November 30, 2023
File No. 27223229.00

Mr. Mick Leat
Iowa Department of Natural Resources
Land Quality Bureau
Wallace State Office Building
502 East 9th Street
Des Moines, Iowa 50319-0034

Subject: 2023 Annual Water Quality Report & Landfill Gas Annual Report
Anderson Excavating Carter Lake C&D Landfill
Permit No. 78-SDP-02-80C

Dear Mick:

SCS Engineers, on behalf of Anderson Excavating Company, has completed the water quality monitoring and assessment for the closed Carter Lake C&D Landfill for the year 2023. Our services were performed in general accordance with Iowa Administrative Code (IAC) 567-103 and the current requirements for implementation of the Hydrologic Monitoring System Plan (HMSP). Please find enclosed the 2023 Annual Water Quality Report and 2023 Landfill Gas Annual Report for the Carter Lake C&D Landfill.

If you have any questions regarding this report, please contact Nathan Ohrt at (319) 331-9613.

Sincerely,

Nathan Ohrt
Senior Project Professional
SCS Engineers

Timothy C. Buelow, P.E.
Project Director
SCS Engineers

NPO/TCB

Copies: Ms. Virginia Anderson, Anderson Excavating

2023 ANNUAL WATER QUALITY REPORT & LANDFILL GAS ANNUAL REPORT

FOR

ANDERSON EXCAVATING C&D LANDFILL

(CLOSED)

CARTER LAKE, IOWA

SOLID WASTE PERMIT NUMBER: 78-SDP-02-80C

SUBMITTAL DATE: NOVEMBER 2023

PREPARED FOR:

ANDERSON EXCAVATING COMPANY

PREPARED BY:

SCS ENGINEERS

Certification

Prepared by: _____ Date: 11/30/2023

Typed: Nathan Ohrt

Reviewed by: _____ Date: 11/30/2023

Typed: Timothy C. Buelow

Certification page (114.26(8)"d")

An annual report summarizing the effect of the facility on groundwater and surface water quality shall be submitted to the department each year. The summary is to be prepared by an engineer registered in the state of Iowa.

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

_____ Date: 11/30/23

Timothy C. Buelow, P.E.

License No. 14445

My license renewal date is December 31, 2023.

Pages or sheets covered by this seal:

All except Appendix B-1.

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Executive Summary

ES.1 Period of Report Coverage

SCS Engineers (SCS), on behalf of Anderson Excavating Company, has completed the required groundwater sampling of the closed Carter Lake Construction & Demolition (C&D) Landfill (Landfill). The purpose of this Annual Water Quality Report (AWQR) is to document and statistically evaluate the groundwater sampling results since the 2022 AWQR up to and including the October 2023 semi-annual sampling event. This AWQR was prepared in accordance with the requirements of Iowa Administrative Code (IAC) 567-103 (1994 version), the site closure permit, and current requirements for implementation of the Hydrologic Monitoring System Plan (HMSP).

ES.2 Report Priority

The following summarizes report priorities associated with groundwater compliance at the Landfill:

- Department review urgency: None.
- Department review impact on rules schedule: None.
- Actions or activities on hold pending Department review or comment: None.
- Actions and/or permit amendments needed: None.

ES.3 Site Status and Applicable Rules

- Landfill Status: Closed.
- Types of waste accepted: Previously C&D.
- Applicable IAC rules: 1994 IAC 567-103.

ES.4 Comments

The following summarizes points of special emphasis:

As discussed in Section 5.2 of this report, Mann-Kendall trend analysis indicated that 75% of the monitoring well/constituent pairs were considered stable or decreasing during the 2023 annual statistical evaluation. This indicates stable groundwater conditions at the Landfill.

Due to the drought conditions in the region, monitoring well MW-1R was the only compliance downgradient monitoring well that produced a sample during this reporting period. The upgradient monitoring wells MW-4, MW-6, and MW-7R2 also produced samples.

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Section 1.0

Acronyms/Abbreviations

AL = Action Level
CCV = Continuing Calibration Verification
CL = Control Limit - Mean plus Two Standard Deviations
DNR = Iowa Department of Natural Resources
DO = Dissolved Oxygen
GWPS = Groundwater Protection Standard
GWQAP = Groundwater Quality Assessment Plan
LEL = Lower Explosive Limit
LCL = Lower Confidence Limit
LCS = Laboratory Control Sample
LN = Lognormal
M+/-2SD = Mean Plus/Minus Two Standard Deviations
MCL = EPA Maximum Contaminant Level
MDL = Method Detection Limit
N = Normal
NC = No Change
NM = Not Measured
ORP = Oxidation-Reduction Potential
PL = Prediction Limit
QA = Quality Assurance
QC = Quality Control
RL = Reporting Limit
SWS = DNR Statewide Standard for a Protected Groundwater Source
SSI = Statistically Significant Increase Above Background
SSL = Statistically Significant Level Above Groundwater Protection Standard
SSS = Site-Specific Standard (Site-Specific GWPS)
TSS = Total Suspended Solids
UCL = Upper Confidence Limit
VOC = Volatile Organic Compound

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Section 2.0
Site Background

2.1 Site Location

The Carter Lake C&D Landfill (Landfill) is located at the intersection of 13th Street and Locust Street in Carter Lake, Iowa. The legal description is Lots "A" and "N" in auditor's subdivision of Lot Thirteen (13), being located within the SW ¼ of the NW ¼ of Section 21, T75N, R44W, in Carter Lake, Pottawattamie County, Iowa; and the West 611.8 feet of Lot 14 in auditor's subdivision of Government Lot 3 of Section 21, T75N, R44W, Pottawattamie County, Iowa, and also a strip of ground 10 feet wide North and South and 611.8 feet along the East and West adjoining the above described tract on the North.

2.2 Facility

Prior land use information has not been obtained. However, the 1960 Iowa Department of Transportation aerial photograph providing coverage of the Landfill was reviewed for the *Preliminary Groundwater Assessment* dated April 8, 1998, prepared by Barker, Lemar & Associates (Doc #35285). The following is an excerpt from the report:

> *In the 1960 aerial photograph, the site appears to be covered with small vegetation. Trees appear to be present around the perimeter of the property and in the northwest corner. Objects typical of an auto salvage yard appear to be present to the west of the site. Trees and brush along with some small structures are present to the east of the site. Trees and brush surrounding a large open area are present to the south of the site. Trees and brush along with some small structures are present to the north of the site.*

The property was used as a C&D landfill from 1980 through 1989. The Landfill has since been covered and vegetated with grass and alfalfa. The Landfill property covers approximately 20 acres, of which approximately 7 acres were used as a landfill. The closure permit was issued on May 1, 1996.

