



January 15, 2024
Project No: 23-11-18

Mr. Greg Vance
Absolute Waste Solutions
TriCore Group, LLC
P.O. Box 720992
Oklahoma City, OK 73172

Re: Groundwater Statistical Analysis Summary; Second 2023 Semi-Annual Monitoring Event; Absolute Waste Solutions (AWS) Landfill; ODEQ Permit 3563005; Tecumseh, Oklahoma

Dear Mr. Vance:

This report summarizes the statistical analysis evaluation of groundwater data obtained during the second 2023 semi-annual monitoring event at the Absolute Waste Solutions (AWS) Landfill in Tecumseh, Oklahoma. The groundwater monitoring network currently consists of a network of five (5) groundwater monitor wells, including four compliance wells: MW-2, MW-3, MW-4, and MW-5; and background (upgradient) well MW-1.

1.0 Event Summary

Groundwater monitor wells MW-2, MW-3, MW-4, and MW-5 are monitored under a detection monitoring program. Groundwater monitor well MW-1 is currently under an assessment monitoring program. Groundwater samples for the second 2023 semi-annual monitoring event were collected November 16, 2023. Collected samples were analyzed for forty-seven (47) volatile organic compounds (VOCs), nineteen (19) metals, and other inorganic compounds.

Field Quality Assurance/Quality Control (QA/QC) samples prepared during the second 2023 semi-annual event consisted of: one field blank, one trip blank, and one monitor well-duplicate sample. The field blank was prepared in the field at MW-1. The trip blank was prepared by the laboratory, carried to the site, and returned. The monitor well duplicate sample was collected at MW-4. The field and trip blanks were analyzed for VOCs only. The monitor well duplicate sample was analyzed for all detection monitoring constituents.

The trip blank and field blank did not indicate problems with procedures as all constituents were below detection limits. Analytical results from the monitor well duplicate sample provided comparable results to MW-4.

2.0 Detection Monitoring

Groundwater monitor wells MW-2, MW-3, MW-4, and MW-5 are monitored under the detection monitoring program. A summary of detection monitoring volatile organic compound (VOC) results and the statistical analysis evaluation of metals and inorganic indicators are provided in the following paragraphs.

2.1 Volatile Organic Compounds Detection Summary

Review of VOCs is accomplished by comparing analytical results to the practical quantitation limits (PQLs). An initial detection is based on any VOC observed at a concentration at or above the PQL. No VOCs were reported in detection monitoring well samples collected during the second 2023 semi-annual sampling event.

2.2 Inorganic and Metals Statistical Analysis Summary

Inorganic constituents in detection monitoring wells were statistically evaluated per OAC 252:515-9-74. Metals and inorganic indicator compounds were initially evaluated by comparison of constituent concentrations to interwell upper prediction limits per OAC 252:515-9-74(b). Evaluations are conducted on a parametric basis except for constituents with greater than 50 percent non-detections in the background data pool and/or a non-normal/non-transform normal background distribution. Those constituents are evaluated via a non-parametric prediction limit method. A non-parametric prediction limit method generally sets the upper statistical limit as the greatest concentration in the background pool for that constituent. Analyses are conducted in accordance with the 2009 United States Environmental Protection Agency (EPA) Unified Guidance.¹ Only parameters that exceed inter- and intra-well upper prediction limits are considered to exhibit an initial statistically significant increase over background (SSI). The background pool for interwell analyses consisted of all appropriate data collected from upgradient well MW-1. The background pool for intrawell analyses consisted of all appropriate data collected from individual wells from January 1995 through June 2013; and from June 2018 through June 2020 for MW-5. A few outliers were previously omitted from the background pool in accordance with prior approved reports.²

Interwell analysis plots for evaluated constituents are provided in Attachment 1. Intrawell analysis plots for constituents producing interwell statistical exceedances are provided in Attachment 2. Chloride, sodium, and sulfate in the sample from MW-2; and barium, chloride, magnesium, and sodium in MW-3; and barium in MW-4 exceeded interwell upper prediction limits. Constituents exceeding interwell upper prediction limits were compared to intrawell upper prediction limits. Sodium in the sample from MW-2; chloride and sodium in MW-3, and barium in MW-4 exceeded both the interwell and intrawell upper statistical limits. Summary data for constituents exceeding both interwell and intrawell upper prediction limits are include on Table 1.

¹ U.S. Environmental Protection Agency (EPA). March 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance. EPA 530-R-09-007.

² SCS Aquaterra. January 2014. Absolute Waste Solutions Landfill November 2013 Groundwater Monitoring Report.

Table 1
Detection Monitoring Statistical Analysis Summary

Well	Constituent	Result (mg/L)	Interwell Pred. Limit	Intrawell Pred. Limit	Status
MW-2	sodium	79.4	54.5	76.8	Repeat
MW-3	chloride	190	61.1	106	Repeat
	sodium	73.4	54.5	62.0	Repeat
MW-4	barium, total	2.88	1.18	2.42	Repeat

Repeat statistical exceedances occur for sodium in the sample collected from MW-2; chloride and sodium at MW-3, and barium at MW-4. Chloride concentrations at MW-3 has been demonstrated to reflect natural variation in a report dated May 12, 2021 (ODEQ approved in correspondence dated June 22, 2021) with ASD conclusions reviewed in subsequent semi-annual monitoring reports.^{3,4} Sodium concentrations at MW-2 and MW-3 and barium at MW-4 have also been demonstrated to reflect natural variation in a report dated March 20, 2023 for MW-2 and MW-3 (ODEQ approved in correspondence dated July 12, 2023).^{5,6} MW-2 and MW-3 are not directly downgradient of former disposal cells. Concentration variability is influenced, in part, by adjacent surface water ponds. Updated time-series plots are included as Attachment 3. There is an inverse correlation between recent groundwater levels versus chloride and sodium concentrations at MW-2, supporting the ASD conclusions of evaporative concentration of chloride and sodium within the adjacent pond as well as decreased saturated interval and subsurface water volume. A similar trend is apparent for MW-3 and MW-4. No observations counter to the original ASD are apparent. A recent significant dip of the groundwater elevation at MW-3 followed by rapid increase is apparent. The dip may reflect an anomalous water level reading. The overall trend will continue to be closely monitored. There are no indications of a potential landfill release affecting groundwater proximal MW-2 and MW-3. It is proposed to continue detection monitoring for MW-2, MW-3, and MW-4.

3.0 Assessment Monitoring

Upgradient groundwater monitor well MW-1 is currently evaluated under an assessment monitoring program. Assessment monitoring for MW-1 commenced with the December 2015 groundwater sampling event in response to VOC detections. No new Appendix C

³ The Carel Corporation. May 12, 2021. Verification Resampling Results and Alternate Source Demonstration, Absolute Waste Solutions (AWS) Landfill – Tecumseh, Oklahoma, ODEQ Permit 3563005.

⁴ Oklahoma Department of Environmental Quality (ODEQ). June 22, 2021. Resampling Results and Alternate Source Demonstration (ASD), Absolute Waste Solutions (AWS) Landfill, Pottawatomie County; Permit Number 3563005.

⁵ The Carel Corporation. March 20, 2023. Verification Resampling Results and Alternate Source Demonstration, Absolute Waste Solutions (AWS) Landfill – Tecumseh, Oklahoma, ODEQ Permit 3563005.

⁶ Oklahoma Department of Environmental Quality (ODEQ). July 12, 2023. Resampling Results and Alternate Source Demonstration (ASD), Absolute Waste Solutions (AWS) Landfill, Pottawatomie County; Permit Number 3563005.

constituents were detected during the second 2015 event, therefore, the list of assessment monitoring constituents was approved for reduction to Appendix A.

3.1 Volatile Organic Compounds Detection Summary

VOCs in assessment monitor wells are screened using detection monitoring statistical methods. A summary of detected VOCs in assessment wells during the second 2023 semi-annual monitoring event is provided on Table 2 Assessment Well Summary. Time-series plots for detected VOCs for assessment well MW-1 are included with Attachment 4.

Table 2
Assessment Well Summary

Well	Constituent	Concentration (µg/L)	GWPS (µg/L)
MW-1	cis-1,2-dichloroethene	4.38	70 ^a
	1,4-dichlorobenze	4.95	75 ^a
	benzene	3.74	5 ^a
	ethylbenzene	1.31	700 ^a
	vinyl chloride	2.93	2 ^a

a – EPA Primary Maximum Contaminant Level (MCL)

b – EPA Regional Screening Level (RSL) – Tapwater – May 2022

VOC concentration have been trending downward over the last two years; however, concentration rebounds are apparent for the current event. An initial detection is noted for ethylbenzene. Results will be closely monitored during the next semi-annual event to determine if the current event is a short-term excursion of developing trend. Historically, concentrations have remained low. Concentrations are well below the Environmental Protection Agency (EPA) primary drinking water maximum contaminant levels (MCL) of 75 µg/L for 1,4-DCB, 5 µg/L for benzene, 70 µg/L for cis 1,2-DCE, and 700 µg/L for ethylbenzene. Vinyl chloride has not been detect since the first 2021 semi-annual event. The current vinyl chloride concentration is above the Environmental Protection Agency (EPA) primary drinking water maximum contaminant levels (MCL) of 2 µg/L; however, the 95 percent lower confidence limit remains below the MCL (see section 3.2). An acetone detection noted during the first 2023 semi-annual monitoring event is not repeated during the second 2023 semi-annual sample. Concentration variability will continue to be closely observed for detected VOCs.

3.2 95 Percent Compliance Interval Analysis Results

Confirmed VOCs are statistically compared to groundwater protection standards (GWPS) using a 95 percent confidence interval analyses. The 95 percent upper and lower confidence limits for detected VOCs and inorganics constituents that exceed detection monitoring statistical methods and that have an EPA primary MCL are compared to the EPA primary drinking water MCL or screening standard for each constituent evaluated. Confidence interval analyses are performed per Gibbons and Coleman (2001) and the EPA

Unified Guidance.^{7,8} A parameter in which the 95 percent lower confidence limit (LCL) is greater than the groundwater protection standard (GWPS) provides statistically significant evidence that the constituent of interest occurs at a concentration greater than the GWPS. Calculations were made using data collected with the previous two years (November 2021 through November 2023) in order to reflect current site conditions. The 95 percent confidence interval statistical analysis results for VOCs detected in assessment well MW-1 are summarized on Table 3.

Table 3
95 Percent Lower Confidence Analysis Summary

Well	Constituent	June 2023 Result (µg/L)	November 2023 Result (µg/L)	95% LCL	GWPS	Exceeds?
MW-1	cis-1,2-dichloroethene	1.99	4.38	2.38	70 ^a	No
	benzene	1.17	3.74	1.06	5 ^a	No
	1,4-dichlorobenzene	3.24	4.95	3.21	75 ^a	No
	ethylbenzene	<1	1.31	1.0	700 ^a	No
	vinyl chloride	<1	2.93	1.0	2 ^a	No

a – EPA Drinking Water Primary Maximum Contaminant Level (MCL)

b – EPA Regional Screening Level (RSL) – Tapwater – May 2022⁹

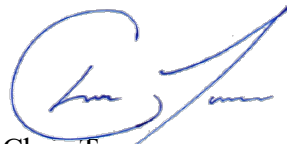
LCL – 95 percent lower confidence limit

GWPS – Groundwater Protection Standard

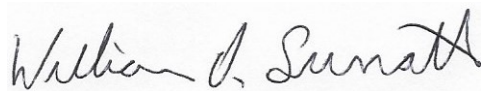
The confidence interval plots are provided in Attachment 5. The 95 percent LCLs for evaluated VOCs in upgradient well MW-1 do not exceed the GWPSs. Assessment monitoring will continue.

We trust that this information is acceptable to you. Please call if you have any questions.

Sincerely,
THE CAREL CORPORATION



Chris Torres
Project Manager



William D. Surratt, P.G.
Geologist

- Attachment 1 – Interwell Statistical Plots
- Attachment 2 – Intrawell Statistical Plots
- Attachment 3 – Updated Time-Series Plot – MW-2, MW-3, and MW-4
- Attachment 4 – Time Series Plots - VOCs - MW-1
- Attachment 5 – Confidence Interval Plots

⁷ Gibbons, R. D. and Coleman, D. E., 2001. Statistical Methods for Detection and Quantification of Environmental Contamination. John Wiley & Sons. New York. P. 384.

⁸ EPA. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance.

