Dev.=0.4552, n=28. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9226, critical = 0.896. Kappa = 1.964 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-4 (bg)

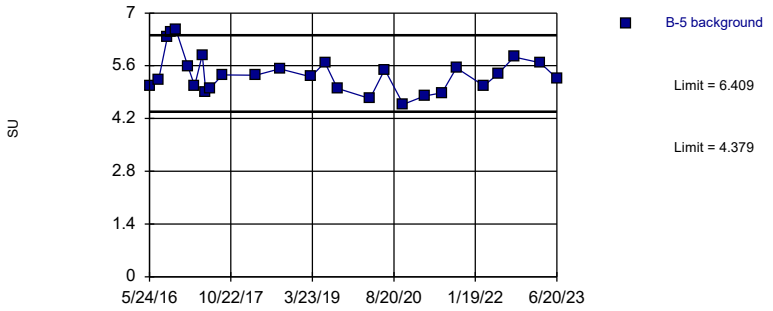


Background Data Summary: Mean=6.687, Std. Dev.=0.5459, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9607, critical = 0.894. Kappa = 1.972 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-5 (bg)

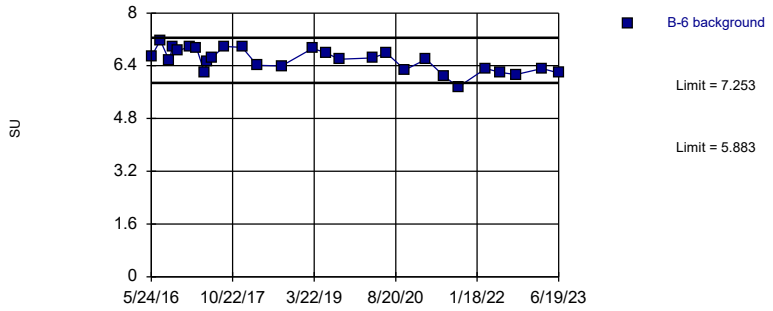


Background Data Summary: Mean=5.394, Std. Dev.=0.5146, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.937, critical = 0.894. Kappa = 1.972 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-6

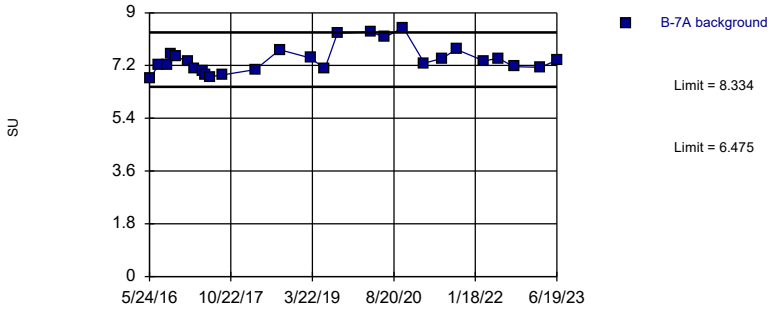


Background Data Summary: Mean=6.568, Std. Dev.=0.3488, n=28. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9643, critical = 0.896. Kappa = 1.964 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-7A (bg)

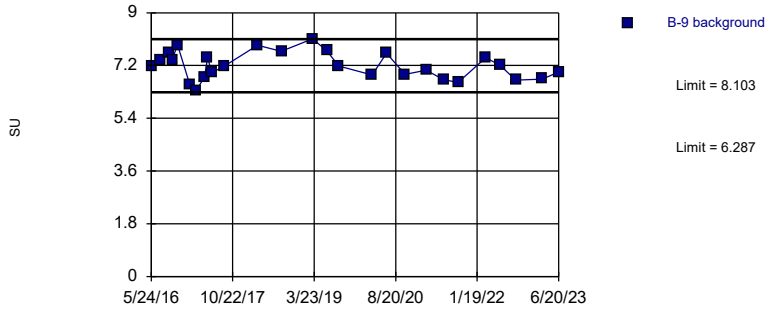


Background Data Summary: Mean=7.404, Std. Dev.=0.4711, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9092, critical = 0.894. Kappa = 1.972 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-9

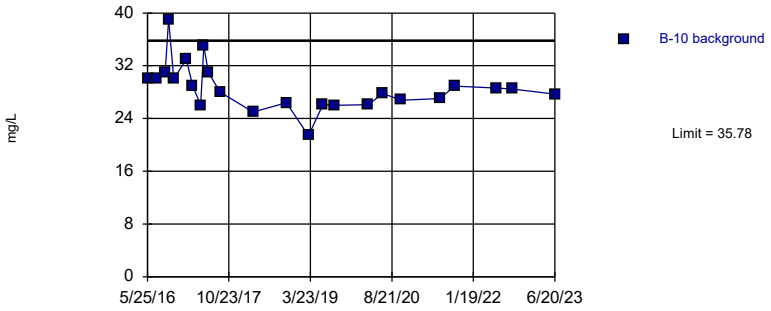


Background Data Summary: Mean=7.195, Std. Dev.=0.4603, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9741, critical = 0.894. Kappa = 1.972 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: pH, field Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-10



Background Data Summary: Mean=28.68, Std. Dev.=3.546, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9249, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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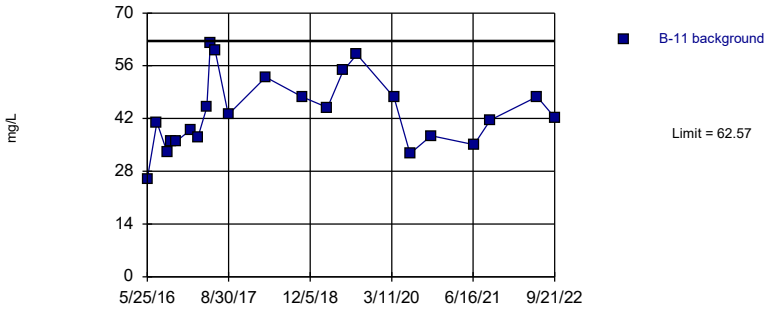
Prediction Limit

Intrawell Parametric, B-11



Background Data Summary: Mean=43.56, Std. Dev.=9.427, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9634, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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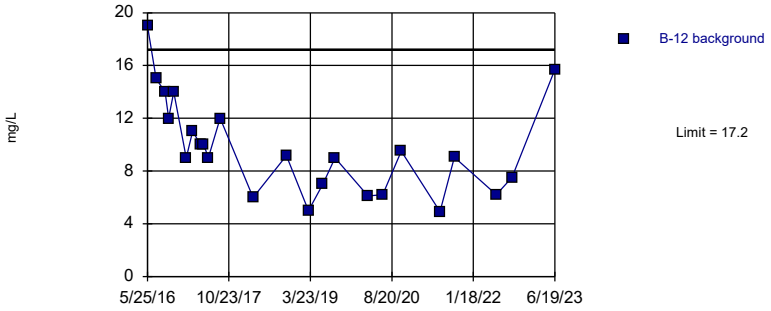
Prediction Limit

Intrawell Parametric, B-12 (bg)