2.3 Geology and Hydrogeology of the Site

The *Hydrogeologic Investigation Report,* dated July 26, 1995, prepared by Geotechnical Services Inc. (Doc #35231) provided the following geological description:

> *The site is situated in the flood plain between Carter Lake and the Missouri River. This area is characterized by alluvial bedding plains consisting of sandy and silty clays with sand seams.*
>
> *The near surface strata consists of fill; primarily consisting of silty sand, mixed with wood and brick pieces. Blow counts for the split spoon sampler indicated this strata to be well compacted. The fill extends to approximately 15 feet below grade. Alluvium consisting of silty clay was identified below the fill and was found to be saturated with groundwater and showed less consistency than the surface fill. The alluvium changed to fine to well graded sand at a depth of 20-25 feet below grade. Clay lenses were found to be interbedded within the sandy alluvium. The fine grained alluvial sand encountered at the site extended to depths in excess of 90 feet. Bedrock was not encountered in any of the soil borings performed at the site.*

The above-referenced *Hydrogeological Investigation Report* provided the following hydrogeologic description:

> *The near surface groundwater was found to be approximately 10-15 feet below grade. Well clusters were installed at the site with the well screens at 5-20 feet*

below grade, 45-55 feet below grade, and 75-85 feet below grade. Monitoring wells forming each individual well cluster exhibited the same static water levels: therefore, the surficial aquifer beneath the site appears to be extending to depths in excess of 90 feet below grade. These observations are consistent with the data obtained from the Geologic Survey of Omaha, Council Bluffs (1968).

The local groundwater flow direction at the site was found to be in a southeasterly direction near the surface and northeasterly at 50 feet below the groundwater table. The proximity of Carter Lake and the Missouri River appears to have influenced the groundwater flow direction at the site.

Slug tests were performed to determine the hydraulic conductivity of the water bearing strata beneath the site. Whereas, the near surface clayey fill, as well as the sandy alluvial aquifer, exhibited rapid groundwater recharge; distinct differences were observed in the rate of recharge from both of these water bearing units. The fine grained sandy aquifer failed to show any draw down when the groundwater was withdrawn from the monitoring well at a rate of 15 gallons per minute. Due to this extremely rapid recharge, slug test data could not be gathered from any of the deeper monitoring wells. The hydraulic conductivity for the monitoring wells screened partially in the near surface clays, was found to be in the range of 0.40 – 1.04 m/d.

The installation of monitoring wells at the site resulted in three well clusters located to the east, west, and south of the site. The vertical groundwater flow gradient was calculated by comparing the groundwater levels in the individual wells of each well cluster. The vertical groundwater flow gradient ranged from 0.019 to 0.055 ft/ft upwards and 0.052 ft/ft downwards.

Section 3.0
Figures Discussion

The following figures are attached.

3.1 Figure 1 - Approved Monitoring Network

The Landfill property and hydrologic monitoring system plan (HMSP) network is depicted in Figure 1. Figure 1 indicates the locations of each monitoring well and its respective monitoring program.

3.2 Figure 2 - Groundwater Contours

A groundwater contour map based on water levels measured during the October 2023 sampling event is included as Figure 2. The groundwater contours for the water table aquifer are presented in Figure 2. Monitoring well MW-8 was removed from the HMSP in permit amendment #6 dated June 9, 2017 (Doc #89659). Therefore, since there are only two monitoring wells remaining in deep flow aquifer monitoring, the deep flow aquifer contours are not drawn.

Review of the groundwater flow pattern indicates that the general flow direction of the water table aquifer is from the northwest to the east-southeast. It should be noted that historical groundwater flow directions have been variable, and the potentiometric surface is generally flat. Historical predominant flow directions can be found in the 2020 AWQR (Doc #99003).

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Section 4.0
QA/QC Summary

The quality assurance/quality control (QA/QC) program for the Landfill follows similar protocols as included in the HMSP. Data validation procedures were performed on analytical results for laboratory quality control samples and a quality assurance assessment of the data was conducted as the data were generated. The QA review procedure provided documentation of the accuracy and precision of the analytical data and confirmed that the analyses were sufficiently sensitive to detect constituents at levels below regulatory standards when technically feasibly with the laboratory method utilized and where such standards exist. SCS then conducted QA/QC data validation of the produced data, which included review of sample handling, analytical sensitivity, and blanks, accuracy, and precision. A summary of the laboratory QA/QC and data validation can be found in Appendices B-1, Laboratory Data, and B-2, Data Validation, respectively. The QA/QC review indicated that the data was acceptable.

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Section 5.0
Data Evaluation

Statistical evaluation in accordance with the requirements of 1994 IAC 567-103 and Permit Amendment #6 (Doc #83317) was conducted for the groundwater analytical data collected during the April and October 2023 sampling events. The statistical output for samples collected during the 2023 sampling events are located in Appendix D (2023 Statistical Output) of this report.

5.1 Data Evaluation

Groundwater monitoring for the Landfill consists of the collection of samples from monitoring wells along the perimeter of the Landfill. The water table upgradient monitoring well MW-7R2 is located along the west side of the Landfill. The deep flow upgradient monitoring wells MW-4 and MW-6 are located along the south and east sides of the Landfill. There are no downgradient monitoring points in the deep flow regime. Monitoring wells MW-3 and MW-5 did not produce samples during this reporting period, likely due to the extreme drought in the region.

Multiple constituents exceeded the upper control limits in monitoring well MW-1R during the 2023 reporting period as indicated in Tables 1, 6, and 7. Arsenic in monitoring wells MW-1R, MW-4, MW-6, and MW-7R2, cobalt in monitoring wells MW-1R, MW-6, and MW-7R2, and thallium in monitoring well MW-1R exceeded their respective groundwater protection standards (GWPSs) during this reporting period as indicated in Table 9. The thallium measured in monitoring well MW-1R during the October 2023 sampling event was the first quantified detection at the monitoring well and the second detection at the Landfill and may be influenced by the elevated total suspended solids (TSS) concentration measured during the October 2023 sampling event, which was the highest measured in the monitoring well in the period of record that dates to 2016.