ATTACHMENT 1

INTERWELL STATISTICAL PLOTS

Prediction Limit

Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase Printed 1/8/2024, 11:25 AM

Constituent	Well	Upper Lim.	Lower.Date	Observ.	Sig.	Bg N	Bg Wells	Bg Mean	Std. Dev.	ND Adj.	Transform	Alpha	Method
Alkalinity (mg/l)	MW-2	746.3	78.58	11/16/2023 297	No	26	MW-1	5.49	0.4899	None	ln(x)	0.0002532	Param Inter 1 of 2
Alkalinity,Bicarbonate (mg/l)	MW-2	874.8	70.66	11/16/2023 297	No	26	MW-1	5.516	0.5476	None	ln(x)	0.0002532	Param Inter 1 of 2
Alkalinity,Carbonate (mg/l)	MW-2	100	0.06	11/16/2023 20ND	No	52	MW-1	n/a	n/a	n/a	n/a	0.001402	NP Inter (NDs) 1...
Antimony, Total (mg/l)	MW-2	0.338	n/a	11/16/2023 0.004ND	No	52	MW-1	n/a	n/a	n/a	n/a	0.000701	NP Inter (NDs) 1...
Arsenic (mg/l)	MW-2	0.075	n/a	11/16/2023 0.002ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (NDs) 1...
Barium (mg/l)	MW-2	1.18	n/a	11/16/2023 0.115	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (normali...
BERYLLIUM, TOTAL (mg/l)	MW-2	0.02	n/a	11/16/2023 0.002ND	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
CADMIUM, TOTAL (mg/l)	MW-2	0.04	n/a	11/16/2023 0.001ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (NDs) 1...
Calcium (mg/l)	MW-2	140.1	n/a	11/16/2023 49.6	No	54	MW-1	3.311	0.7655	None	ln(x)	0.0005064	Param Inter 1 of 2
Chloride (mg/l)	MW-2	61.12	n/a	11/16/2023 88.3	Yes	55	MW-1	2.994	0.5257	None	ln(x)	0.0005064	Param Inter 1 of 2
CHROMIUM, TOTAL (mg/l)	MW-2	0.099	n/a	11/16/2023 0.002ND	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
COBALT, TOTAL (mg/l)	MW-2	0.11	n/a	11/16/2023 0.0035	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
COD (mg/l)	MW-2	280.7	n/a	11/16/2023 25.6	No	60	MW-1	3.337	1.09	None	ln(x)	0.0005064	Param Inter 1 of 2
Copper (mg/l)	MW-2	0.3	n/a	11/16/2023 0.005ND	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
LEAD, TOTAL (mg/l)	MW-2	0.078	n/a	11/16/2023 0.002ND	No	52	MW-1	n/a	n/a	n/a	n/a	0.000701	NP Inter (NDs) 1...
Magnesium (mg/l)	MW-2	67.53	n/a	11/16/2023 42.1	No	54	MW-1	2.558	0.7764	None	ln(x)	0.0005064	Param Inter 1 of 2
Nickel, Total (mg/l)	MW-2	0.19	n/a	11/16/2023 0.00951	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
Nitrate-Nitrite (mg/l)	MW-2	1	n/a	11/16/2023 0.1ND	No	55	MW-1	n/a	n/a	n/a	n/a	0.0006347	NP Inter (NDs) 1...
Potassium (mg/l)	MW-2	6.7	n/a	11/16/2023 2ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (normali...
Selenium (mg/l)	MW-2	0.528	n/a	11/16/2023 0.002ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (NDs) 1...
SILVER, TOTAL (mg/l)	MW-2	0.002	n/a	11/16/2023 0.002ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (NDs) 1...
Sodium (mg/l)	MW-2	54.5	n/a	11/16/2023 79.4	Yes	54	MW-1	2.842	0.5427	None	ln(x)	0.0005064	Param Inter 1 of 2
Sulfate (mg/l)	MW-2	42	n/a	11/16/2023 60.1	Yes	55	MW-1	n/a	n/a	n/a	n/a	0.0006347	NP Inter (normali...
THALLIUM, TOTAL (mg/l)	MW-2	0.056	n/a	11/16/2023 0.002ND	No	51	MW-1	n/a	n/a	n/a	n/a	0.0007231	NP Inter (NDs) 1...
Vanadium (mg/l)	MW-2	0.523	n/a	11/16/2023 0.005ND	No	51	MW-1	n/a	n/a	n/a	n/a	0.0007231	NP Inter (NDs) 1...
Zinc (mg/l)	MW-2	25	n/a	11/16/2023 0.025ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (normali...
Alkalinity (mg/l)	MW-3	746.3	78.58	11/16/2023 495	No	26	MW-1	5.49	0.4899	None	ln(x)	0.0002532	Param Inter 1 of 2
Alkalinity,Bicarbonate (mg/l)	MW-3	874.8	70.66	11/16/2023 495	No	26	MW-1	5.516	0.5476	None	ln(x)	0.0002532	Param Inter 1 of 2
Alkalinity,Carbonate (mg/l)	MW-3	100	0.06	11/16/2023 20ND	No	52	MW-1	n/a	n/a	n/a	n/a	0.001402	NP Inter (NDs) 1...
Antimony, Total (mg/l)	MW-3	0.338	n/a	11/16/2023 0.004ND	No	52	MW-1	n/a	n/a	n/a	n/a	0.000701	NP Inter (NDs) 1...
Arsenic (mg/l)	MW-3	0.075	n/a	11/16/2023 0.002ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (NDs) 1...
Barium (mg/l)	MW-3	1.18	n/a	11/16/2023 1.29	Yes	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (normali...
BERYLLIUM, TOTAL (mg/l)	MW-3	0.02	n/a	11/16/2023 0.002ND	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
CADMIUM, TOTAL (mg/l)	MW-3	0.04	n/a	11/16/2023 0.001ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (NDs) 1...
Calcium (mg/l)	MW-3	140.1	n/a	11/16/2023 120	No	54	MW-1	3.311	0.7655	None	ln(x)	0.0005064	Param Inter 1 of 2
Chloride (mg/l)	MW-3	61.12	n/a	11/16/2023 190	Yes	55	MW-1	2.994	0.5257	None	ln(x)	0.0005064	Param Inter 1 of 2
CHROMIUM, TOTAL (mg/l)	MW-3	0.099	n/a	11/16/2023 0.002ND	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
COBALT, TOTAL (mg/l)	MW-3	0.11	n/a	11/16/2023 0.002ND	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
COD (mg/l)	MW-3	280.7	n/a	11/16/2023 20ND	No	60	MW-1	3.337	1.09	None	ln(x)	0.0005064	Param Inter 1 of 2
Copper (mg/l)	MW-3	0.3	n/a	11/16/2023 0.005ND	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
LEAD, TOTAL (mg/l)	MW-3	0.078	n/a	11/16/2023 0.002ND	No	52	MW-1	n/a	n/a	n/a	n/a	0.000701	NP Inter (NDs) 1...
Magnesium (mg/l)	MW-3	67.53	n/a	11/16/2023 70.8	Yes	54	MW-1	2.558	0.7764	None	ln(x)	0.0005064	Param Inter 1 of 2
Nickel, Total (mg/l)	MW-3	0.19	n/a	11/16/2023 0.00488	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
Nitrate-Nitrite (mg/l)	MW-3	1	n/a	11/16/2023 0.1ND	No	55	MW-1	n/a	n/a	n/a	n/a	0.0006347	NP Inter (NDs) 1...
Potassium (mg/l)	MW-3	6.7	n/a	11/16/2023 2ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (normali...
Selenium (mg/l)	MW-3	0.528	n/a	11/16/2023 0.002ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (NDs) 1...
SILVER, TOTAL (mg/l)	MW-3	0.002	n/a	11/16/2023 0.002ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (NDs) 1...
Sodium (mg/l)	MW-3	54.5	n/a	11/16/2023 73.4	Yes	54	MW-1	2.842	0.5427	None	ln(x)	0.0005064	Param Inter 1 of 2
Sulfate (mg/l)	MW-3	42	n/a	11/16/2023 15.4	No	55	MW-1	n/a	n/a	n/a	n/a	0.0006347	NP Inter (normali...
THALLIUM, TOTAL (mg/l)	MW-3	0.056	n/a	11/16/2023 0.002ND	No	51	MW-1	n/a	n/a	n/a	n/a	0.0007231	NP Inter (NDs) 1...

Prediction Limit

Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase Printed 1/8/2024, 11:25 AM

Constituent	Well	Upper Lim.	Lower.Date	Observ.	Sig.	Bg N	Bg Wells	Bg Mean	Std. Dev.	ND Adj.	Transform	Alpha	Method
Vanadium (mg/l)	MW-3	0.523	n/a	11/16/2023 0.005ND	No	51	MW-1	n/a	n/a	n/a	n/a	0.0007231	NP Inter (NDs) 1...
Zinc (mg/l)	MW-3	25	n/a	11/16/2023 0.025ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (normali...
Alkalinity (mg/l)	MW-4	746.3	78.58	11/16/2023 535	No	26	MW-1	5.49	0.4899	None	ln(x)	0.0002532	Param Inter 1 of 2
Alkalinity,Bicarbonate (mg/l)	MW-4	874.8	70.66	11/16/2023 535	No	26	MW-1	5.516	0.5476	None	ln(x)	0.0002532	Param Inter 1 of 2
Alkalinity,Carbonate (mg/l)	MW-4	100	0.06	11/16/2023 20ND	No	52	MW-1	n/a	n/a	n/a	n/a	0.001402	NP Inter (NDs) 1...
Antimony, Total (mg/l)	MW-4	0.338	n/a	11/16/2023 0.004ND	No	52	MW-1	n/a	n/a	n/a	n/a	0.000701	NP Inter (NDs) 1...
Arsenic (mg/l)	MW-4	0.075	n/a	11/16/2023 0.00233	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (NDs) 1...
Barium (mg/l)	MW-4	1.18	n/a	11/16/2023 2.88	Yes	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (normali...
BERYLLIUM, TOTAL (mg/l)	MW-4	0.02	n/a	11/16/2023 0.002ND	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
CADMIUM, TOTAL (mg/l)	MW-4	0.04	n/a	11/16/2023 0.001ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (NDs) 1...
Calcium (mg/l)	MW-4	140.1	n/a	11/16/2023 95.4	No	54	MW-1	3.311	0.7655	None	ln(x)	0.0005064	Param Inter 1 of 2
Chloride (mg/l)	MW-4	61.12	n/a	11/16/2023 49.1	No	55	MW-1	2.994	0.5257	None	ln(x)	0.0005064	Param Inter 1 of 2
CHROMIUM, TOTAL (mg/l)	MW-4	0.099	n/a	11/16/2023 0.00203	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
COBALT, TOTAL (mg/l)	MW-4	0.11	n/a	11/16/2023 0.002ND	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
COD (mg/l)	MW-4	280.7	n/a	11/16/2023 20ND	No	60	MW-1	3.337	1.09	None	ln(x)	0.0005064	Param Inter 1 of 2
Copper (mg/l)	MW-4	0.3	n/a	11/16/2023 0.005ND	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
LEAD, TOTAL (mg/l)	MW-4	0.078	n/a	11/16/2023 0.002ND	No	52	MW-1	n/a	n/a	n/a	n/a	0.000701	NP Inter (NDs) 1...
Magnesium (mg/l)	MW-4	67.53	n/a	11/16/2023 62.5	No	54	MW-1	2.558	0.7764	None	ln(x)	0.0005064	Param Inter 1 of 2
Nickel, Total (mg/l)	MW-4	0.19	n/a	11/16/2023 0.002ND	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
Nitrate-Nitrite (mg/l)	MW-4	1	n/a	11/16/2023 0.1ND	No	55	MW-1	n/a	n/a	n/a	n/a	0.0006347	NP Inter (NDs) 1...
Potassium (mg/l)	MW-4	6.7	n/a	11/16/2023 2.63	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (normali...
Selenium (mg/l)	MW-4	0.528	n/a	11/16/2023 0.002ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (NDs) 1...
SILVER, TOTAL (mg/l)	MW-4	0.002	n/a	11/16/2023 0.002ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (NDs) 1...
Sodium (mg/l)	MW-4	54.5	n/a	11/16/2023 35.5	No	54	MW-1	2.842	0.5427	None	ln(x)	0.0005064	Param Inter 1 of 2
Sulfate (mg/l)	MW-4	42	n/a	11/16/2023 7.54	No	55	MW-1	n/a	n/a	n/a	n/a	0.0006347	NP Inter (normali...
THALLIUM, TOTAL (mg/l)	MW-4	0.056	n/a	11/16/2023 0.002ND	No	51	MW-1	n/a	n/a	n/a	n/a	0.0007231	NP Inter (NDs) 1...
Vanadium (mg/l)	MW-4	0.523	n/a	11/16/2023 0.005ND	No	51	MW-1	n/a	n/a	n/a	n/a	0.0007231	NP Inter (NDs) 1...
Zinc (mg/l)	MW-4	25	n/a	11/16/2023 0.025ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (normali...
Alkalinity (mg/l)	MW-5	746.3	78.58	11/16/2023 609	No	26	MW-1	5.49	0.4899	None	ln(x)	0.0002532	Param Inter 1 of 2
Alkalinity,Bicarbonate (mg/l)	MW-5	874.8	70.66	11/16/2023 609	No	26	MW-1	5.516	0.5476	None	ln(x)	0.0002532	Param Inter 1 of 2
Alkalinity,Carbonate (mg/l)	MW-5	100	0.06	11/16/2023 20ND	No	52	MW-1	n/a	n/a	n/a	n/a	0.001402	NP Inter (NDs) 1...
Antimony, Total (mg/l)	MW-5	0.338	n/a	11/16/2023 0.004ND	No	52	MW-1	n/a	n/a	n/a	n/a	0.000701	NP Inter (NDs) 1...
Arsenic (mg/l)	MW-5	0.075	n/a	11/16/2023 0.002ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (NDs) 1...
Barium (mg/l)	MW-5	1.18	n/a	11/16/2023 0.425	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (normali...
BERYLLIUM, TOTAL (mg/l)	MW-5	0.02	n/a	11/16/2023 0.002ND	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
CADMIUM, TOTAL (mg/l)	MW-5	0.04	n/a	11/16/2023 0.001ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (NDs) 1...
Calcium (mg/l)	MW-5	140.1	n/a	11/16/2023 114	No	54	MW-1	3.311	0.7655	None	ln(x)	0.0005064	Param Inter 1 of 2
Chloride (mg/l)	MW-5	61.12	n/a	11/16/2023 206	Yes	55	MW-1	2.994	0.5257	None	ln(x)	0.0005064	Param Inter 1 of 2
CHROMIUM, TOTAL (mg/l)	MW-5	0.099	n/a	11/16/2023 0.002ND	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
COBALT, TOTAL (mg/l)	MW-5	0.11	n/a	11/16/2023 0.002ND	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
COD (mg/l)	MW-5	280.7	n/a	11/16/2023 20ND	No	60	MW-1	3.337	1.09	None	ln(x)	0.0005064	Param Inter 1 of 2
Copper (mg/l)	MW-5	0.3	n/a	11/16/2023 0.005ND	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
LEAD, TOTAL (mg/l)	MW-5	0.078	n/a	11/16/2023 0.002ND	No	52	MW-1	n/a	n/a	n/a	n/a	0.000701	NP Inter (NDs) 1...
Magnesium (mg/l)	MW-5	67.53	n/a	11/16/2023 62.9	No	54	MW-1	2.558	0.7764	None	ln(x)	0.0005064	Param Inter 1 of 2
Nickel, Total (mg/l)	MW-5	0.19	n/a	11/16/2023 0.002ND	No	53	MW-1	n/a	n/a	n/a	n/a	0.0006789	NP Inter (NDs) 1...
Nitrate-Nitrite (mg/l)	MW-5	1	n/a	11/16/2023 1.12	Yes	55	MW-1	n/a	n/a	n/a	n/a	0.0006347	NP Inter (NDs) 1...
Potassium (mg/l)	MW-5	6.7	n/a	11/16/2023 4.48	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (normali...
Selenium (mg/l)	MW-5	0.528	n/a	11/16/2023 0.186	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (NDs) 1...
SILVER, TOTAL (mg/l)	MW-5	0.002	n/a	11/16/2023 0.002ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (NDs) 1...
Sodium (mg/l)	MW-5	54.5	n/a	11/16/2023 165	Yes	54	MW-1	2.842	0.5427	None	ln(x)	0.0005064	Param Inter 1 of 2