Background Data Summary: Mean=9.848, Std. Dev.=3.671, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9371, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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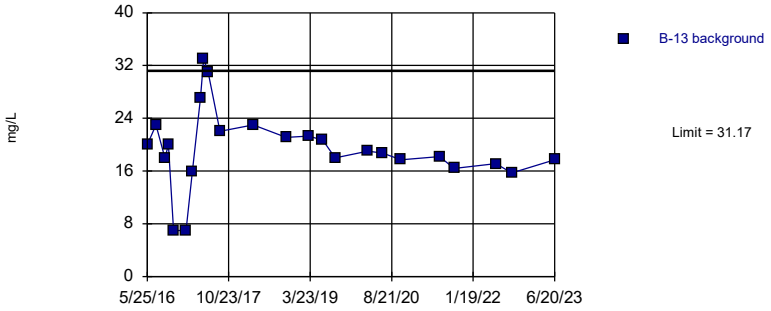
Prediction Limit

Intrawell Parametric, B-13 (bg)

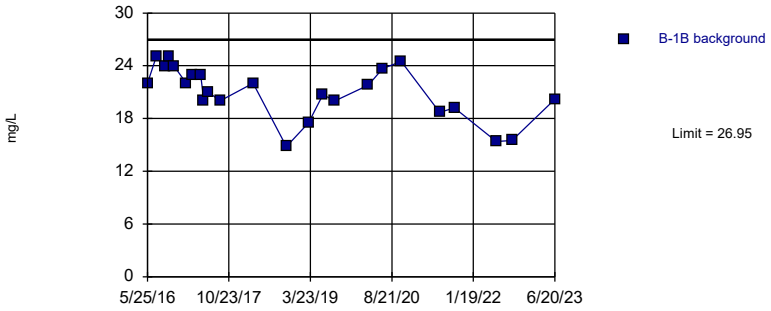


Background Data Summary: Mean=19.53, Std. Dev.=5.814, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9102, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-1B (bg)



Background Data Summary: Mean=20.96, Std. Dev.=2.991, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.934, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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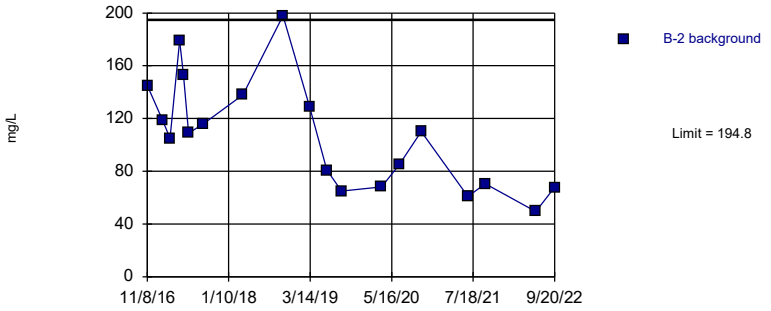
Prediction Limit

Intrawell Parametric, B-2



Background Data Summary: Mean=107.8, Std. Dev.=41.8, n=19. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9466, critical = 0.901. Kappa = 2.081 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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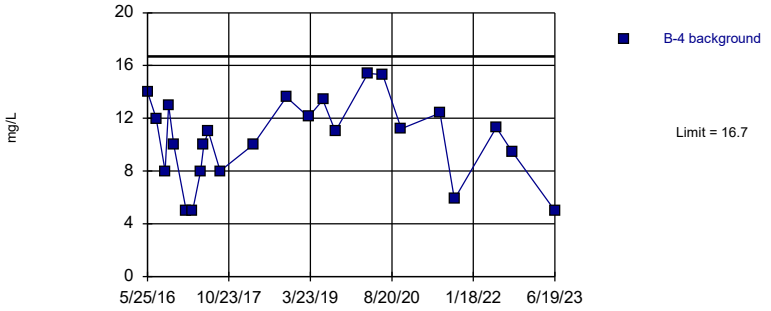
Prediction Limit

Intrawell Parametric, B-4 (bg)



Background Data Summary: Mean=10.42, Std. Dev.=3.135, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9454, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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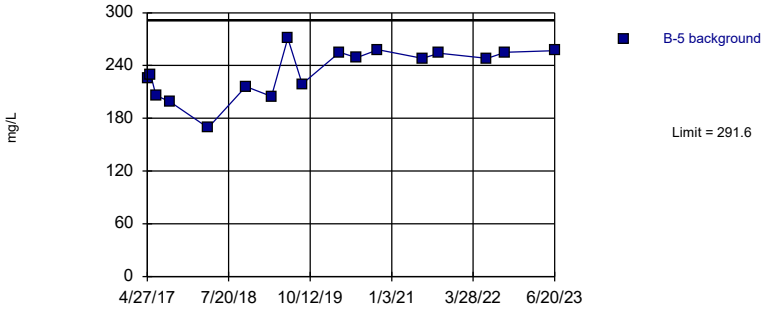
Prediction Limit

Intrawell Parametric, B-5 (bg)

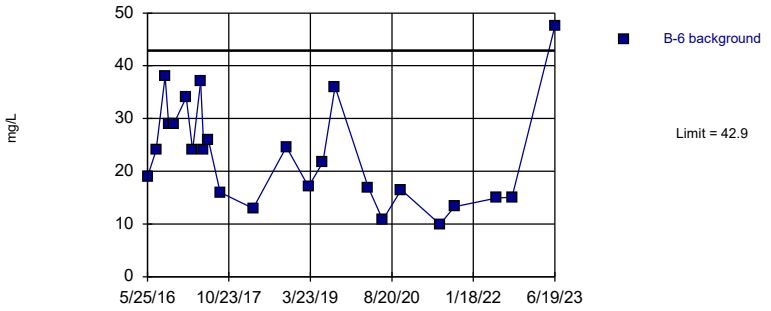


Background Data Summary: Mean=233.2, Std. Dev.=27.47, n=17. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.915, critical = 0.892. Kappa = 2.127 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-6



Background Data Summary: Mean=23.22, Std. Dev.=9.823, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9357, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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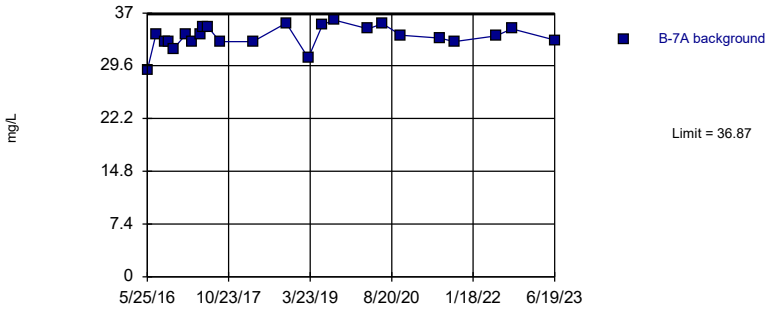
Prediction Limit

Intrawell Parametric, B-7A (bg)



Background Data Summary: Mean=33.68, Std. Dev.=1.593, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9073, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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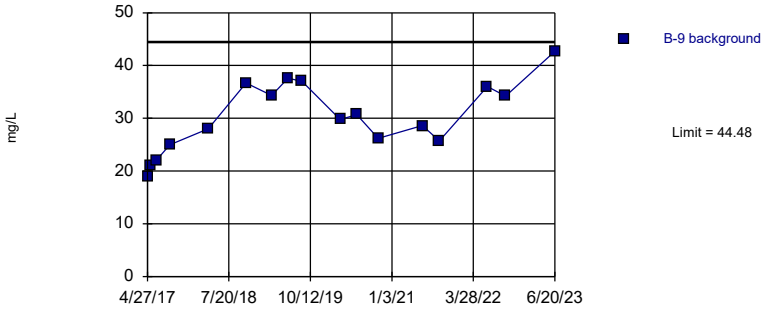
Prediction Limit