As stated in the 2010 AWQR (Doc #62718), it does not appear that the Landfill is the source of the high arsenic concentrations based on the widespread occurrence of arsenic in both the upgradient and downgradient monitoring wells. Additionally, as discussed in Section 1.2 of the 2010 AWQR, reducing conditions in the monitored aquifer are likely contributing to or are the cause of the elevated arsenic concentrations.

It should also be noted that cobalt concentrations historically present in the upgradient monitoring wells are occasionally above the GWPS, which could indicate that cobalt concentrations are in part naturally occurring and not indicative of a release from the Landfill.

Time series plots of the recent and historical data can be found in the 2023 Statistical Output included in Appendix D.

5.2 Trending in Monitoring Wells

There were numerous statistically significant trends identified by Mann-Kendall analysis at 99% confidence (α=0.01) during this reporting period as summarized in the table below.

Statistically Significant Trends		
Monitoring Well	**Constituent**	**Trend**
MW-4	Ammonia	Increasing
	Barium	Increasing
	Dissolved Iron	Increasing

Statistically Significant Trends		
Monitoring Well	**Constituent**	**Trend**
MW-6	Chemical Oxygen Demand	Increasing
	Cobalt	Increasing
	pH	Decreasing
MW-7R2	Arsenic	Increasing
	Specific Conductance	Decreasing
	Total Organic Halogens	Increasing

The trend analysis output is included in the 2023 Statistical Report included in Appendix D.

Although not necessarily statistically significant, the Mann-Kendall statistics can provide an indication of general trending in the data. Trend indications for wells in the monitoring program are shown in the table below. Trends classified as decreasing or increasing exhibited a statistically significant trend with 80% confidence (α=0.20) using the most recent eight data points. Trends classified as stable did not exhibit a statistically significant trend with 80% confidence using the eight most recent data points. A summary of Mann-Kendall statistics by constituent in each monitoring point is included in Appendix E.

Trending in Monitoring Wells				
Monitoring Well	**Decreasing Trends**	**Stable Trends**	**Increasing Trends**	**Number of Constituents Analyzed**
MW-1R	0.00%	71.43%	28.57%	14
MW-3	0.00%	100.00%	0.00%	15
MW-4 (u)	8.33%	50.00%	41.67%	12
MW-5	6.25%	93.75%	0.00%	16
MW-6 (u)	7.69%	30.77%	61.54%	13
MW-7R2 (u)	14.29%	57.14%	28.57%	14
Site Wide	**5.95%**	**69.05%**	**25.00%**	**84**

(u) indicates an upgradient monitoring point.

Mann-Kendall trend analysis indicated that 75% of the monitoring well/constituent pairs were considered stable or decreasing during the 2023 annual statistical evaluation. The majority of the increasing trends were present in the upgradient monitoring well data sets.

Section 6.0
Recommendations

6.1 Site Impact on Groundwater

Approximately 75% of the groundwater parameters detected at the Landfill have stable or decreasing concentration trends as indicated by statistical trend analysis. The majority of the increasing concentration trends were present in the upgradient monitoring well data sets.

Previous evaluations have demonstrated that elevated arsenic and cobalt concentrations measured in the Landfill monitoring network are likely due to either industrial activity in the area and/or naturally occurring concentrations and are not the result of a release from the Landfill.

6.2 Proposed Monitoring

No changes to the monitoring program are recommended at this time.

6.3 Proposed Monitoring Well Changes

No proposed changes to the monitoring wells are recommended at this time.

Tables

Table 1
Monitoring Program Summary
2023 Annual Water Quality Report
Carter Lake C&D Landfill
Permit No. 78-SDP-02-80C

Monitoring Well	Formation[1]	Current Monitoring Program	Change for Next Sampling Event	Control Limit Exceedances	Total Number of Samples in Each Monitoring Program Since January 1, 2018		
					Routine	Supplemental	Remedial Action
MW-7R2	Gray clay with sand	Upgradient	None	Not applicable	10	-	-
MW-1R	Silty clay	Compliance	None	Chloride, Thallium	11	-	-
MW-3	Alluvium with sand	Compliance	None	None (not sampled)	8	-	-
MW-4	Sand with silt and clay seams	Upgradient	None	Not applicable	11	-	-
MW-5	Silty clay with fine sand	Compliance	None	None (not sampled)	8	-	-
MW-6	Clay with fine sand	Upgradient	None	Not applicable	11	-	-

Notes:
[1] Obtained from screened interval on boring logs.

Table 2
Monitoring Program Implementation Schedule
2023 Annual Water Quality Report
Carter Lake C&D Landfill
Permit No. 78-SDP-02-80C

Monitoring Well	Recent Sampling Dates and Constituents		Upcoming Sampling Dates and Constituents	
	April 2023	October 2023	April 2024	October 2024
MW-7R2	IAC 567-114.26(4)"e", Metals List, TSS	IAC 567-114.26(4)"e"&"f", Metals List, TSS	IAC 567-114.26(4)"e", Metals List, TSS	IAC 567-114.26(4)"e"&"f", Metals List, TSS
MW-1R	IAC 567-114.26(4)"e", Metals List, TSS	IAC 567-114.26(4)"e"&"f", Metals List, TSS	IAC 567-114.26(4)"e", Metals List, TSS	IAC 567-114.26(4)"e"&"f", Metals List, TSS
MW-3	No sample (insufficient water)	No sample (insufficient water)	IAC 567-114.26(4)"e", Metals List, TSS	IAC 567-114.26(4)"e"&"f", Metals List, TSS
MW-4	IAC 567-114.26(4)"e", Metals List, TSS	IAC 567-114.26(4)"e"&"f", Metals List, TSS	IAC 567-114.26(4)"e", Metals List, TSS	IAC 567-114.26(4)"e"&"f", Metals List, TSS
MW-5	No sample (insufficient water)	No sample (insufficient water)	IAC 567-114.26(4)"e", Metals List, TSS	IAC 567-114.26(4)"e"&"f", Metals List, TSS
MW-6	IAC 567-114.26(4)"e", Metals List, TSS	IAC 567-114.26(4)"e"&"f", Metals List, TSS	IAC 567-114.26(4)"e", Metals List, TSS	IAC 567-114.26(4)"e"&"f", Metals List, TSS

Notes:

TSS: Total Suspended Solids.