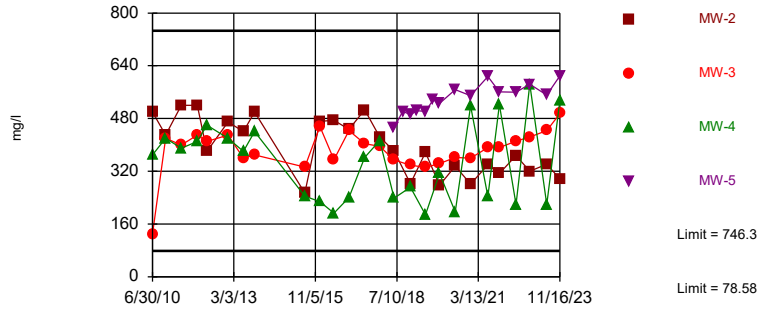
Prediction Limit

Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase Printed 1/8/2024, 11:25 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower.Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>Bg Wells</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>	
Sulfate (mg/l)	MW-5	42	n/a	11/16/2023	16.1	No	55	MW-1	n/a	n/a	n/a	n/a	0.0006347	NP Inter (normali...
THALLIUM, TOTAL (mg/l)	MW-5	0.056	n/a	11/16/2023	0.002ND	No	51	MW-1	n/a	n/a	n/a	n/a	0.0007231	NP Inter (NDs) 1...
Vanadium (mg/l)	MW-5	0.523	n/a	11/16/2023	0.0929	No	51	MW-1	n/a	n/a	n/a	n/a	0.0007231	NP Inter (NDs) 1...
Zinc (mg/l)	MW-5	25	n/a	11/16/2023	0.025ND	No	54	MW-1	n/a	n/a	n/a	n/a	0.0006568	NP Inter (normali...

Within Limits

Prediction Limit Interwell Parametric



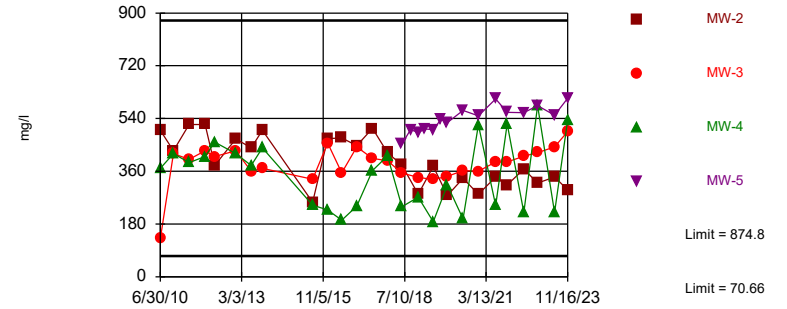
Background Data Summary (based on natural log transformation): Mean=5.49, Std. Dev.=0.4899, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9646, critical = 0.891. Kappa = 2.297 (c=26, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.002024. Individual comparison alpha = 0.0002532. Comparing 4 points to limit.

Constituent: Alkalinity Analysis Run 1/8/2024 11:23 AM

Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Within Limits

Prediction Limit Interwell Parametric



Background Data Summary (based on natural log transformation): Mean=5.516, Std. Dev.=0.5476, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9512, critical = 0.891. Kappa = 2.297 (c=26, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.002024. Individual comparison alpha = 0.0002532. Comparing 4 points to limit.

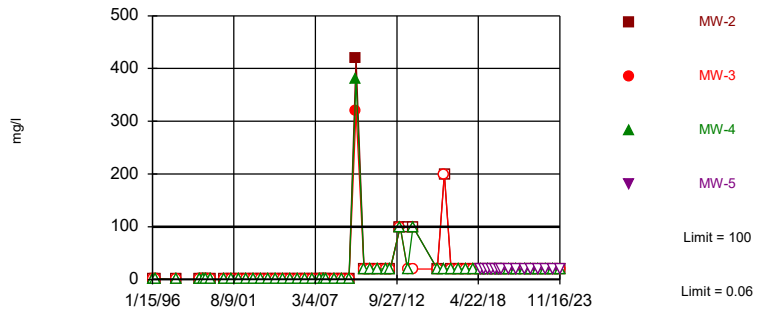
Constituent: Alkalinity, Bicarbonate Analysis Run 1/8/2024 11:23 AM

Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Hollow symbols indicate censored values.

Within Limits

Prediction Limit Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limits are highest and lowest of 52 background values. 98.08% NDs. Annual per-constituent alpha = 0.01119. Individual comparison alpha = 0.001402 (1 of 2). Comparing 4 points to limit.

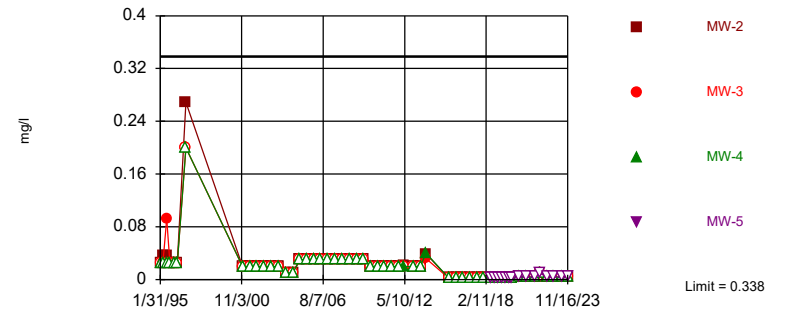
Constituent: Alkalinity, Carbonate Analysis Run 1/8/2024 11:23 AM

Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Hollow symbols indicate censored values.

Within Limit

Prediction Limit Interwell Non-parametric



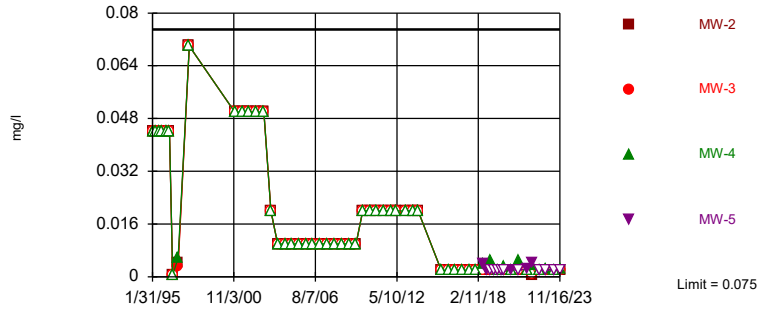
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 52 background values. 96.15% NDs. Annual per-constituent alpha = 0.005594. Individual comparison alpha = 0.000701 (1 of 2). Comparing 4 points to limit.

Constituent: Antimony, Total Analysis Run 1/8/2024 11:23 AM

Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Within Limit

Prediction Limit
Interwell Non-parametric

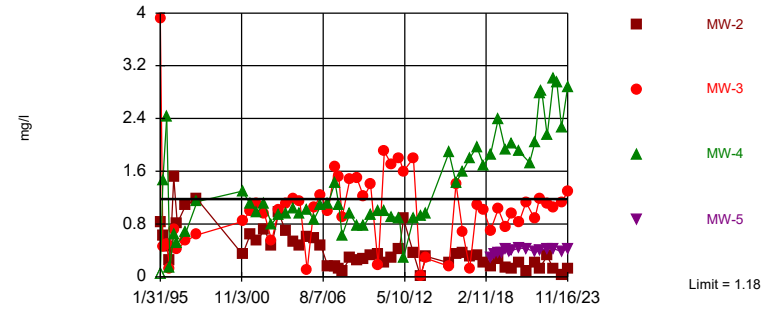


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 54 background values. 72.22% NDs. Annual per-constituent alpha = 0.005242. Individual comparison alpha = 0.0006568 (1 of 2). Comparing 4 points to limit.

Constituent: Arsenic Analysis Run 1/8/2024 11:23 AM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Exceeds Limit: MW-3, MW-4

Prediction Limit
Interwell Non-parametric

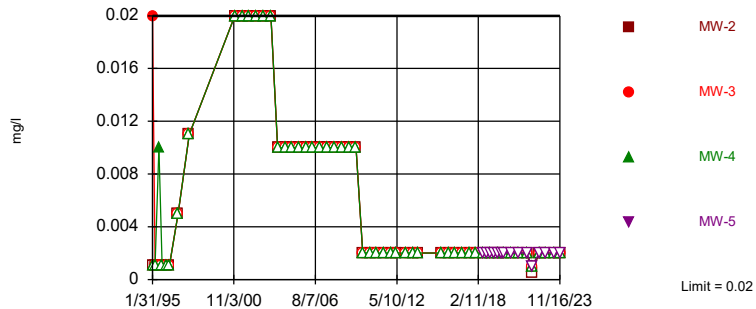


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 54 background values. 3.704% NDs. Annual per-constituent alpha = 0.005242. Individual comparison alpha = 0.0006568 (1 of 2). Comparing 4 points to limit.