Intrawell Parametric, B-9



Background Data Summary: Mean=30.26, Std. Dev.=6.682, n=17. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.971, critical = 0.892. Kappa = 2.127 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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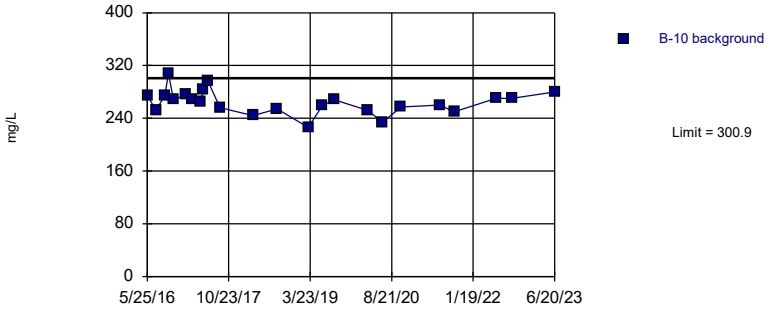
Prediction Limit

Intrawell Parametric, B-10

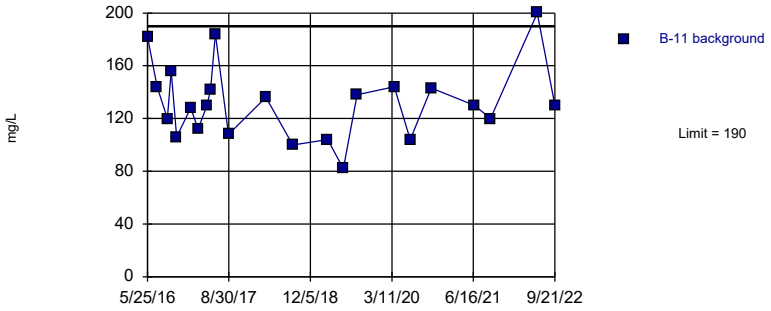


Background Data Summary: Mean=264.5, Std. Dev.=18.17, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9794, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-11



Background Data Summary: Mean=132.3, Std. Dev.=28.62, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9449, critical = 0.881. Kappa = 2.017 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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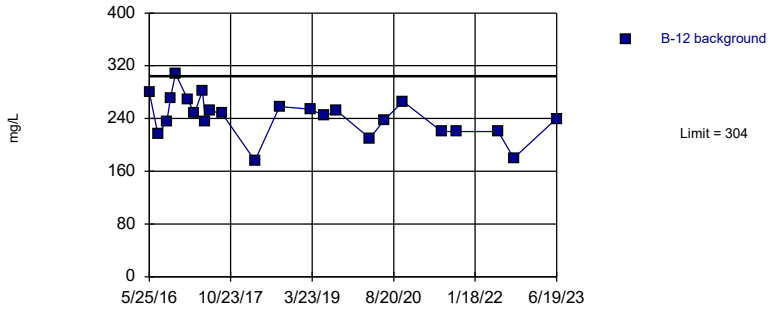
Prediction Limit

Intrawell Parametric, B-12 (bg)



Background Data Summary: Mean=242.6, Std. Dev.=30.65, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9734, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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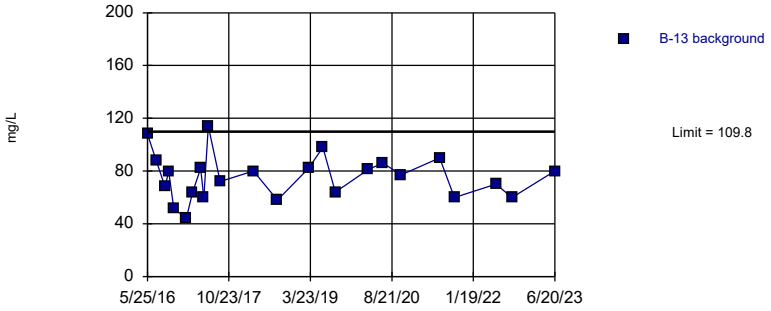
Prediction Limit

Intrawell Parametric, B-13 (bg)



Background Data Summary: Mean=75.75, Std. Dev.=16.98, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9722, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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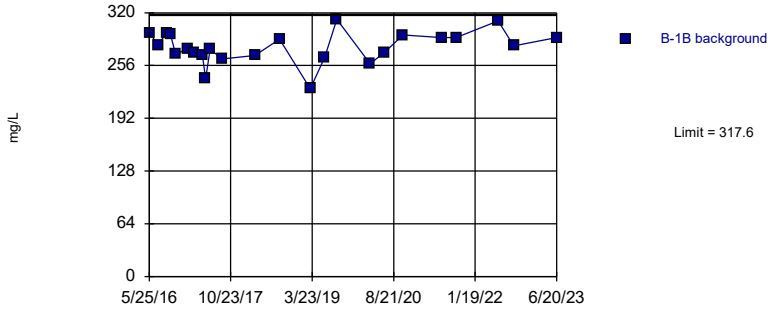
Prediction Limit

Intrawell Parametric, B-1B (bg)

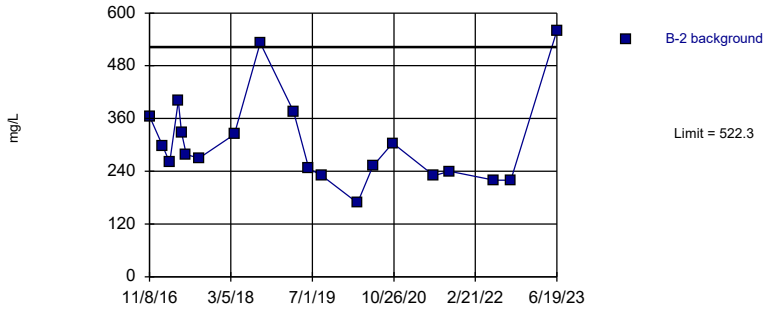


Background Data Summary: Mean=278.3, Std. Dev.=19.65, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9533, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Parametric, B-2



Background Data Summary (based on square root transformation): Mean=17.26, Std. Dev.=2.718, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9137, critical = 0.868. Kappa = 2.058 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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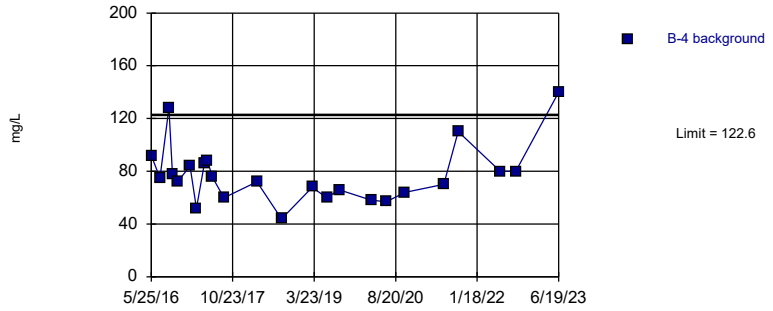
Prediction Limit

Intrawell Parametric, B-4 (bg)



Background Data Summary: Mean=77.5, Std. Dev.=22.53, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8892, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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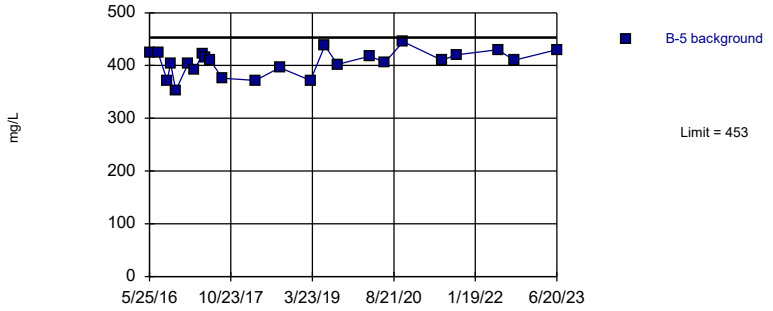
Prediction Limit