Metals List: antimony, arsenic, barium, beryllium, cadmium, cobalt, copper, lead, nickel, silver, thallium, vanadium, and zinc.

Table 3
Monitoring Well Maintenance and Performance Re-Evaluation Schedule
2023 Annual Water Quality Report
Carter Lake C&D Landfill
Permit No. 78-SDP-02-80C

Compliance with:	2021	2022	2023	2024	2025
567 IAC 114.21(2)"a" high and low water levels	Completed	Completed	Included	Scheduled	Scheduled
567 IAC 114.21(2)"b" changes in the hydrologic setting and flow paths	Completed	Completed	Included	Scheduled	Scheduled
567 IAC 114.21(2)"c" well depths	Completed	Completed	Included	Scheduled	Scheduled
567 IAC 114.21(2)"d" in-situ permeability tests*		Completed		Scheduled	

Comments:

* = In accordance with Permit Amendment #7 (Doc #104256), biennial evaluations of well recharge rates measured from groundwater monitoring events will be conducted in lieu of 567 IAC 114.21(2)"d" in-situ permeability tests.

Table 4
Monitoring Well Performance and Maintenance Summary
2023 Annual Water Quality Report
Carter Lake C&D Landfill
Permit No. 78-SDP-02-80C

Well	Top of Casing	Top of Screen	Total Depth		Date of Measurements 4/19/2023	Date of Measurements 10/26/2023	Maximum Depth Discrepancy (ft)
MW-1R	985.4	969.0	22.9	Groundwater Level (ft)	19.55	17.21	-0.2
				Groundwater Elevation (Ft MSL)	965.82	968.16	
				Measured Well Depth (ft)	23.0	23.1	
				Submerged screen	N	N	
MW-3	986.3	979.4	23.5	Groundwater Level (ft)	22.95	22.21	-0.3
				Groundwater Elevation (Ft MSL)	963.35	964.09	
				Measured Well Depth (ft)	23.8	23.5	
				Submerged screen	N	N	
MW-4	985.7	935.6	58.4	Groundwater Level (ft)	22.20	19.87	-0.4
				Groundwater Elevation (Ft MSL)	963.46	965.79	
				Measured Well Depth (ft)	58.5	58.8	
				Submerged screen	Y	Y	
MW-5	984.6	977.9	23.3	Groundwater Level (ft)	20.68	20.78	0.4
				Groundwater Elevation (Ft MSL)	963.95	963.85	
				Measured Well Depth (ft)	23.0	22.9	
				Submerged screen	N	N	
MW-6	984.9	938.1	56.6	Groundwater Level (ft)	20.59	18.00	0.8
				Groundwater Elevation (Ft MSL)	964.28	966.87	
				Measured Well Depth (ft)	55.8	55.9	
				Submerged screen	Y	Y	
MW-7R2	982.7	970.6	21.0	Groundwater Level (ft)	16.50	14.60	0.1
				Groundwater Elevation (Ft MSL)	966.18	968.08	
				Measured Well Depth (ft)	21.0	20.9	
				Submerged screen	N	N	

Comments:

(1) Measured well depths were within 1.0 foot of the installed depths, indicating siltation is not affecting the ability of the wells to produce samples.

Table 5
Background and GWPS Summary
2023 Annual Water Quality Report
Carter Lake C&D Landfill
Permit No. 78-SDP-02-80C

Interwell Background/GWPS (MW-7R2)

Constituent	Units	Samples	Detections	Background Level	Statistical Test	Action Level	Source
Inorganics							
Antimony (Sb)	mg/L	15	6	0.003244	M+/-2SD	0.006	MCL
Arsenic (As)	mg/L	14	14	0.1572	M+/-2SD	0.01	MCL
Barium (Ba)	mg/L	15	15	1.209	M+/-2SD	2.0	MCL
Beryllium (Be)	mg/L	15	0	< 0.004	DQR	0.004	MCL
Cadmium (Cd)	mg/L	15	3	0.0003347	M+/-2SD	0.005	MCL
Cobalt (Co)	mg/L	15	14	0.007141	M+/-2SD	0.0021	SWS
Copper (Cu)	mg/L	15	3	0.008832	M+/-2SD	1.3	MCL
Lead (Pb)	mg/L	15	11	0.01119	M+/-2SD	0.015	MCL
Nickel (Ni)	mg/L	15	13	0.01908	M+/-2SD	0.1	SWS
Silver (Ag)	mg/L	15	0	< 0.02	DQR	0.1	SWS
Thallium (Tl)	mg/L	15	0	< 0.004	DQR	0.002	MCL
Vanadium (V)	mg/L	15	13	0.0163	M+/-2SD	0.035	SWS
Zinc (Zn)	mg/L	15	12	0.1876	M+/-2SD	2.0	SWS
Other							
Ammonia as N	mg/L	33	31	7.654	M+/-2SD	30	MCL
Chemical Oxygen Demand	mg/L	33	33	187.2	M+/-2SD	None	None
Chloride	mg/L	33	33	131.9	M+/-2SD	None	None
Iron, Dissolved	mg/L	33	33	83.45	M+/-2SD	None	None
pH	S.U.	33	33	7.711	M+/-2SD	None	None
Specific Conductance	umos/cm	32	32	3828	M+/-2SD	None	None
Total Organic Halogens	mg/L	22	21	0.1777	M+/-2SD	None	None
Total Phenols	mg/L	21	4	0.1259	M+/-2SD	None	None

Notes:

1) Background levels based on calculated control limits or reporting limit, as applicable.

Acronyms/Abbreviations:

RL = Reporting Limit
GWPS = Groundwater Protection Standard
SSS = Site-Specific GWPS
SWS = Statewide Standard
M+/-2SD = Mean Plus/Minus Two Standard Deviations
MCL = EPA Maximum Contaminant Level

Comments:

1) **Water quality results and effectiveness of the statistical data evaluation criteria**: Statistical evaluations consist of control limits.
2) **Changes to the previous statistical method during reporting period:** There were no changes to the statistical method during the 2023 reporting period.

Table 6
Summary of Well/Detected Constituent Pairs With No Immediately Preceding Control Limit Exceedances
2023 Annual Water Quality Report
Carter Lake C&D Landfill
Permit No. 78-SDP-02-80C

Well	Constituent	Units	Most Recent Result	Background Standard
MW-1R	Thallium	mg/L	0.00567	<0.004

Notes:

(1) A new control limit exceedance is defined as a well/constituent pair having a control limit exceedance during the current reporting period and not during the immediately preceding reporting period.