Constituent: Barium Analysis Run 1/8/2024 11:23 AM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Within Limit

Prediction Limit
Interwell Non-parametric

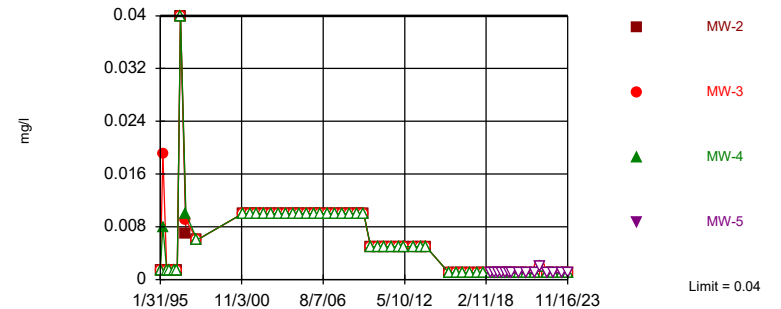


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 53 background values. 98.11% NDs. Annual per-constituent alpha = 0.005418. Individual comparison alpha = 0.0006789 (1 of 2). Comparing 4 points to limit.

Constituent: BERYLLIUM, TOTAL Analysis Run 1/8/2024 11:23 AM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Within Limit

Prediction Limit
Interwell Non-parametric

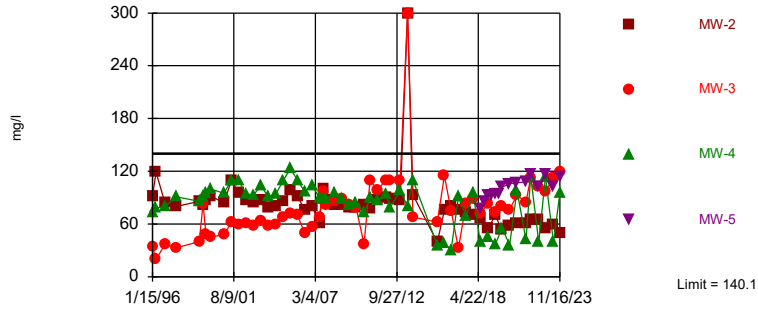


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 54 background values. 96.3% NDs. Annual per-constituent alpha = 0.005242. Individual comparison alpha = 0.0006568 (1 of 2). Comparing 4 points to limit.

Constituent: CADMIUM, TOTAL Analysis Run 1/8/2024 11:23 AM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Within Limit

Prediction Limit Interwell Parametric

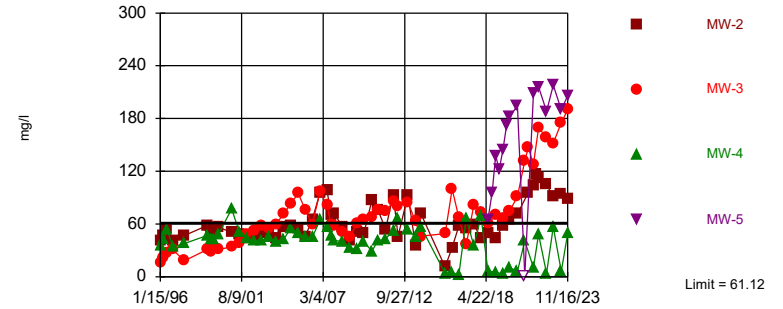


Background Data Summary (based on natural log transformation): Mean=3.311, Std. Dev.=0.7655, n=54. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.955, critical = 0.939. Kappa = 2.131 (c=26, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.002024. Individual comparison alpha = 0.0005064. Comparing 4 points to limit.

Constituent: Calcium Analysis Run 1/8/2024 11:23 AM
 Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Hollow symbols indicate censored values.
 Exceeds Limit: MW-2, MW-3, MW-5

Prediction Limit Interwell Parametric



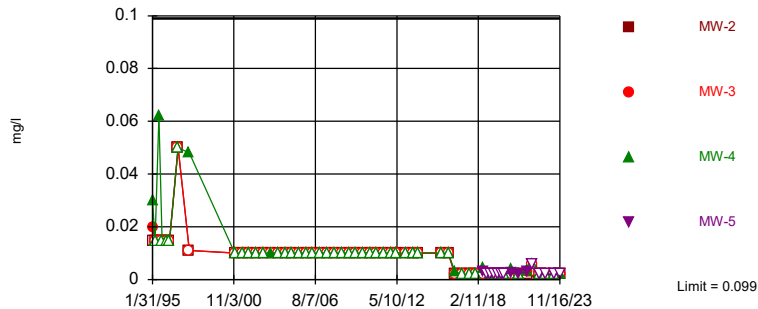
Background Data Summary (based on natural log transformation): Mean=2.994, Std. Dev.=0.5257, n=55. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.969, critical = 0.94. Kappa = 2.128 (c=26, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.002024. Individual comparison alpha = 0.0005064. Comparing 4 points to limit.

Constituent: Chloride Analysis Run 1/8/2024 11:23 AM
 Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Hollow symbols indicate censored values.

Within Limit

Prediction Limit Interwell Non-parametric



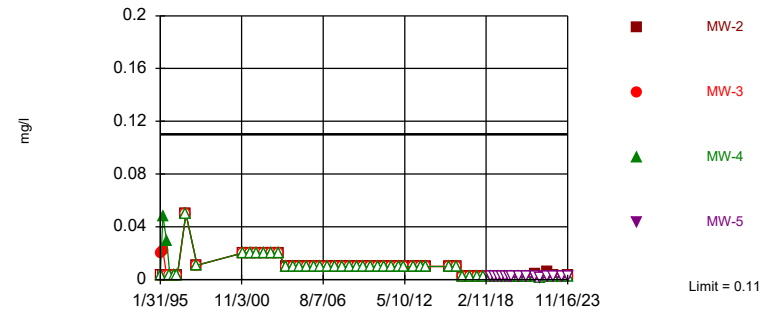
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 53 background values. 92.45% NDs. Annual per-constituent alpha = 0.005418. Individual comparison alpha = 0.0006789 (1 of 2). Comparing 4 points to limit.

Constituent: CHROMIUM, TOTAL Analysis Run 1/8/2024 11:23 AM
 Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Hollow symbols indicate censored values.

Within Limit

Prediction Limit Interwell Non-parametric

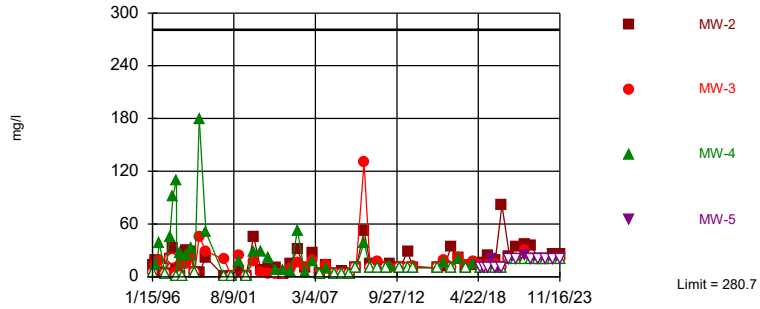


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 53 background values. 79.25% NDs. Annual per-constituent alpha = 0.005418. Individual comparison alpha = 0.0006789 (1 of 2). Comparing 4 points to limit.

Constituent: COBALT, TOTAL Analysis Run 1/8/2024 11:23 AM
 Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Within Limit

Prediction Limit
Interwell Parametric



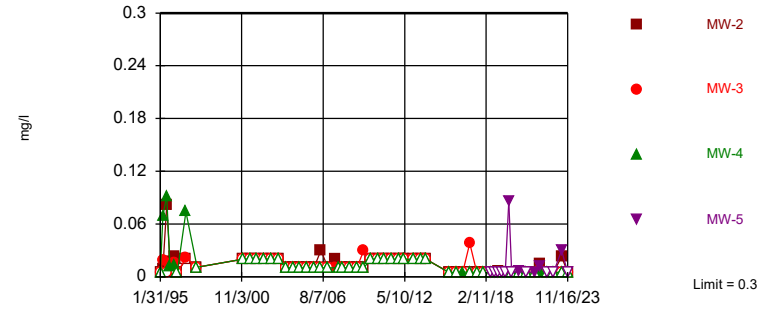
Background Data Summary (based on natural log transformation): Mean=3.337, Std. Dev.=1.09, n=60, 13.33% NDs. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9762, critical = 0.945. Kappa = 2.111 (c=26, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.002024. Individual comparison alpha = 0.0005064. Comparing 4 points to limit.

Constituent: COD Analysis Run 1/8/2024 11:24 AM

Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Within Limit

Prediction Limit
Interwell Non-parametric



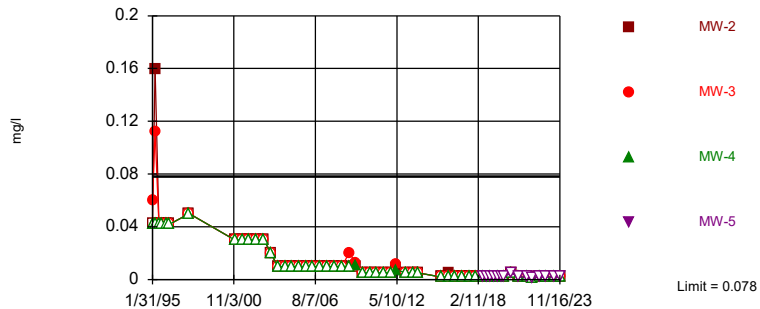
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 53 background values. 56.6% NDs. Annual per-constituent alpha = 0.005418. Individual comparison alpha = 0.0006789 (1 of 2). Comparing 4 points to limit.

Constituent: Copper Analysis Run 1/8/2024 11:24 AM

Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Within Limit

Prediction Limit
Interwell Non-parametric



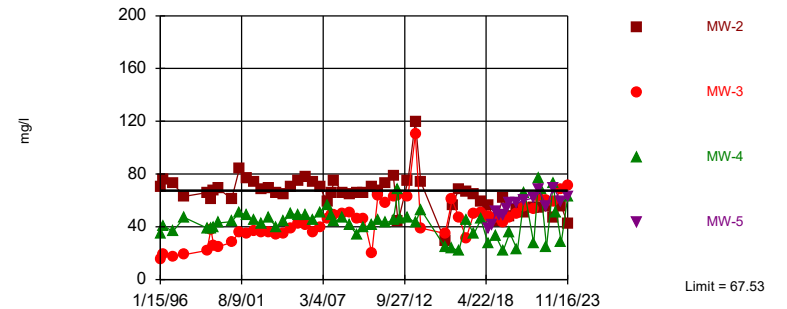
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 52 background values. 94.23% NDs. Annual per-constituent alpha = 0.005594. Individual comparison alpha = 0.000701 (1 of 2). Comparing 4 points to limit.

Constituent: LEAD, TOTAL Analysis Run 1/8/2024 11:24 AM

Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Exceeds Limit: MW-3

Prediction Limit
Interwell Parametric



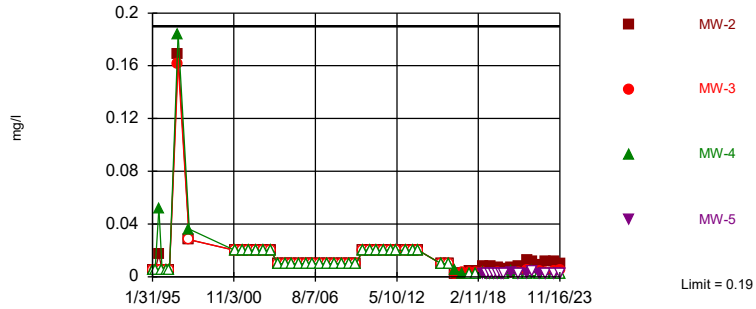
Background Data Summary (based on natural log transformation): Mean=2.558, Std. Dev.=0.7764, n=54. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9608, critical = 0.939. Kappa = 2.131 (c=26, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.002024. Individual comparison alpha = 0.0005064. Comparing 4 points to limit.