Intrawell Parametric, B-5 (bg)



Background Data Summary: Mean=406.1, Std. Dev.=23.4, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9514, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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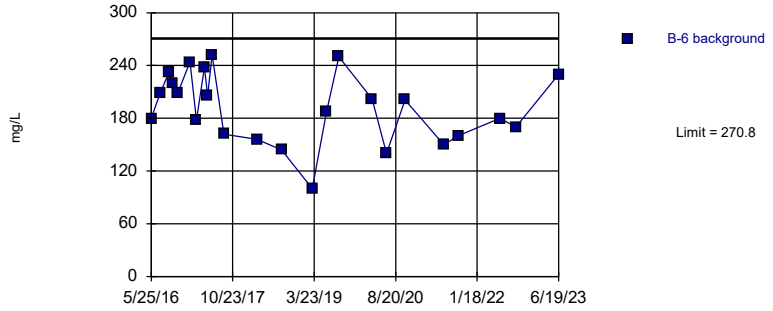
Prediction Limit

Intrawell Parametric, B-6

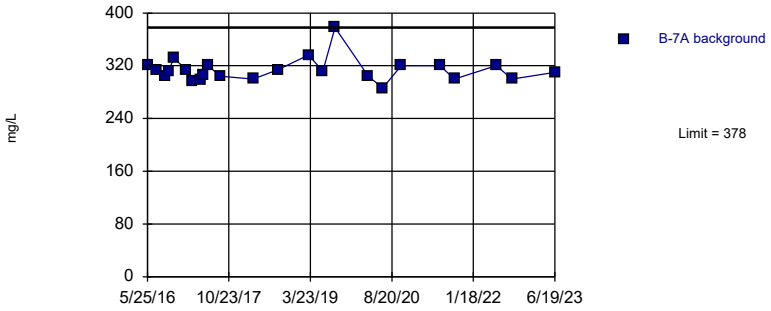


Background Data Summary: Mean=191.6, Std. Dev.=39.53, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9694, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Prediction Limit

Intrawell Non-parametric, B-7A (bg)



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 24 background values. Well-constituent pair annual alpha = 0.006238. Individual comparison alpha = 0.003124 (1 of 2). Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

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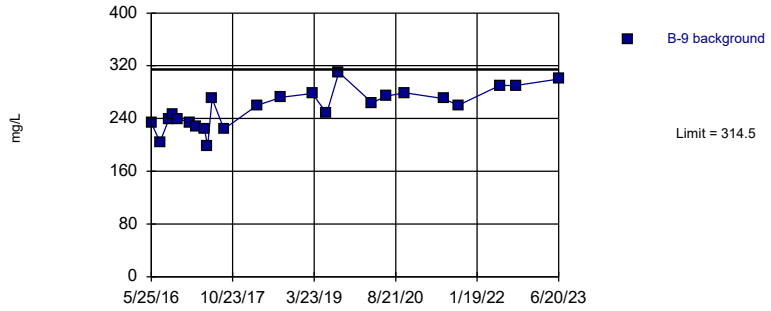
Prediction Limit

Intrawell Parametric, B-9



Background Data Summary: Mean=255.7, Std. Dev.=29.35, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9793, critical = 0.884. Kappa = 2.004 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 10/29/2024 1:18 PM View: Appendix III - Intrawell
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

FIGURE F

Interwell PLs

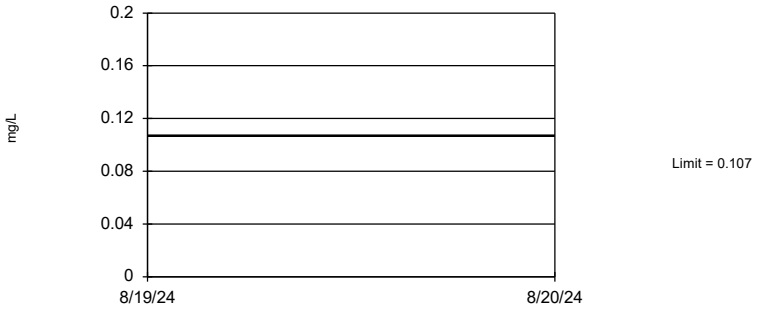
Appendix III - Interwell Prediction Limits - All Result

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 10/29/2024, 1:30 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron, total (mg/L)	n/a	0.107	n/a	n/a	5 future	n/a	156	n/a	n/a	14.74	n/a	n/a	0.00008118	NP Inter (normality) 1 of 2

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 156 background values. 14.74% NDs. Annual per-constituent alpha = 0.0008115. Individual comparison alpha = 0.00008118 (1 of 2). Assumes 5 future values.

Constituent: Boron, total Analysis Run 10/29/2024 1:24 PM View: Appendix III - Interwell

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

FIGURE G

UTLs

Upper Tolerance Limits Summary Table

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 10/29/2024, 1:38 PM

Constituent	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Antimony, total (mg/L)	0.00452	n/a	n/a	n/a	n/a	180	57.78	n/a	NaN	NP Inter(NDs)
Arsenic, total (mg/L)	0.00983	n/a	n/a	n/a	n/a	180	28.89	n/a	NaN	NP Inter(normality)
Barium, total (mg/L)	0.131	n/a	n/a	n/a	n/a	180	0	n/a	NaN	NP Inter(normality)
Beryllium, total (mg/L)	0.001	n/a	n/a	n/a	n/a	180	25.56	n/a	NaN	NP Inter(normality)
Cadmium, total (mg/L)	0.001	n/a	n/a	n/a	n/a	180	31.67	n/a	NaN	NP Inter(normality)
Chromium, total (mg/L)	0.006	n/a	n/a	n/a	n/a	179	6.145	n/a	NaN	NP Inter(normality)
Cobalt, total (mg/L)	0.0035	n/a	n/a	n/a	n/a	178	2.247	n/a	NaN	NP Inter(normality)
Combined Radium 226 + 228 (pCi/L)	8.79	n/a	n/a	n/a	n/a	174	0	n/a	NaN	NP Inter(normality)
Fluoride, total (mg/L)	0.5955	n/a	n/a	n/a	n/a	186	39.78	n/a	NaN	NP Inter(normality)
Lead, total (mg/L)	0.00389	n/a	n/a	n/a	n/a	179	39.66	n/a	NaN	NP Inter(normality)
Lithium, total (mg/L)	0.041	n/a	n/a	n/a	n/a	174	1.149	n/a	NaN	NP Inter(normality)
Mercury, total (mg/L)	0.000096	n/a	n/a	n/a	n/a	180	63.89	n/a	NaN	NP Inter(NDs)
Molybdenum, total (mg/L)	0.004655	n/a	n/a	n/a	n/a	180	53.33	n/a	NaN	NP Inter(NDs)
Selenium, total (mg/L)	0.0392	n/a	n/a	n/a	n/a	180	45	n/a	NaN	NP Inter(normality)
Thallium, total (mg/L)	0.001985	n/a	n/a	n/a	n/a	180	84.44	n/a	NaN	NP Inter(NDs)