Comments:

1) **Problems with the current HMSP network:** None.
2) **Schedule to implement remedies:** Not applicable.
3) **Alternative constituent or sample frequency changes:** None.
4) **Significant changes to control limits:** None.

Table 7
Summary Table of Ongoing and Newly Identified Control Limit Exceedances
2023 Annual Water Quality Report
Carter Lake C&D Landfill
Permit No. 78-SDP-02-80C

Well	Constituent	Units	Most Recent Result	Background Standard	Action Level/ Statewide Standard
MW-1R	Chloride	mg/L	252	131.9	None
	Thallium	mg/L	0.00567	< 0.004	0.002

Notes:

(1) Ongoing control limit exceedance is defined as a well/constituent pair having a control limit exceedance during the current reporting period and during the immediately preceding reporting period.

Shaded indicates a newly identified SSI, as defined under Table 6.

Comments:

1) **Problems with the current HMSP network:** Deep aquifer monitoring points MW-4 and MW-6 are upgradient and do not have a downgradient monitoring point.
2) **Proposed remedies:** None.
3) **Alternative constituent or sample frequency changes:** None.
4) **Plume delineation strategies:** Not Applicable.
5) **Property owner notifications:** Pursuant to DNR guidance, if MCLs are exceeded at any monitoring point, information is to be provided on potential receptors. As shown above, action levels were exceeded in monitoring well MW-1R. According to parcel information obtained from the Pottawattamie County Geographical Information System (GIS) website (http://gis.pottcounty.com/silverlight) and the Douglas County GIS website (http://www.dcgis.org/dogis), the adjacent property to the east is a vacant parking lot and to the south and southeast is a motel. No residential properties were identified downgradient of the site. In addition, a DNR well search performed in October 2018 indicated there are no wells within 1,000 feet of the site. Potential receptors downgradient from the Landfill include Carter Lake and the Missouri River.

Table 8
Summary of Groundwater Chemistry
2023 Annual Water Quality Report
Carter Lake C&D Landfill
Permit No. 78-SDP-02-80C

The Summary of Groundwater Chemistry is located in Appendix C.

Table 9
Historical Control Limit and Action Level Exceedances
2023 Annual Water Quality Report
Carter Lake C&D Landfill
Permit No. 78-SDP-02-80C

Key

Control Limit Exceedance

MCL/Action Level Exceedance

Well	Constituent	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023	Fall 2023
MW-1R	Arsenic								
	Chloride								
	Cobalt								
	Nickel								
	Thallium								
	pH								
	Total Organic Halogens								
MW-3	Cobalt					NS		NS	NS
	Nickel					NS		NS	NS
MW-4 (u)	Arsenic								
MW-5	Arsenic					NS		NS	NS
	Cadmium					NS		NS	NS
	Copper					NS		NS	NS
	Zinc					NS		NS	NS
MW-6 (u)	Arsenic								
MW-7R2 (u)	Arsenic						NS		
	Cobalt						NS		
	Chloride						NS		

Comments: (u) indicates upgradient monitoring point.

NS: Not Sampled. The drought in 2022 and 2023 resulted in insufficient water for sampling in multiple wells.

Table 10
Groundwater Quality Assessment Plan Trend Analysis
2023 Annual Water Quality Report
Carter Lake C&D Landfill
Permit No. 78-SDP-02-80C

Well	Current SSL	Trend
None		

Notes:

There is no Groundwater Quality Assessment Plan required for this facility.

Figures

Monitoring Well	Monitoring Program
Water Table	
MW-7R2	Upgradient
MW-1R	Compliance
MW-3	Compliance
MW-5	Compliance
Deep Flow	
MW-4	Upgradient
MW-6	Upgradient

SCS ENGINEERS
environmental consultants and contractors

Approved Monitoring Network

Legend

- Deep Flow HMSP Monitoring Well
- Water Table HMSP Monitoring Well
- Monitoring Well
- Approximate Property Boundary

Anderson Excavating Carter Lake Landfill
Carter Lake, Iowa
Project No: 27223229.00
Drawing Date: November 2023

N
W
E
S

0 65 130 260
Feet

Figure 1

Groundwater Contours

Figure 2

SCS ENGINEERS
environmental consultants and contractors

Legend

- Approximate Groundwater Contours Based on Field Measurments Taken October 26, 2023
- Monitoring Well
- Approximate Property Boundary

Anderson Excavating Carter Lake Landfill
Carter Lake, Iowa
Project No: 27223229.00
Drawing Date: November 2023

N
W
E
S

0 65 130 260 Feet

Appendix A

Field Sampling Forms

FORM FOR GROUNDWATER SAMPLING

Project:	**Anderson Excavating Carter Lake C&D Landfill**		
Monitoring Well/Piezometer ID:	**MW-1R**	Date:	**4/19/2023**
Gradient:	Down	Sampler:	Scott Stoller

A. MW/PIEZOMETER CONDITIONS		
Well/Piezometer Capped?	Yes	
Litter/Standing Water?	No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	23.0
Initial Static Water Level (feet):	19.55
Initial Groundwater Elevation (ft-amsl):	965.82
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	**Temperature (°C) 10%**	Dissolved Oxygen (mg/L)	**Specific Conductivity (µS/cm) +/- 10%**	**pH (S.U.) +/- 0.1**	ORP (mV)	Turbidity (FNU)	
9:31 AM	Purging start time.						
9:34 AM	15.3	0.4	2759.1	6.39	-151.3	NM	
9:37 AM	15.2	0.2	2756.6	6.41	-155.1	NM	
9:40 AM	15.0	0.1	2754.6	6.43	-156.9	NM	
9:43 AM	15.2	0.1	2751.6	6.45	-157.5	NM	
Turbidity was not available due to a probe malfunction.							
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.8
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	150.00

D. WELL MAINTENANCE

Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Well went dry while filling bottles. waited 1 hour for recharge and finished.