Constituent: Magnesium Analysis Run 1/8/2024 11:24 AM

Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Within Limit

Prediction Limit
Interwell Non-parametric

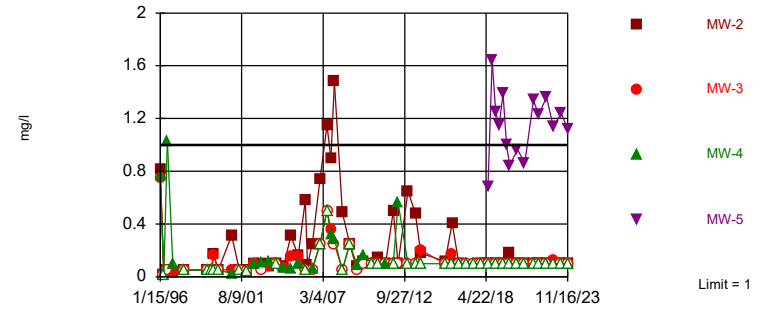


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 53 background values. 79.25% NDs. Annual per-constituent alpha = 0.005418. Individual comparison alpha = 0.0006789 (1 of 2). Comparing 4 points to limit.

Constituent: Nickel, Total Analysis Run 1/8/2024 11:24 AM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Exceeds Limit: MW-5

Prediction Limit
Interwell Non-parametric

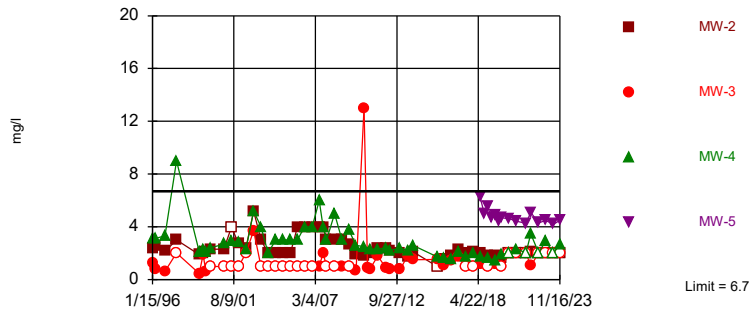


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 55 background values. 58.18% NDs. Annual per-constituent alpha = 0.005067. Individual comparison alpha = 0.0006347 (1 of 2). Comparing 4 points to limit.

Constituent: Nitrate-Nitrite Analysis Run 1/8/2024 11:24 AM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Within Limit

Prediction Limit
Interwell Non-parametric

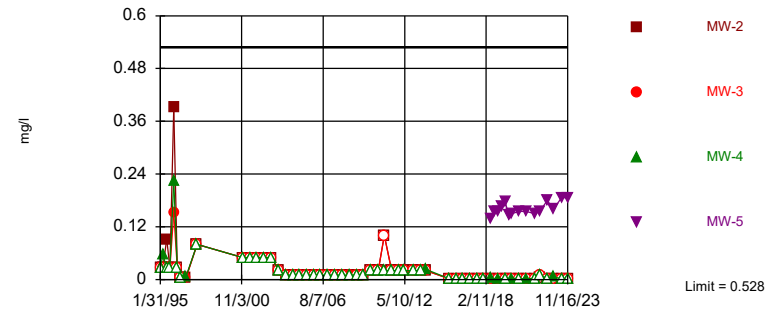


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 54 background values. 18.52% NDs. Annual per-constituent alpha = 0.005242. Individual comparison alpha = 0.0006568 (1 of 2). Comparing 4 points to limit.

Constituent: Potassium Analysis Run 1/8/2024 11:24 AM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Within Limit

Prediction Limit
Interwell Non-parametric

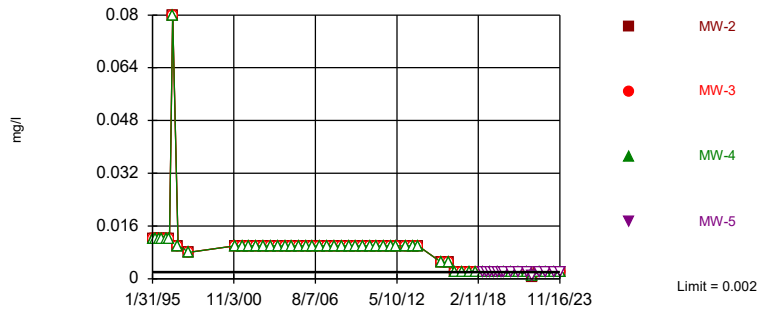


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 54 background values. 96.3% NDs. Annual per-constituent alpha = 0.005242. Individual comparison alpha = 0.0006568 (1 of 2). Comparing 4 points to limit.

Constituent: Selenium Analysis Run 1/8/2024 11:24 AM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Within Limit

Prediction Limit
Interwell Non-parametric

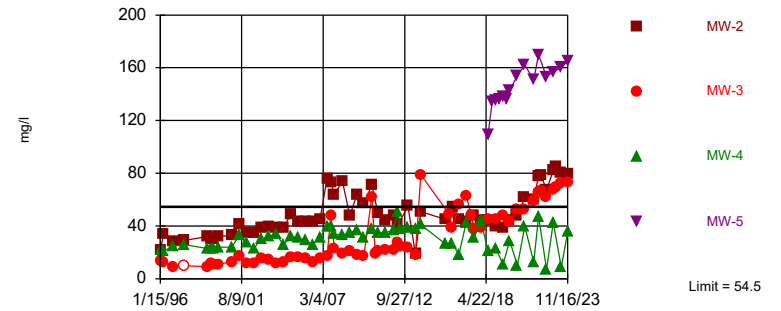


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 54) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.005242. Individual comparison alpha = 0.0006568 (1 of 2). Comparing 4 points to limit.

Constituent: SILVER, TOTAL Analysis Run 1/8/2024 11:24 AM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Exceeds Limit: MW-2, MW-3, MW-5

Prediction Limit
Interwell Parametric

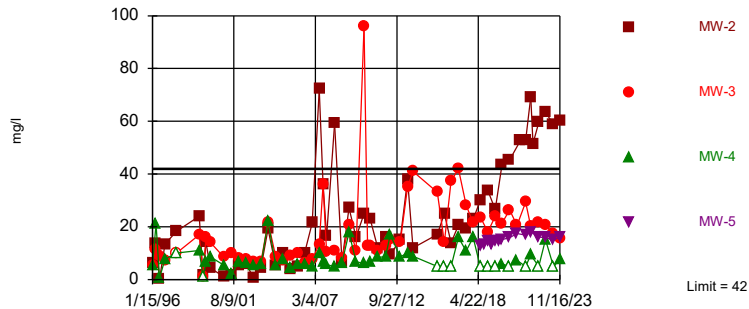


Background Data Summary (based on natural log transformation): Mean=2.842, Std. Dev.=0.5427, n=54. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9507, critical = 0.939. Kappa = 2.131 (c=26, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.002024. Individual comparison alpha = 0.0005064. Comparing 4 points to limit.

Constituent: Sodium Analysis Run 1/8/2024 11:24 AM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Exceeds Limit: MW-2

Prediction Limit
Interwell Non-parametric

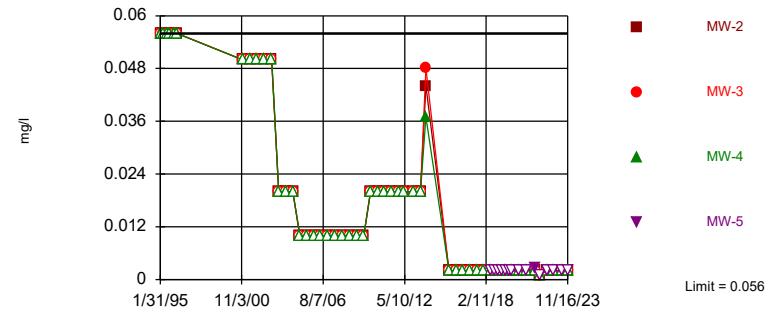


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 55 background values. 40% NDs. Annual per-constituent alpha = 0.005067. Individual comparison alpha = 0.0006347 (1 of 2). Comparing 4 points to limit.

Constituent: Sulfate Analysis Run 1/8/2024 11:24 AM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Within Limit

Prediction Limit
Interwell Non-parametric

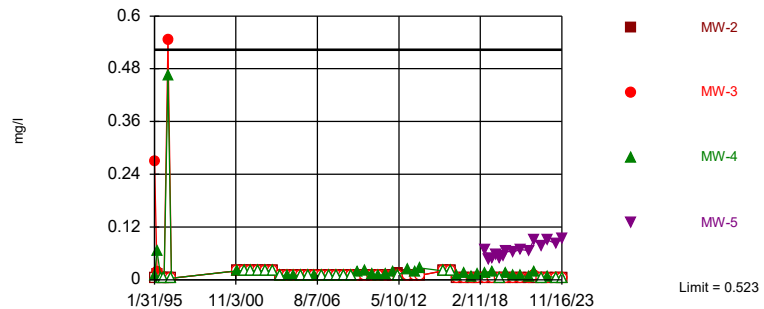


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 51 background values. 96.08% NDs. Annual per-constituent alpha = 0.00577. Individual comparison alpha = 0.0007231 (1 of 2). Comparing 4 points to limit.

Constituent: THALLIUM, TOTAL Analysis Run 1/8/2024 11:24 AM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Within Limit

Prediction Limit Interwell Non-parametric

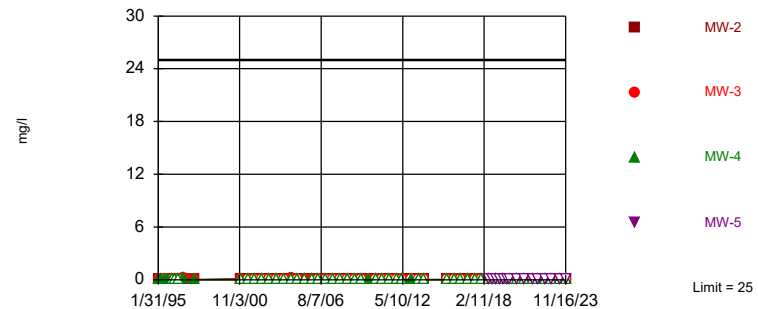


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 51 background values. 82.35% NDs. Annual per-constituent alpha = 0.00577. Individual comparison alpha = 0.0007231 (1 of 2). Comparing 4 points to limit.

Constituent: Vanadium Analysis Run 1/8/2024 11:24 AM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Within Limit

Prediction Limit Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 54 background values. 9.259% NDs. Annual per-constituent alpha = 0.005242. Individual comparison alpha = 0.0006568 (1 of 2). Comparing 4 points to limit.

Constituent: Zinc Analysis Run 1/8/2024 11:24 AM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

ATTACHMENT 2

INTRAWELL STATISTICAL PLOTS

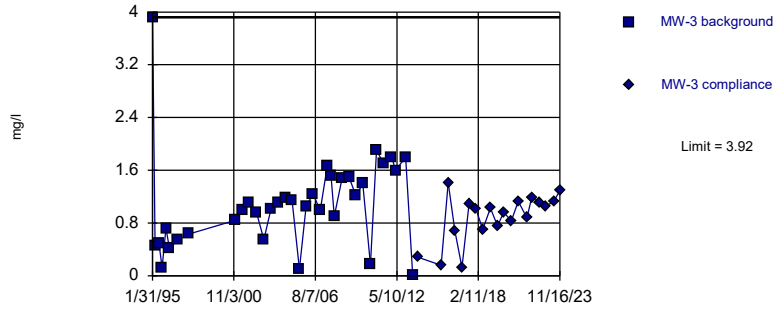
Prediction Limit

Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase Printed 1/9/2024, 9:47 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower.Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>Bg Wells</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Chloride (mg/l)	MW-2	98.4	n/a	11/16/2023	88.3	No	36	n/a	n/a	n/a	n/a	0.001429	NP Intra (normali...
Sodium (mg/l)	MW-2	76.8	n/a	11/16/2023	79.4	Yes	35	n/a	44.13	14.75	None	No	0.0005064 Param Intra 1 of 2
Sulfate (mg/l)	MW-2	141.3	n/a	11/16/2023	60.1	No	36	n/a	2.203	1.245	None	ln(x)	0.0005064 Param Intra 1 of 2
Barium (mg/l)	MW-3	3.92	n/a	11/16/2023	1.29	No	35	n/a	n/a	n/a	n/a	0.001497	NP Intra (normali...
Chloride (mg/l)	MW-3	105.8	n/a	11/16/2023	190	Yes	36	n/a	56.08	22.52	None	No	0.0005064 Param Intra 1 of 2
Magnesium (mg/l)	MW-3	97.28	n/a	11/16/2023	70.8	No	35	n/a	3.626	0.4298	None	ln(x)	0.0005064 Param Intra 1 of 2
Sodium (mg/l)	MW-3	62	n/a	11/16/2023	73.4	Yes	37	n/a	n/a	n/a	n/a	0.001361	NP Intra (normali...
Barium (mg/l)	MW-4	2.42	n/a	11/16/2023	2.88	Yes	35	n/a	n/a	n/a	n/a	0.001497	NP Intra (normali...