FIGURE H

GWPS

FLINT CREEK LANDFILL GWPS				
Constituent Name	**MCL**	**CCR-Rule Specified**	**Background Limit**	**GWPS**
Antimony, Total (mg/L)	0.006		0.0045	0.006
Arsenic, Total (mg/L)	0.01		0.0098	0.01
Barium, Total (mg/L)	2		0.131	2
Beryllium, Total (mg/L)	0.004		0.001	0.004
Cadmium, Total (mg/L)	0.005		0.001	0.005
Chromium, Total (mg/L)	0.1		0.006	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.0035	0.006
Combined Radium, Total (pCi/L)	5		8.79	8.79
Fluoride, Total (mg/L)	4		0.6	4
Lead, Total (mg/L)	n/a	0.015	0.0039	0.015
Lithium, Total (mg/L)	n/a	0.04	0.041	0.041
Mercury, Total (mg/L)	0.002		0.000096	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.0047	0.1
Selenium, Total (mg/L)	0.05		0.0392	0.05
Thallium, Total (mg/L)	0.002		0.002	0.002

**Grey cell indicates background limit is higher than MCL or CCR-Rule Specified level*

**GWPS = Groundwater Protection Standard*

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residual*

FIGURE I

Confidence Intervals

Confidence Intervals Summary Table - All Results (No Significant)

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 10/29/2024, 1:42 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony, total (mg/L)	B-10	0.005	0.00011	0.006	No	30	0.002376	36.67	None	No	0.01	NP (normality)
Antimony, total (mg/L)	B-11	0.0001	0.000028	0.006	No	29	0.0008914	86.21	None	No	0.01	NP (NDs)
Antimony, total (mg/L)	B-2	0.001152	0.000028	0.006	No	30	0.001166	36.67	None	No	0.01	NP (normality)
Antimony, total (mg/L)	B-6	0.0001	0.00005	0.006	No	30	0.000253	63.33	None	No	0.01	NP (NDs)
Antimony, total (mg/L)	B-9	0.0005	0.00003	0.006	No	30	0.0003118	40	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	B-10	0.005	0.00038	0.01	No	30	0.002277	26.67	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	B-11	0.003138	0.00017	0.01	No	28	0.002308	25	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	B-2	0.00144	0.00023	0.01	No	30	0.003302	13.33	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	B-6	0.0015	0.00019	0.01	No	30	0.001921	20	None	No	0.01	NP (normality)
Arsenic, total (mg/L)	B-9	0.00168	0.0005	0.01	No	30	0.001938	26.67	None	No	0.01	NP (normality)
Barium, total (mg/L)	B-10	0.08546	0.0792	2	No	30	0.007121	0	None	sqrt(x)	0.01	Param.
Barium, total (mg/L)	B-11	0.1267	0.1053	2	No	28	0.02288	0	None	No	0.01	Param.
Barium, total (mg/L)	B-2	0.073	0.051	2	No	29	0.05074	0	None	No	0.01	NP (normality)
Barium, total (mg/L)	B-6	0.0565	0.04587	2	No	30	0.01247	0	None	sqrt(x)	0.01	Param.
Barium, total (mg/L)	B-9	0.1636	0.1488	2	No	30	0.01636	0	None	No	0.01	Param.
Beryllium, total (mg/L)	B-10	0.00005	0.000047	0.004	No	30	0.00005756	56.67	None	No	0.01	NP (NDs)
Beryllium, total (mg/L)	B-11	0.0004297	0.0002319	0.004	No	28	0.0003746	0	None	ln(x)	0.01	Param.
Beryllium, total (mg/L)	B-2	0.0001744	0.00009047	0.004	No	29	0.0002068	0	None	ln(x)	0.01	Param.
Beryllium, total (mg/L)	B-6	0.00009817	0.0000301	0.004	No	30	0.0001088	16.67	Kaplan-Meier	sqrt(x)	0.01	Param.
Beryllium, total (mg/L)	B-9	0.00005	0.00004	0.004	No	30	0.00001334	63.33	Kaplan-Meier	No	0.01	NP (NDs)
Cadmium, total (mg/L)	B-10	0.0002	0.000027	0.005	No	30	0.000101	36.67	None	No	0.01	NP (normality)
Cadmium, total (mg/L)	B-11	0.0002485	0.00009178	0.005	No	28	0.0004304	0	None	ln(x)	0.01	Param.
Cadmium, total (mg/L)	B-2	0.000348	0.000028	0.005	No	30	0.0004246	23.33	None	No	0.01	NP (normality)
Cadmium, total (mg/L)	B-6	0.00002	0.000014	0.005	No	30	0.00006955	30	None	No	0.01	NP (normality)
Cadmium, total (mg/L)	B-9	0.00002	0.00001	0.005	No	30	0.000015	56.67	None	No	0.01	NP (NDs)
Chromium, total (mg/L)	B-10	0.002	0.000649	0.1	No	30	0.00704	0	None	No	0.01	NP (normality)
Chromium, total (mg/L)	B-11	0.002	0.00092	0.1	No	28	0.005125	0	None	No	0.01	NP (normality)
Chromium, total (mg/L)	B-2	0.00283	0.00152	0.1	No	30	0.007718	0	None	No	0.01	NP (normality)
Chromium, total (mg/L)	B-6	0.003234	0.002018	0.1	No	30	0.002041	0	None	ln(x)	0.01	Param.
Chromium, total (mg/L)	B-9	0.001779	0.0009741	0.1	No	30	0.001045	0	None	x^(1/3)	0.01	Param.
Cobalt, total (mg/L)	B-10	0.0007802	0.0002637	0.006	No	30	0.0009388	3.333	None	x^(1/3)	0.01	Param.
Cobalt, total (mg/L)	B-11	0.0005543	0.000098	0.006	No	28	0.001427	0	None	No	0.01	NP (normality)
Cobalt, total (mg/L)	B-2	0.0004785	0.0001428	0.006	No	28	0.00119	0	None	ln(x)	0.01	Param.
Cobalt, total (mg/L)	B-6	0.0008873	0.0002488	0.006	No	30	0.001081	0	None	x^(1/3)	0.01	Param.
Cobalt, total (mg/L)	B-9	0.0007041	0.0002633	0.006	No	30	0.0005795	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	B-10	1.498	1.013	8.79	No	29	0.5288	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	B-11	1.437	0.911	8.79	No	28	2.591	0	None	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	B-2	2.033	1.313	8.79	No	29	0.8414	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	B-6	1.569	0.7016	8.79	No	29	2.722	0	None	ln(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	B-9	1.601	0.7717	8.79	No	29	1.737	0	None	ln(x)	0.01	Param.
Fluoride, total (mg/L)	B-10	0.2	0.09	4	No	31	0.06923	35.48	None	No	0.01	NP (normality)
Fluoride, total (mg/L)	B-11	0.2	0.04	4	No	30	0.08464	53.33	None	No	0.01	NP (NDs)
Fluoride, total (mg/L)	B-2	0.2	0.08	4	No	30	0.05912	43.33	None	No	0.01	NP (normality)
Fluoride, total (mg/L)	B-6	0.2	0.03	4	No	31	0.08689	58.06	None	No	0.01	NP (NDs)
Fluoride, total (mg/L)	B-9	0.2	0.07	4	No	31	0.08029	32.26	None	No	0.01	NP (normality)
Lead, total (mg/L)	B-10	0.0003783	0.0001394	0.015	No	30	0.0005258	36.67	Kaplan-Meier	ln(x)	0.01	Param.
Lead, total (mg/L)	B-11	0.00059	0.00016	0.015	No	28	0.002049	42.86	None	No	0.01	NP (normality)
Lead, total (mg/L)	B-2	0.00051	0.0001	0.015	No	29	0.002473	31.03	None	No	0.01	NP (normality)
Lead, total (mg/L)	B-6	0.001046	0.0003139	0.015	No	30	0.001059	3.333	None	sqrt(x)	0.01	Param.
Lead, total (mg/L)	B-9	0.0002	0.00013	0.015	No	30	0.0002419	50	None	No	0.01	NP (normality)
Lithium, total (mg/L)	B-10	0.003	0.00143	0.041	No	29	0.003067	0	None	No	0.01	NP (normality)
Lithium, total (mg/L)	B-11	0.003978	0.00165	0.041	No	28	0.006769	0	None	ln(x)	0.01	Param.
Lithium, total (mg/L)	B-2	0.00287	0.00103	0.041	No	29	0.006407	0	None	No	0.01	NP (normality)
Lithium, total (mg/L)	B-6	0.002	0.000415	0.041	No	28	0.001116	0	None	No	0.01	NP (normality)
Lithium, total (mg/L)	B-9	0.00356	0.0028	0.041	No	29	0.002668	0	None	No	0.01	NP (normality)
Mercury, total (mg/L)	B-10	0.000005	0.000005	0.002	No	30	0.000004693	76.67	None	No	0.01	NP (NDs)
Mercury, total (mg/L)	B-11	0.00002442	0.000005	0.002	No	29	0.00001757	86.21	None	No	0.01	NP (NDs)
Mercury, total (mg/L)	B-2	0.000005	0.000005	0.002	No	30	0.000009414	76.67	None	No	0.01	NP (NDs)
Mercury, total (mg/L)	B-6	0.000005	0.000005	0.002	No	30	0.000002511	63.33	None	No	0.01	NP (NDs)
Mercury, total (mg/L)	B-9	0.00000774	0.000005	0.002	No	30	0.000002413	90	None	No	0.01	NP (NDs)
Molybdenum, total (mg/L)	B-10	0.001633	0.0008343	0.1	No	30	0.001958	6.667	None	ln(x)	0.01	Param.
Molybdenum, total (mg/L)	B-11	0.00059	0.0003706	0.1	No	29	0.0005816	79.31	None	No	0.01	NP (NDs)
Molybdenum, total (mg/L)	B-2	0.001986	0.0009447	0.1	No	30	0.001519	6.667	None	x^(1/3)	0.01	Param.
Molybdenum, total (mg/L)	B-6	0.0008684	0.0003287	0.1	No	30	0.0007938	33.33	None	No	0.01	NP (normality)
Molybdenum, total (mg/L)	B-9	0.002	0.0003	0.1	No	30	0.006418	50	None	No	0.01	NP (normality)
Selenium, total (mg/L)	B-10	0.005	0.00041	0.05	No	30	0.002231	36.67	None	No	0.01	NP (normality)
Selenium, total (mg/L)	B-11	0.002849	0.002228	0.05	No	29	0.0006778	13.79	None	No	0.01	Param.
Selenium, total (mg/L)	B-2	0.013	0.00634	0.05	No	30	0.01744	0	None	No	0.01	NP (normality)