FORM FOR GROUNDWATER SAMPLING

Project:	**Anderson Excavating Carter Lake C&D Landfill**		
Monitoring Well/Piezometer ID:	**MW-3**	Date:	**4/19/2023**
Gradient:	Down	Sampler:	Scott Stoller

A. MW/PIEZOMETER CONDITIONS		
Well/Piezometer Capped?	Yes	
Litter/Standing Water?	No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	23.8
Initial Static Water Level (feet):	22.95
Initial Groundwater Elevation (ft-amsl):	963.35
Equipment Used:	

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	**Temperature (°C) 10%**	Dissolved Oxygen (mg/L)	**Specific Conductivity (µS/cm) +/- 10%**	**pH (S.U.) +/- 0.1**	ORP (mV)	Turbidity (FNU)	
	Purging start time.						
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	0.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	
Average Purge Rate (mL/min):	0.00

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Tried lowering tubing to reach water @ 22.95. unable to purge water. No sample collected.

FORM FOR GROUNDWATER SAMPLING

Project:	**Anderson Excavating Carter Lake C&D Landfill**		
Monitoring Well/Piezometer ID:	**MW-4**	Date:	**4/19/2023**
Gradient:	Up	Sampler:	Scott Stoller

A. MW/PIEZOMETER CONDITIONS		
Well/Piezometer Capped?	Yes	
Litter/Standing Water?	No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	58.5
Initial Static Water Level (feet):	22.20
Initial Groundwater Elevation (ft-amsl):	963.46
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	**Temperature (°C) 10%**	Dissolved Oxygen (mg/L)	**Specific Conductivity (µS/cm) +/- 10%**	**pH (S.U.) +/- 0.1**	ORP (mV)	Turbidity (FNU)	
10:11 AM	Purging start time.						
10:14 AM	18.4	4.0	1681.2	7.22	-6.7	NM	
10:17 AM	19.1	5.2	1682.0	7.31	-6.5	NM	
10:20 AM	16.5	2.8	1689.4	7.09	17.8	NM	
10:23 AM	16.1	1.5	1686.0	7.05	28.6	NM	
10:26 AM	16.1	0.8	1809.2	6.88	34.3	NM	
10:29 AM	16.3	0.4	2055.3	6.84	-129.5	NM	
10:32 AM	16.1	0.2	2383.0	6.84	-164.8	NM	
10:35 AM	16.1	0.1	2468.5	6.84	-177.4	NM	
Turbidity was not available due to a probe malfunction.							
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	3.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	24:00
Average Purge Rate (mL/min):	125.00

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	

FORM FOR GROUNDWATER SAMPLING

Project:	**Anderson Excavating Carter Lake C&D Landfill**		
Monitoring Well/Piezometer ID:	**MW-5**	Date:	**4/19/2023**
Gradient:	Down	Sampler:	Scott Stoller

A. MW/PIEZOMETER CONDITIONS		
Well/Piezometer Capped?	Yes	
Litter/Standing Water?	No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	23.0
Initial Static Water Level (feet):	20.68
Initial Groundwater Elevation (ft-amsl):	963.92
Equipment Used:	

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	**Temperature (°C) 10%**	Dissolved Oxygen (mg/L)	**Specific Conductivity (µS/cm) +/- 10%**	**pH (S.U.) +/- 0.1**	ORP (mV)	Turbidity (FNU)	
	Purging start time.						
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	0.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	
Average Purge Rate (mL/min):	0.00

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Well went dry before any stabilization parameters could be recorded. No sample collected.

FORM FOR GROUNDWATER SAMPLING

Project:	**Anderson Excavating Carter Lake C&D Landfill**		
Monitoring Well/Piezometer ID:	**MW-6**	Date:	**4/19/2023**
Gradient:	Up	Sampler:	Scott Stoller

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	55.8
Initial Static Water Level (feet):	20.54
Initial Groundwater Elevation (ft-amsl):	964.33
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	**Temperature (°C) 10%**	Dissolved Oxygen (mg/L)	**Specific Conductivity (µS/cm) +/- 10%**	**pH (S.U.) +/- 0.1**	ORP (mV)	Turbidity (FNU)
11:18 AM	Purging start time.					
11:21 AM	15.9	1.10	1694.4	7.14	-86.9	NM
11:24 AM	15.8	0.23	1692.7	7.09	-46.8	NM
11:27 AM	15.7	0.12	1797.5	7.02	-20.2	NM
11:30 AM	15.7	0.05	2059.3	6.93	-145.4	NM
11:33 AM	15.7	0.05	2296.7	6.93	-185.3	NM
11:36 AM	15.7	0.02	2402.1	6.91	-195.8	NM
11:39 AM	15.6	NA	2422.6	6.91	-198.2	NM

NA - Not available. The dissolved oxygen recording for 11:39 was an anomalous negative number.

Turbidity was not available due to a probe malfunction.

Parameters stabilized, sample collected.

Quantity of Water Removed from Well (liters):	3.1
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	21:00
Average Purge Rate (mL/min):	147.62

D. WELL MAINTENANCE

Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	

FORM FOR GROUNDWATER SAMPLING

Project:	**Anderson Excavating Carter Lake C&D Landfill**		
Monitoring Well/Piezometer ID:	**MW-7R2**	Date:	**4/19/2023**
Gradient:	Up	Sampler:	Scott Stoller

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes	
Litter/Standing Water?	No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	21.0
Initial Static Water Level (feet):	16.50
Initial Groundwater Elevation (ft-amsl):	966.18
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	**Temperature (°C) 10%**	Dissolved Oxygen (mg/L)	**Specific Conductivity (µS/cm) +/- 10%**	**pH (S.U.) +/- 0.1**	ORP (mV)	Turbidity (FNU)	
12:34 PM	Purging start time.						
12:37 PM	16.6	0.6	2121.7	6.60	-160.6	NM	
12:40 PM	16.8	0.2	2124.8	6.59	-165.6	NM	
12:43 PM	16.7	0.1	2126.0	6.59	-168.0	NM	
12:46 PM	16.6	0.1	2133.6	6.59	-169.6	NM	
Turbidity was not available due to a probe malfunction.							
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.8
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	150.00

D. WELL MAINTENANCE

Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	

FORM FOR GROUNDWATER SAMPLING

Project:	**Anderson Excavating Carter Lake C&D Landfill**		
Monitoring Well/Piezometer ID:	**MW-1R**	Date:	**10/26/2023**
Gradient:	Down	Sampler:	Konner Roth