Within Limit

Prediction Limit Intrawell Non-parametric

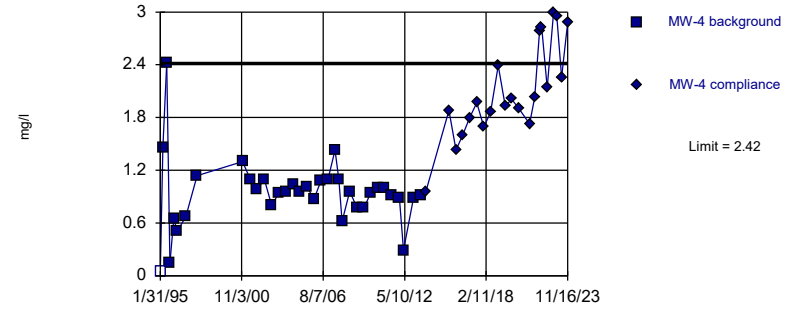


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 35 background values. Well-constituent pair annual alpha = 0.002991. Individual comparison alpha = 0.001497 (1 of 2).

Constituent: Barium Analysis Run 1/8/2024 12:10 PM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Exceeds Limit

Prediction Limit Intrawell Non-parametric

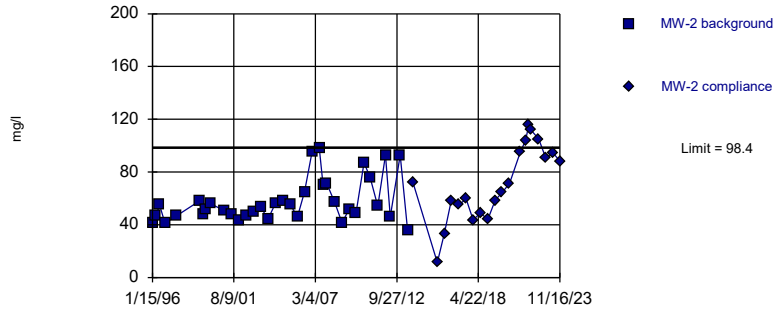


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 35 background values. 2.857% NDs. Well-constituent pair annual alpha = 0.002991. Individual comparison alpha = 0.001497 (1 of 2).

Constituent: Barium Analysis Run 1/8/2024 12:10 PM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Within Limit

Prediction Limit Intrawell Non-parametric

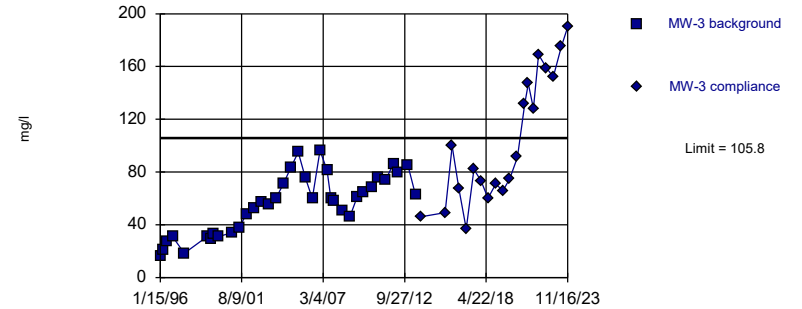


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 36 background values. Well-constituent pair annual alpha = 0.002856. Individual comparison alpha = 0.001429 (1 of 2).

Constituent: Chloride Analysis Run 1/8/2024 12:10 PM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Exceeds Limit

Prediction Limit Intrawell Parametric

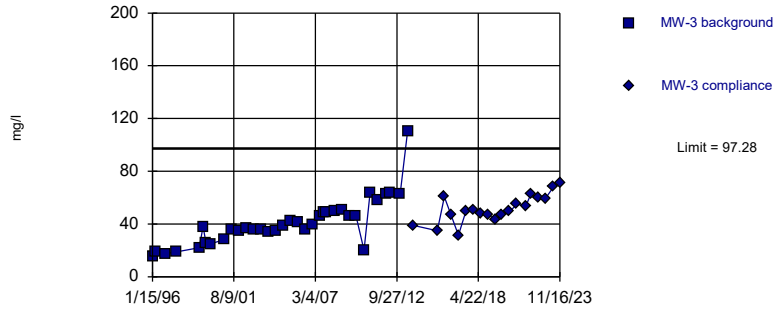


Background Data Summary: Mean=56.08, Std. Dev.=22.52, n=36. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9549, critical = 0.912. Kappa = 2.208 (c=26, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005064.

Constituent: Chloride Analysis Run 1/8/2024 12:10 PM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Within Limit

Prediction Limit Intrawell Parametric

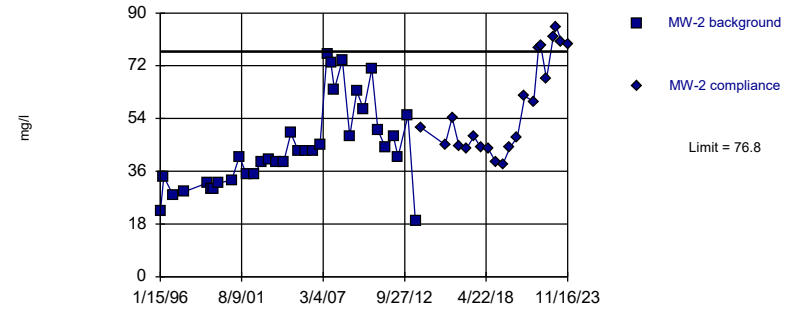


Background Data Summary (based on natural log transformation): Mean=3.626, Std. Dev.=0.4298, n=35. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9649, critical = 0.91. Kappa = 2.214 (c=26, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005064.

Constituent: Magnesium Analysis Run 1/8/2024 12:10 PM
 Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Exceeds Limit

Prediction Limit Intrawell Parametric

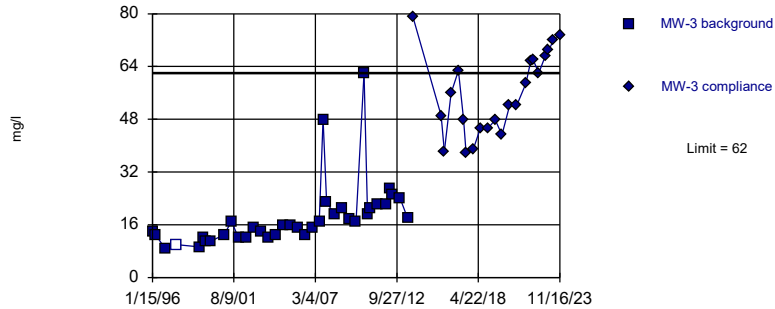


Background Data Summary: Mean=44.13, Std. Dev.=14.75, n=35. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9311, critical = 0.91. Kappa = 2.214 (c=26, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005064.

Constituent: Sodium Analysis Run 1/8/2024 12:10 PM
 Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Exceeds Limit

Prediction Limit Intrawell Non-parametric

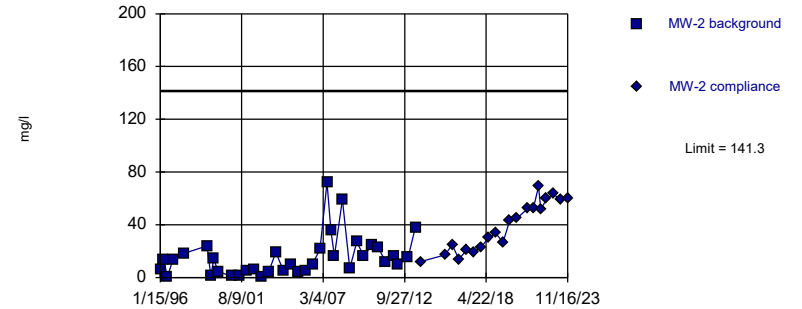


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 37 background values. 2.703% NDs. Well-constituent pair annual alpha = 0.002721. Individual comparison alpha = 0.001361 (1 of 2).

Constituent: Sodium Analysis Run 1/8/2024 12:10 PM
 Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Within Limit

Prediction Limit Intrawell Parametric



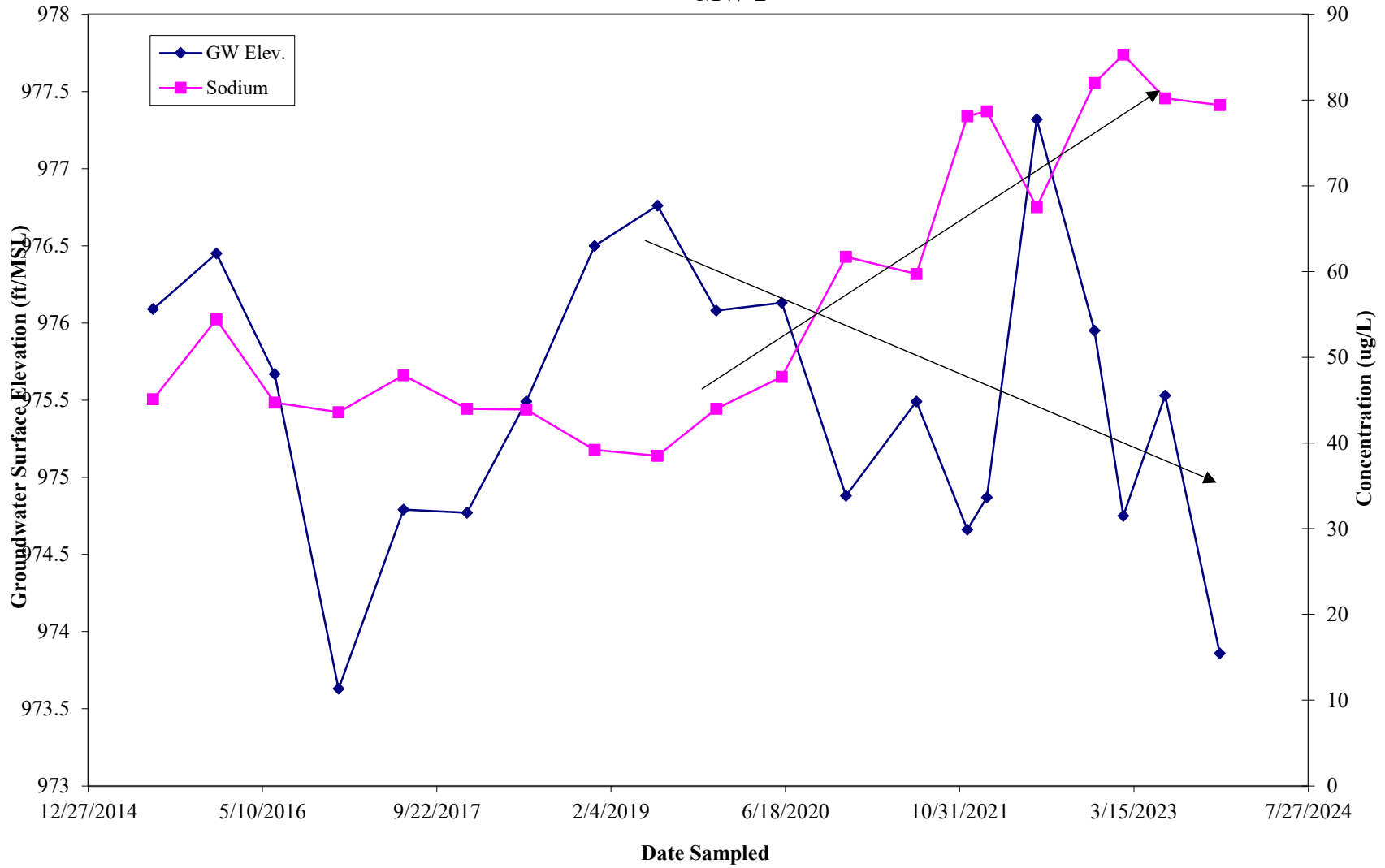
Background Data Summary (based on natural log transformation): Mean=2.203, Std. Dev.=1.245, n=36. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9349, critical = 0.912. Kappa = 2.208 (c=26, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005064.