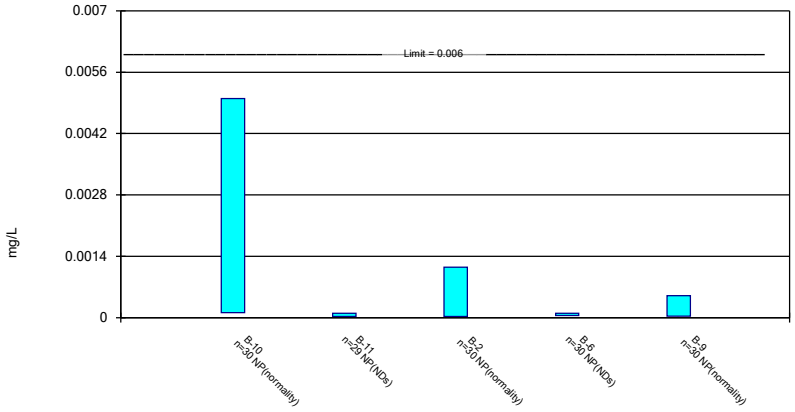
Confidence Intervals Summary Table - All Results (No Significant)

Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF Printed 10/29/2024, 1:42 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Selenium, total (mg/L)	B-6	0.002527	0.001658	0.05	No	30	0.0009661	3.333	None	No	0.01	Param.
Selenium, total (mg/L)	B-9	0.001	0.0004	0.05	No	30	0.0002909	40	None	No	0.01	NP (normality)
Thallium, total (mg/L)	B-10	0.0002	0.00004	0.002	No	30	0.0002242	83.33	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	B-11	0.0002	0.00003	0.002	No	29	0.0001683	79.31	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	B-2	0.0002	0.000066	0.002	No	30	0.0002119	63.33	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	B-6	0.00116	0.00003	0.002	No	30	0.0002715	86.67	None	No	0.01	NP (NDs)
Thallium, total (mg/L)	B-9	0.0002	0.00004	0.002	No	30	0.0002904	83.33	None	No	0.01	NP (NDs)

Non-Parametric Confidence Interval

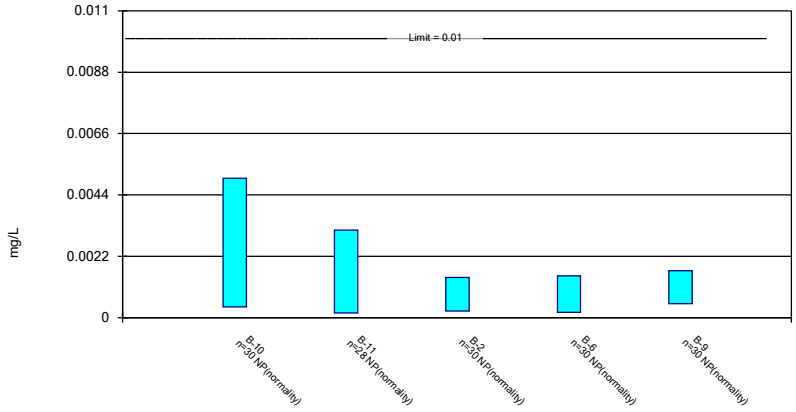
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Antimony, total Analysis Run 10/29/2024 1:39 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Non-Parametric Confidence Interval

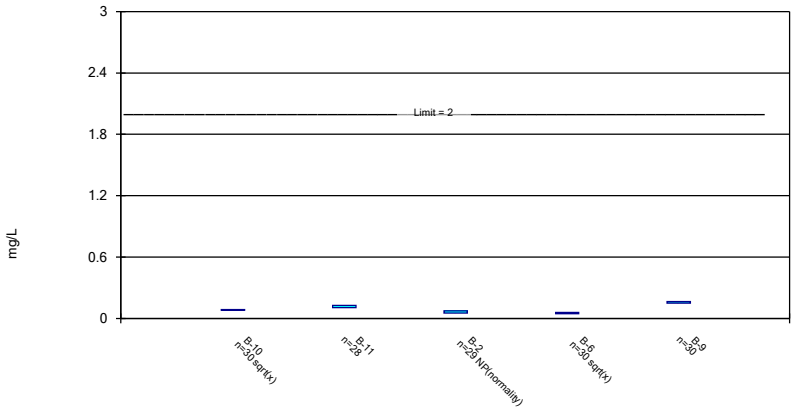
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Arsenic, total Analysis Run 10/29/2024 1:39 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