A. MW/PIEZOMETER CONDITIONS		
Well/Piezometer Capped?	Yes	
Litter/Standing Water?	No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	23.1
Initial Static Water Level (feet):	17.21
Initial Groundwater Elevation (ft-amsl):	968.16
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	**Temperature (°C) 10%**	Dissolved Oxygen (mg/L)	**Specific Conductivity (µS/cm) +/- 10%**	**pH (S.U.) +/- 0.1**	ORP (mV)	Turbidity (FNU)	
10:43 AM	Purging start time.						
10:46 AM	16.9	0.9	2296.2	6.25	-114.6	NM	
10:49 AM	16.8	0.2	2311.1	6.37	-126.7	NM	
10:52 AM	16.9	0.1	2313.1	6.40	-130.7	NM	
10:55 AM	17.0	0.1	2310.3	6.41	-132.5	NM	
Turbidity was not available due to a probe malfunction.							
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	166.67

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	

FORM FOR GROUNDWATER SAMPLING

Project: Carter Lake 27223229.00
Monitoring Well/Piezometer ID: MW-3
Date: 10/26/23
Gradient (circle one): Up / Down / Supp / Compliance
Sampler: Konner Roth

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped? (circle one): (Yes) No If No, explain:

Litter/Standing Water? (circle one): Yes (No) If Yes, explain:

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet): 22.21
Peri Tubing Used (feet):

Initial Static Water Level (feet): 23.49
Sub Tubing Used (feet):

Equipment Used (check one): □ Dedicated Peristaltic Tubing □ Dedicated Submersible Pump*
□ Dedicated Bailer □ Other: *Controller Type: G / Y / BR

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	**Temperature (°C) +/- 10%**	Dissolved Oxygen (mg/L)	**Conductivity (µS/cm) +/- 10%**	**pH (S.U.) +/- 0.1**	ORP (mV)	Turbidity (FNU)	Static Water Level (feet)
	Purging start time						
	Parameters stabilized for 3 consective readings, YSI stopped recording, sample collected						
	←Final SWL Record Time	Finished collecting sample	**Final SWL after sampling →**				

Quantity of Water Removed from Well (circle units: liters / gallons):
Was well pumped/bailed dry?
Total Amount of Time Purged (minutes)
Color Describe:
Odor Describe:

D. WELL MAINTENANCE

Does the monitoring well/piezometer require any future maintenance? Yes / No
If yes, explain:

Is the monitoring well/piezometer correctly labled with a physical tag visible on the outside of the protective well casing? Yes / No

Additional Comments/Sampling Issues:

FORM FOR GROUNDWATER SAMPLING

Project:	**Anderson Excavating Carter Lake C&D Landfill**		
Monitoring Well/Piezometer ID:	**MW-4**	Date:	**10/26/2023**
Gradient:	Up	Sampler:	Konner Roth

A. MW/PIEZOMETER CONDITIONS		
Well/Piezometer Capped?	Yes	
Litter/Standing Water?	No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	58.8
Initial Static Water Level (feet):	19.87
Initial Groundwater Elevation (ft-amsl):	965.79
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	**Temperature (°C) 10%**	Dissolved Oxygen (mg/L)	**Specific Conductivity (µS/cm) +/- 10%**	**pH (S.U.) +/- 0.1**	ORP (mV)	Turbidity (FNU)	
12:09 PM	Purging start time.						
12:12 PM	16.6	0.8	2090.4	6.82	-100.9	NM	
12:15 PM	16.5	0.3	2129.2	6.81	-109.8	NM	
12:18 PM	16.5	0.1	2149.3	6.82	-116.6	NM	
12:21 PM	16.4	0.1	2158.0	6.82	-120.9	NM	
Turbidity was not available due to a probe malfunction.							
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	166.67

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	

FORM FOR GROUNDWATER SAMPLING

Project: Carter Lake 27223229.00
Monitoring Well/Piezometer ID: MW-5 Date: 10/26/23
Gradient (circle one): Up / Down / Supp / Compliance Sampler: Konner Roth

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped? (circle one): Yes No If No, explain:

Litter/Standing Water? (circle one): Yes No If Yes, explain:

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet): 22.93 Peri Tubing Used (feet):

Initial Static Water Level (feet): ~~22.93~~ 20.78 Sub Tubing Used (feet):

Equipment Used (check one): □ Dedicated Peristaltic Tubing □ Dedicated Submersible Pump*
□ Dedicated Bailer □ Other: *Controller Type: G / Y / BR

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	**Temperature (°C) +/- 10%**	Dissolved Oxygen (mg/L)	**Conductivity (µS/cm) +/- 10%**	**pH (S.U.) +/- 0.1**	ORP (mV)	Turbidity (FNU)	Static Water Level (feet)
Purging start time							
Parameters stabilized for 3 consective readings, YSI stopped recording, sample collected							
←Final SWL Record Time	Finished collecting sample			**Final SWL after sampling →**			

Quantity of Water Removed from Well (circle units: liters / gallons):
Was well pumped/bailed dry?
Total Amount of Time Purged (minutes)

Color Describe:
Odor Describe:

D. WELL MAINTENANCE

Does the monitoring well/piezometer require any future maintenance? Yes / No
If yes, explain:

Is the monitoring well/piezometer correctly labled with a physical tag visible on the outside of the protective well casing? Yes / No

Additional Comments/Sampling Issues:

FORM FOR GROUNDWATER SAMPLING

Project:	**Anderson Excavating Carter Lake C&D Landfill**		
Monitoring Well/Piezometer ID:	**MW-6**	Date:	**10/26/2023**
Gradient:	Up	Sampler:	Konner Roth

A. MW/PIEZOMETER CONDITIONS		
Well/Piezometer Capped?	Yes	
Litter/Standing Water?	No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	55.9
Initial Static Water Level (feet):	18.00
Initial Groundwater Elevation (ft-amsl):	966.87
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	**Temperature (°C) 10%**	Dissolved Oxygen (mg/L)	**Specific Conductivity (µS/cm) +/- 10%**	**pH (S.U.) +/- 0.1**	ORP (mV)	Turbidity (FNU)	
1:03 PM	Purging start time.						
1:06 PM	16.3	0.82	2017.8	6.91	-138.5	NM	
1:09 PM	16.0	0.21	2009.4	6.90	-145.7	NM	
1:12 PM	15.7	0.08	2010.5	6.90	-149.8	NM	
1:15 PM	15.7	0.03	2011.6	6.89	-151.5	NM	
Turbidity was not available due to a probe malfunction.							
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.9
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	158.33