Constituent: Sulfate Analysis Run 1/8/2024 12:10 PM
 Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

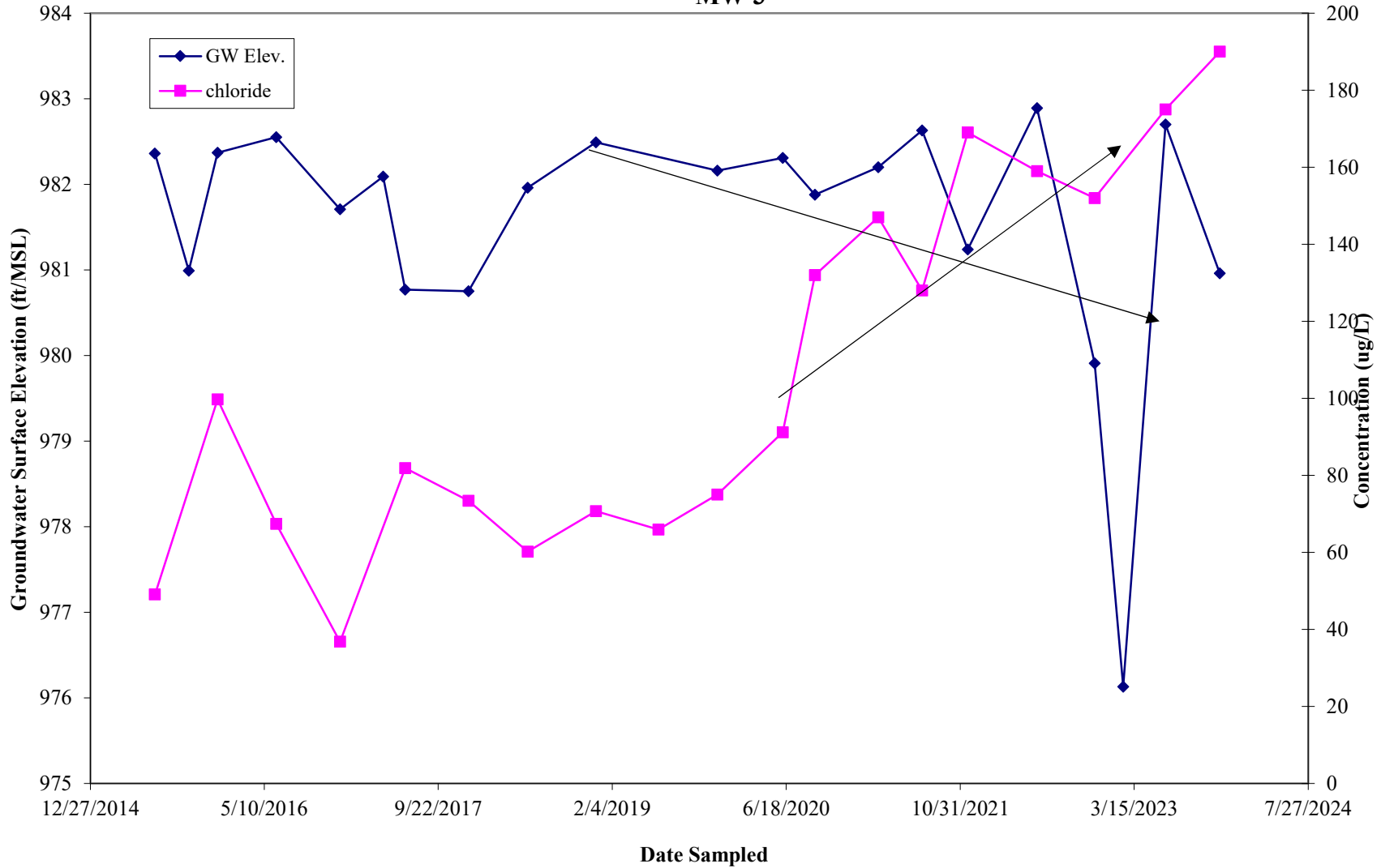
ATTACHMENT 3

**UPDATED TIME-SERIES PLOTS – MW-2, MW-3
AND MW-4**

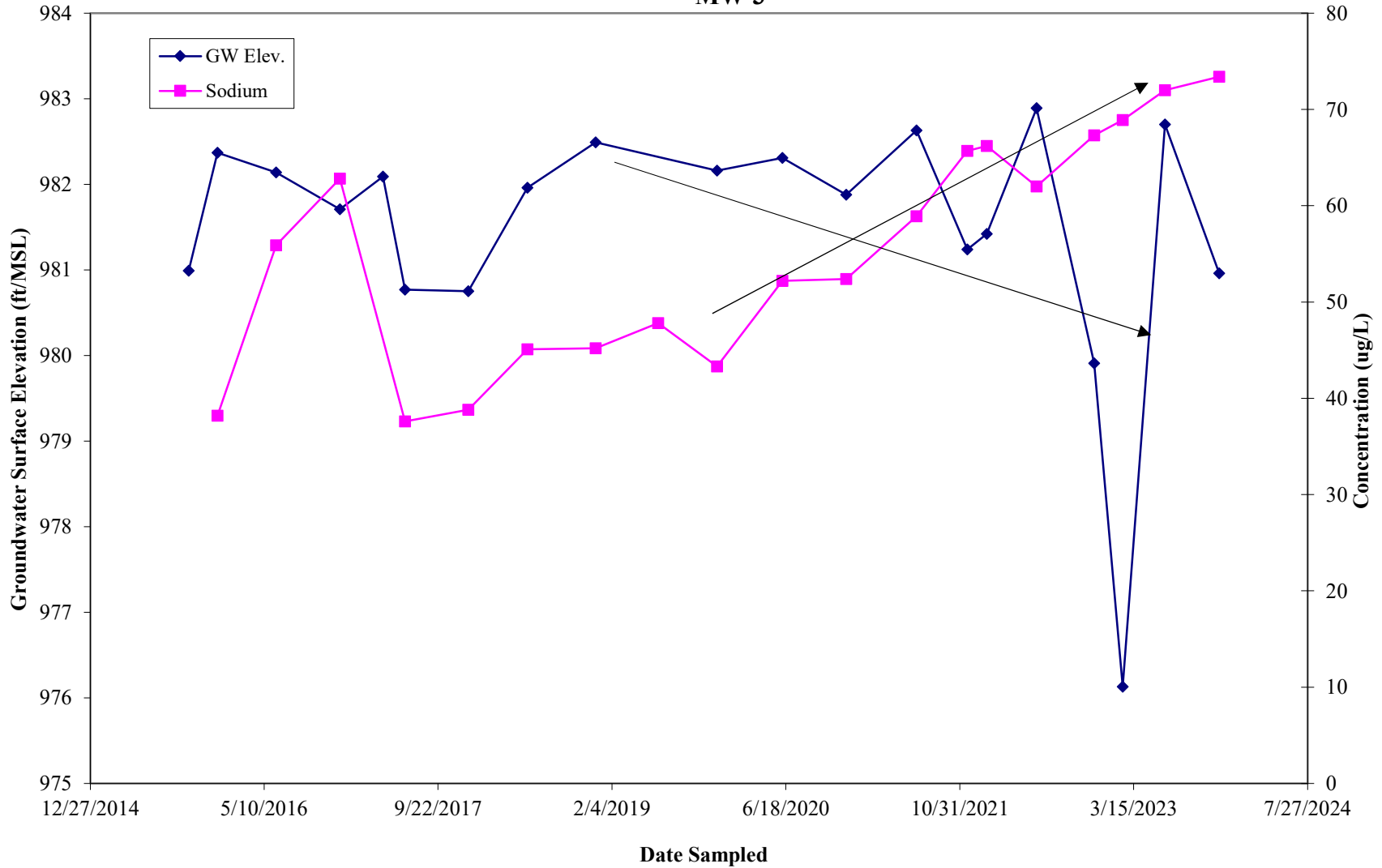
Time-Series Comparison Groundwater Surface Elevation Vs. Concentration MW-2



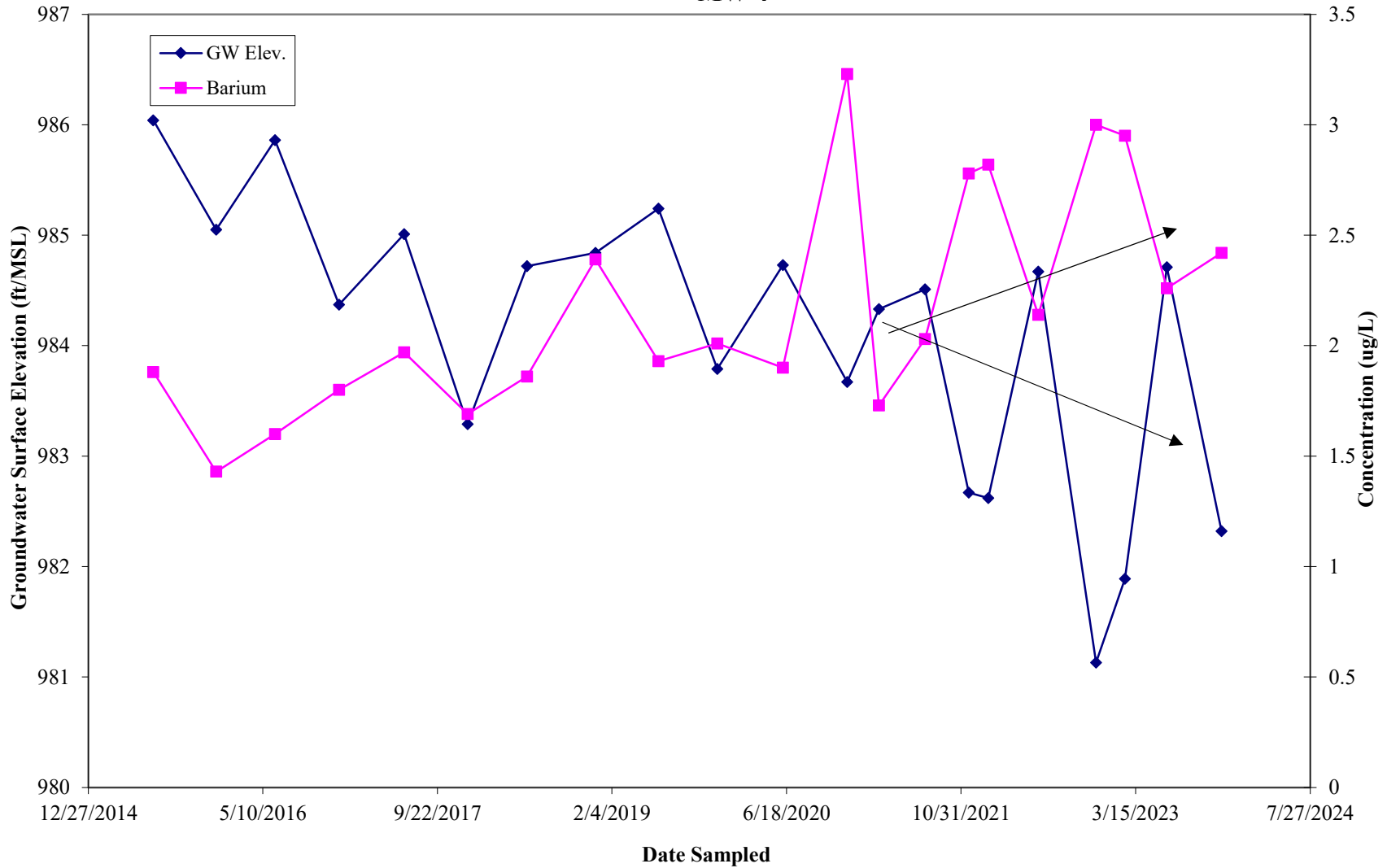
Time-Series Comparison
Groundwater Surface Elevation Vs. Concentration
MW-3



Time-Series Comparison Groundwater Surface Elevation Vs. Concentration MW-3



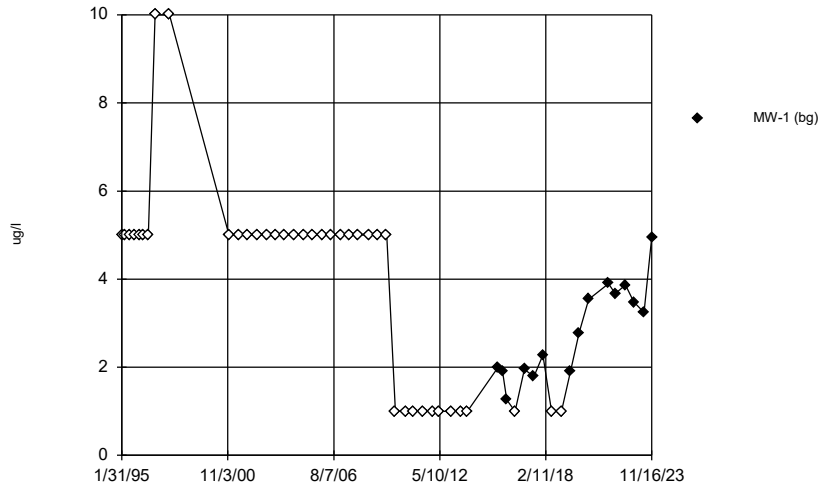
Time-Series Comparison
Groundwater Surface Elevation Vs. Concentration
MW-4