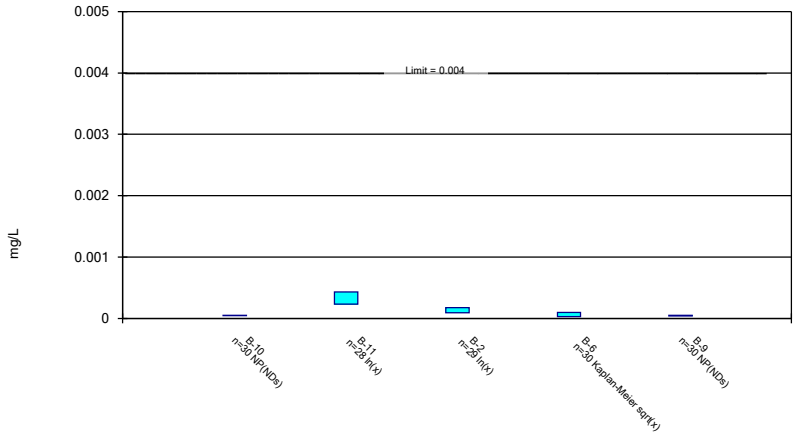
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium, total Analysis Run 10/29/2024 1:39 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

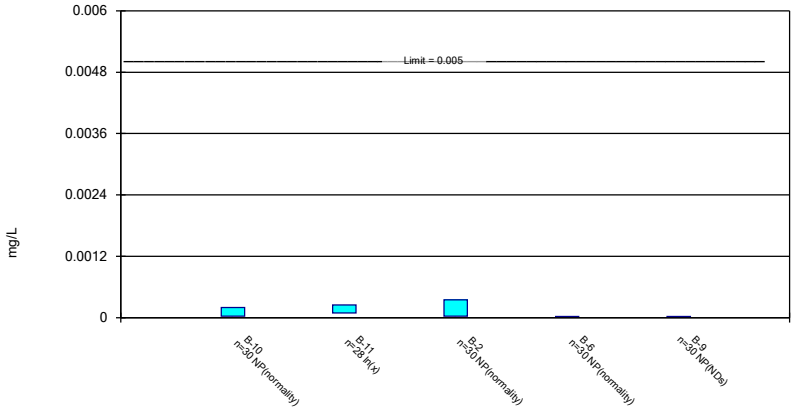
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Beryllium, total Analysis Run 10/29/2024 1:39 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

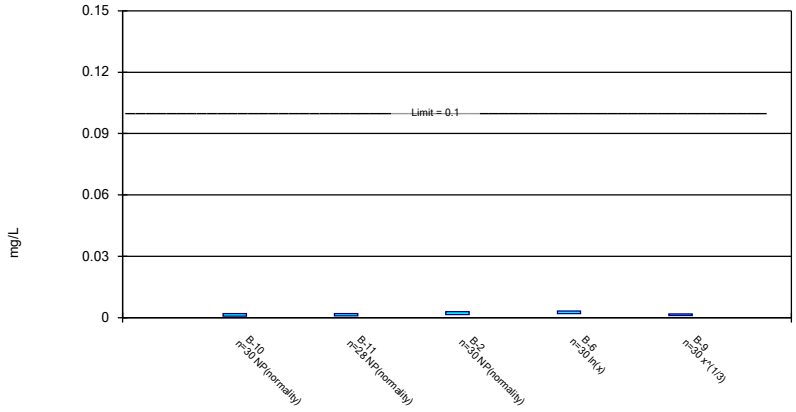
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium, total Analysis Run 10/29/2024 1:39 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

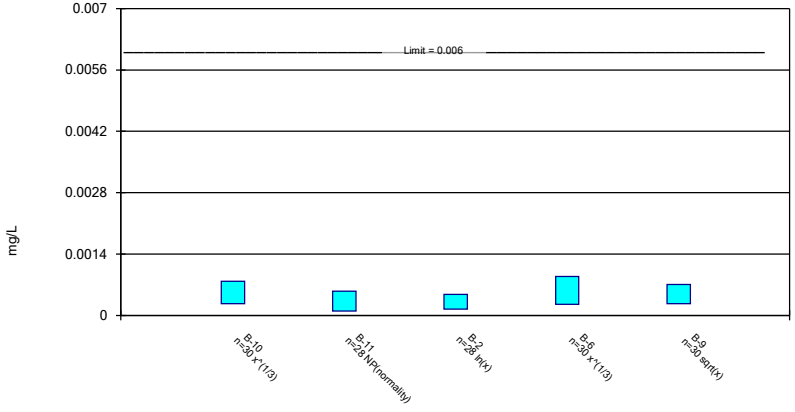
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Chromium, total Analysis Run 10/29/2024 1:39 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

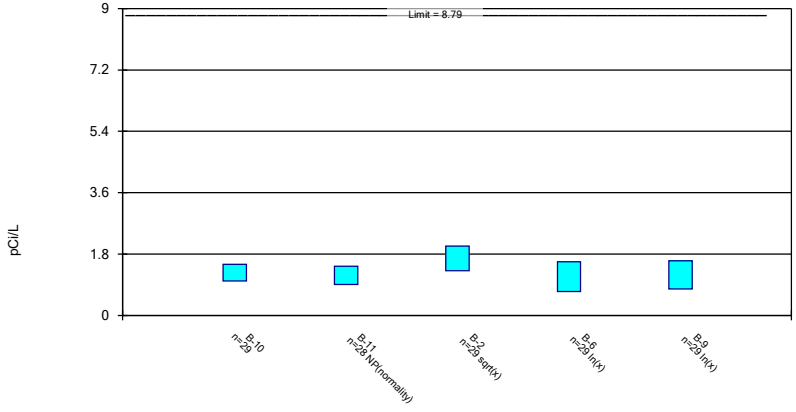
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt, total Analysis Run 10/29/2024 1:39 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

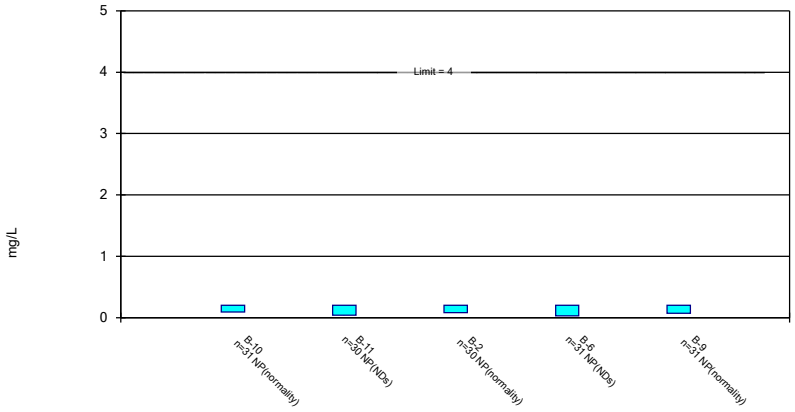
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 10/29/2024 1:39 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Non-Parametric Confidence Interval

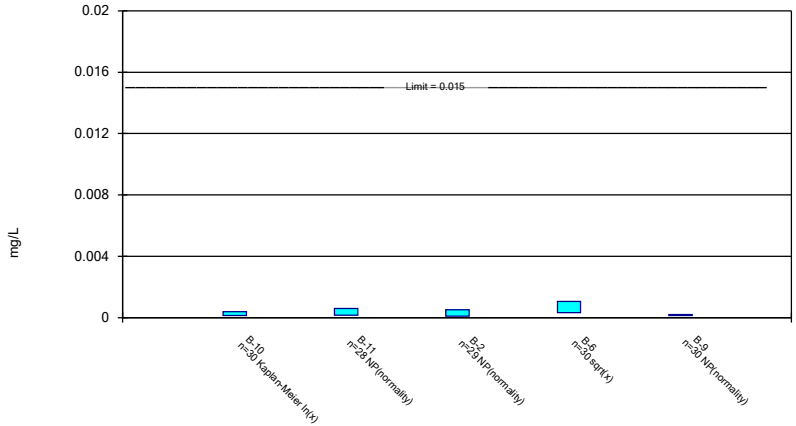
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Fluoride, total Analysis Run 10/29/2024 1:39 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

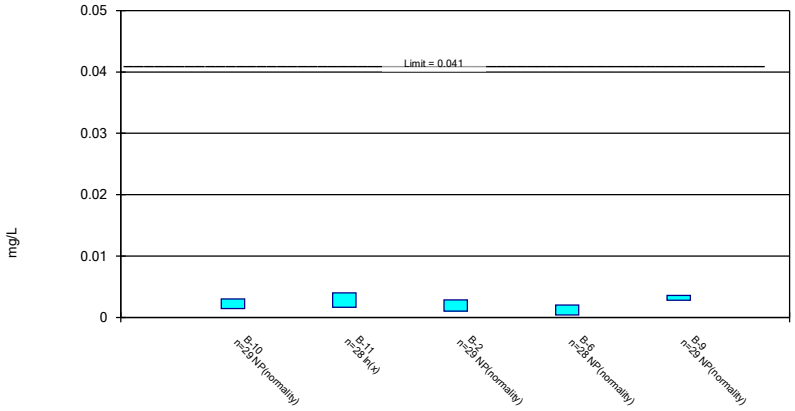
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lead, total Analysis Run 10/29/2024 1:39 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

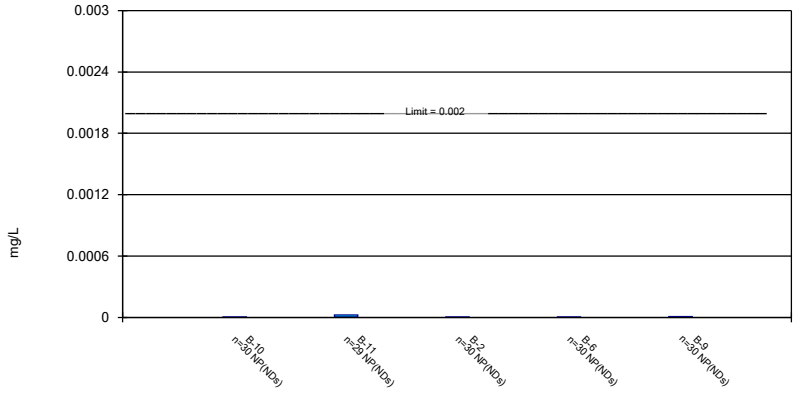
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium, total Analysis Run 10/29/2024 1:39 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Non-Parametric Confidence Interval

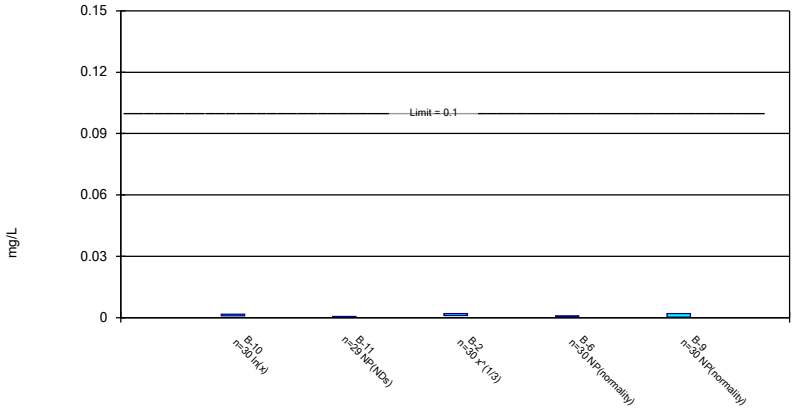
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Mercury, total Analysis Run 10/29/2024 1:39 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

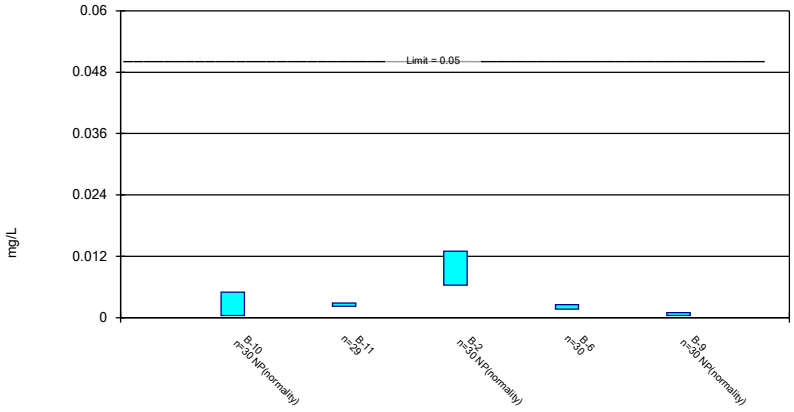
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum, total Analysis Run 10/29/2024 1:40 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Parametric and Non-Parametric (NP) Confidence Interval

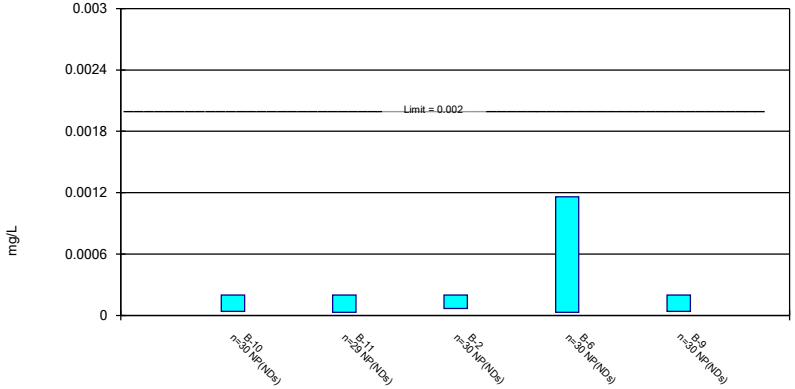
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium, total Analysis Run 10/29/2024 1:40 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium, total Analysis Run 10/29/2024 1:40 PM View: Appendix IV
Flint Creek Landfill Client: Geosyntec Data: Flint Creek LF

APPENDIX 3 – Alternative Source Demonstrations

Alternative source demonstrations relative to Appendix IV SSLs above the groundwater protection standard were not necessary because no SSLs above the groundwater protection standards were identified in 2024. Alternative source demonstrations are not applicable at this time.

APPENDIX 4 - Notices for Monitoring Program Transitions

No transition between monitoring requirements occurred in 2024; the CCR unit was in assessment monitoring at the beginning and at the end of the year. Notices for monitoring program transitions are not applicable at this time.

APPENDIX 5 - Well Installation/Decommissioning Logs

No wells were installed or decommissioned in 2024. Well installation/decommissioning logs are not applicable at this time.