ATTACHMENT 4

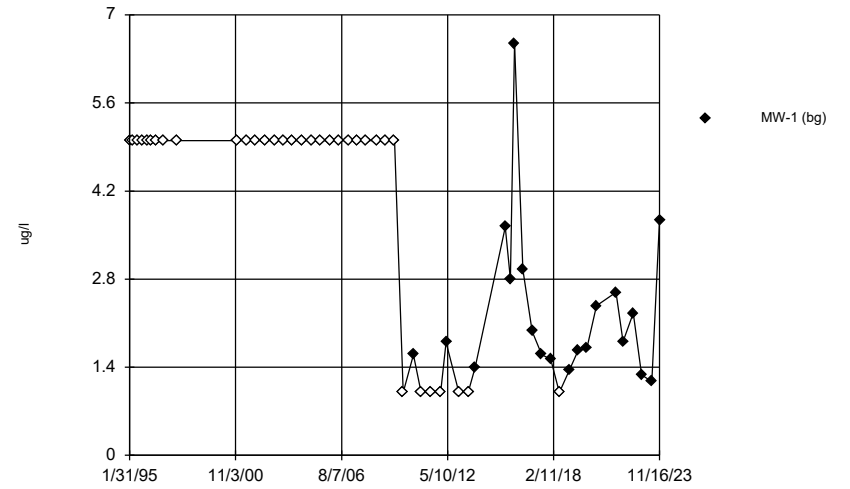
TIME SERIES PLOTS - VOCS - MW-1

Time Series



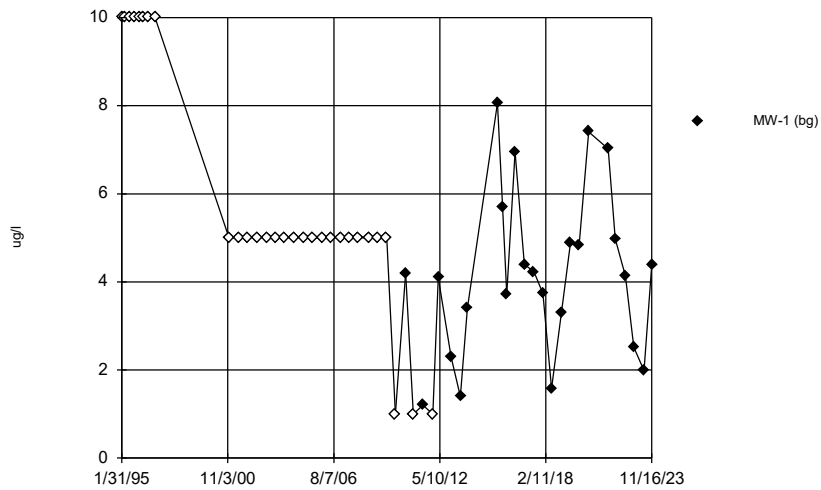
Constituent: 1,4-Dichlorobenzene Analysis Run 1/12/2024 4:42 PM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Time Series



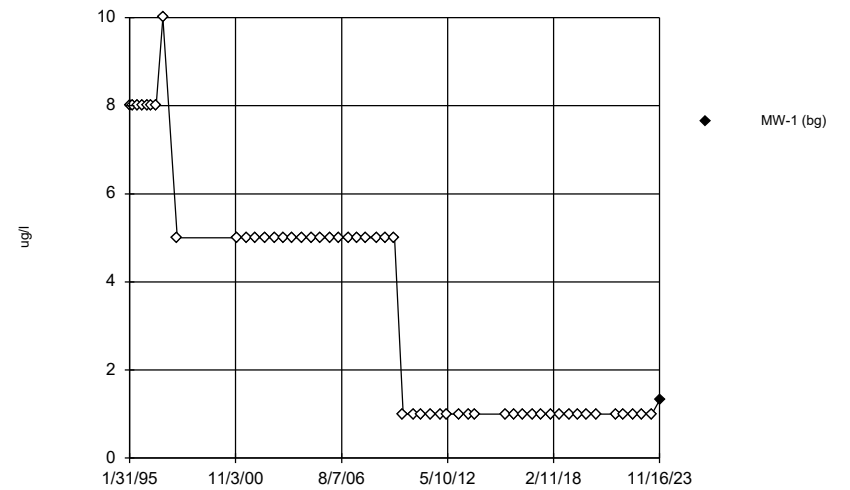
Constituent: Benzene Analysis Run 1/12/2024 4:42 PM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Time Series



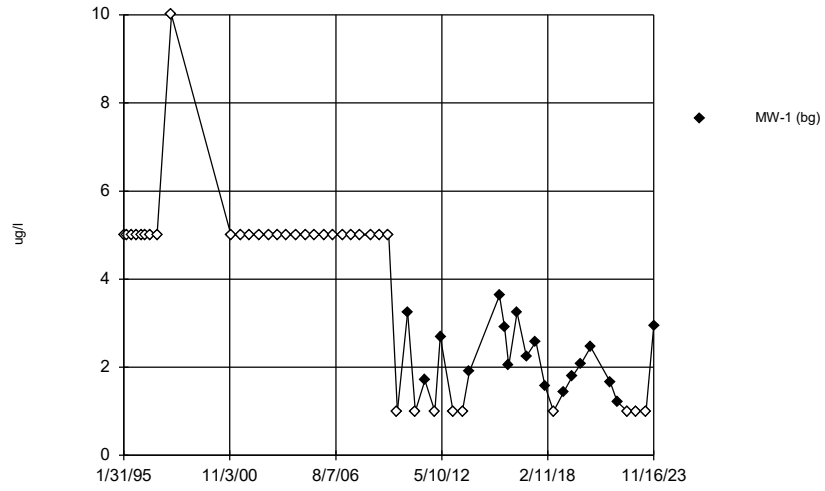
Constituent: cis-1,2-Dichloroethene Analysis Run 1/12/2024 4:42 PM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Time Series



Constituent: Ethylbenzene Analysis Run 1/12/2024 4:42 PM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Time Series



ATTACHMENT 5

CONFIDENCE INTERVAL PLOTS

Confidence Interval

Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase Printed 1/15/2024, 9:05 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
1,4-Dichlorobenzene (ug/l)	MW-1 (bg)	4.473	3.211	75	No	5	3.842	0.6617	0	None	No	0.05	Param.
Benzene (ug/l)	MW-1 (bg)	3.043	1.061	5	No	5	2.052	1.04	0	None	No	0.05	Param.
cis-1,2-Dichloroethene (ug/l)	MW-1 (bg)	4.82	2.38	70	No	5	3.6	1.28	0	None	No	0.05	Param.
Ethylbenzene (ug/l)	MW-1 (bg)	1.31	1	700	No	5	1.062	0.1386	80	None	No	0.031	NP (NDs)
Vinyl chloride (ug/l)	MW-1 (bg)	2.93	1	2	No	5	1.43	0.8439	60	None	No	0.031	NP (normality)

Parametric Confidence Interval

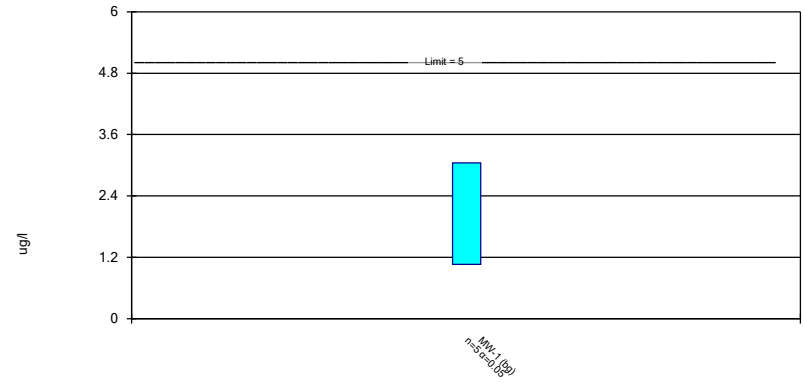
Compliance Limit is not exceeded. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: 1,4-Dichlorobenzene Analysis Run 1/15/2024 8:46 AM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Parametric Confidence Interval

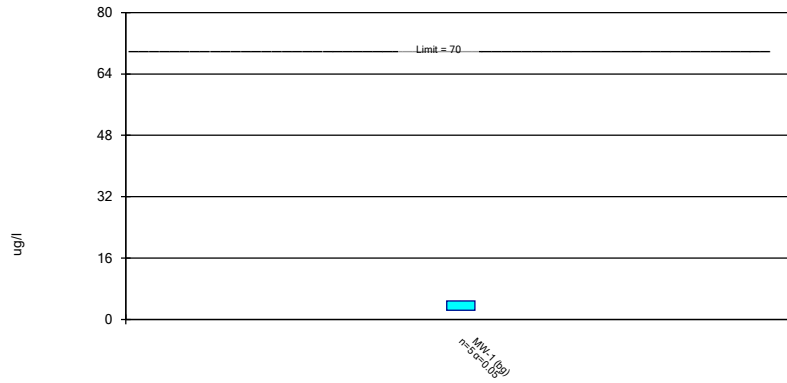
Compliance Limit is not exceeded. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Benzene Analysis Run 1/15/2024 8:46 AM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Parametric Confidence Interval

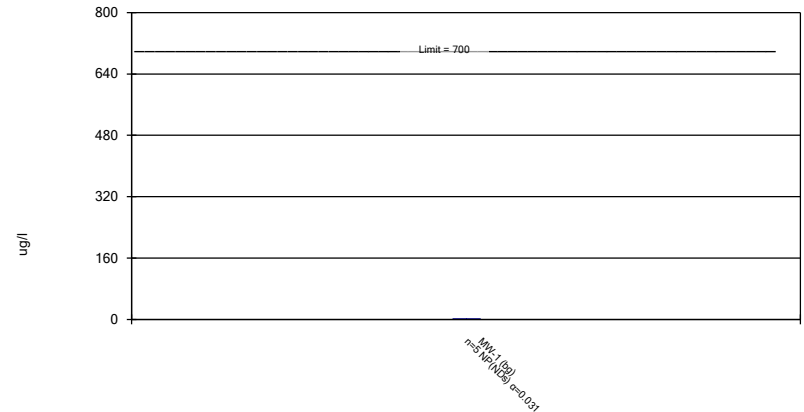
Compliance Limit is not exceeded. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: cis-1,2-Dichloroethene Analysis Run 1/15/2024 8:46 AM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Non-Parametric Confidence Interval

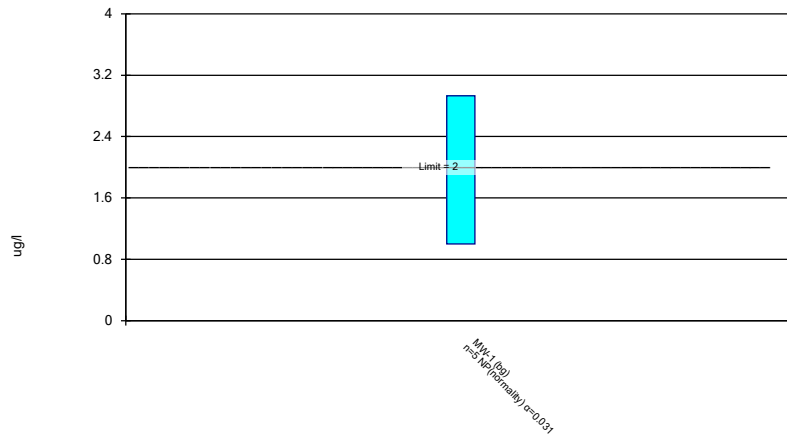
Compliance Limit is not exceeded.



Constituent: Ethylbenzene Analysis Run 1/15/2024 8:46 AM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Vinyl chloride Analysis Run 1/15/2024 8:46 AM
Absolute Waste Solutions LF Client: The Carel Corporation Data: AWS dbase