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	

FORM FOR GROUNDWATER SAMPLING

Project:	**Anderson Excavating Carter Lake C&D Landfill**		
Monitoring Well/Piezometer ID:	**MW-7R2**	Date:	**10/26/2023**
Gradient:	Up	Sampler:	Konner Roth

A. MW/PIEZOMETER CONDITIONS		
Well/Piezometer Capped?	Yes	
Litter/Standing Water?	No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	20.9
Initial Static Water Level (feet):	14.60
Initial Groundwater Elevation (ft-amsl):	968.08
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	**Temperature (°C) 10%**	Dissolved Oxygen (mg/L)	**Specific Conductivity (µS/cm) +/- 10%**	**pH (S.U.) +/- 0.1**	ORP (mV)	Turbidity (FNU)	
11:16 AM	Purging start time.						
11:19 AM	17.2	0.50	1946.7	6.59	-128.9	NM	
11:22 AM	17.2	0.13	1944.5	6.59	-138.9	NM	
11:25 AM	17.1	0.05	1944.5	6.59	-143.3	NM	
11:28 AM	17.2	0.01	1944.3	6.59	-145.8	NM	
Turbidity was not available due to a probe malfunction.							
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	166.67

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	

Appendix B-1

Laboratory Analytical Data Sheets

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Madson
SCS Engineers
1690 All State Court, Suite 100
West Des Moines, Iowa 50265

Generated 5/5/2023 3:22:08 PM

JOB DESCRIPTION

Anderson Excavating Carter Lake C&D Landfill (1st
SDG NUMBER 27223229

JOB NUMBER

310-254024-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization

Generated
5/5/2023 3:22:08 PM

Authorized for release by
Meredith Liechti, Service Center Manager
meredith.liechti@et.eurofinsus.com
(319)277-2401

Table of Contents

Job ID: 310-254024-1

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative
310-254024-1

Receipt
The samples were received on 4/20/2023 4:00 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.1°C

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020B: The reference method requires samples to be preserved to a pH of <2. The following samples were received with insufficient preservation at a pH of >2: MW-4 (310-254024-2), MW-6 (310-254024-3) and MW-7R2 (310-254024-4). The sample(s) was preserved to the appropriate pH in the laboratory.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: SCS Engineers
Project/Site: Anderson Excavating Carter Lake C&D Landfill
(1st

Job ID: 310-254024-1
SDG: 27223229

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-254024-1	MW-1R	Ground Water	04/19/23 09:43	04/20/23 16:00
310-254024-2	MW-4	Ground Water	04/19/23 10:35	04/20/23 16:00
310-254024-3	MW-6	Ground Water	04/19/23 11:39	04/20/23 16:00
310-254024-4	MW-7R2	Ground Water	04/19/23 12:46	04/20/23 16:00
310-254024-5	MW-D	Ground Water	04/19/23 09:43	04/20/23 16:00

Detection Summary

Client: SCS Engineers
Project/Site: Anderson Excavating Carter Lake C&D Landfill (1st

Job ID: 310-254024-1
SDG: 27223229

Client Sample ID: MW-1R — Lab Sample ID: 310-254024-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	345		10.0	4.50	mg/L	10		9056A	Total/NA
Iron	55.9		0.500	0.0930	mg/L	1		6010D	Dissolved
Arsenic	0.0711		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0810		0.00200	0.000640	mg/L	1		6020B	Total/NA
Cadmium	0.000179	J	0.000200	0.000100	mg/L	1		6020B	Total/NA
Cobalt	0.00101		0.000500	0.000170	mg/L	1		6020B	Total/NA
Lead	0.000490	J	0.000500	0.000240	mg/L	1		6020B	Total/NA
Nickel	0.00436	J	0.00500	0.00190	mg/L	1		6020B	Total/NA
Thallium	0.000878	J	0.00100	0.000260	mg/L	1		6020B	Total/NA
Ammonia	1.63	F1	0.200	0.100	mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	44.1		5.00	4.80	mg/L	1		5220D LL	Total/NA
Total Suspended Solids	86.7		5.00	1.70	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-4 — Lab Sample ID: 310-254024-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	156		10.0	4.50	mg/L	10		9056A	Total/NA
Iron	35.9		0.500	0.0930	mg/L	1		6010D	Dissolved
Arsenic	0.0464		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.211		0.00200	0.000640	mg/L	1		6020B	Total/NA
Cobalt	0.000396	J	0.000500	0.000170	mg/L	1		6020B	Total/NA
Thallium	0.00112		0.00100	0.000260	mg/L	1		6020B	Total/NA
Ammonia	2.49		0.200	0.100	mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	28.6		5.00	4.80	mg/L	1		5220D LL	Total/NA
Total Suspended Solids	77.0		15.0	5.10	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-6 — Lab Sample ID: 310-254024-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	122		10.0	4.50	mg/L	10		9056A	Total/NA
Iron	36.3		0.500	0.0930	mg/L	1		6010D	Dissolved
Arsenic	0.0690		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	2.15		0.00800	0.00256	mg/L	4		6020B	Total/NA
Cobalt	0.00223		0.000500	0.000170	mg/L	1		6020B	Total/NA
Ammonia	6.57		0.200	0.100	mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	126		5.00	4.80	mg/L	1		5220D LL	Total/NA
Total Suspended Solids	80.7		5.00	1.70	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-7R2 — Lab Sample ID: 310-254024-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	64.0		10.0	4.50	mg/L	10		9056A	Total/NA
Iron	55.2		0.500	0.0930	mg/L	1		6010D	Dissolved
Arsenic	0.110		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.721		0.00200	0.000640	mg/L	1		6020B	Total/NA
Cobalt	0.00166		0.000500	0.000170	mg/L	1		6020B	Total/NA
Lead	0.00170		0.000500	0.000240	mg/L	1		6020B	Total/NA
Nickel	0.00519		0.00500	0.00190	mg/L	1		6020B	Total/NA
Vanadium	0.00165	J	0.00500	0.00110	mg/L	1		6020B	Total/NA
Zinc	0.0257		0.0200	0.00640	mg/L	1		6020B	Total/NA
Ammonia	3.93		0.200	0.100	mg/L	1		350.1	Total/NA

This Detection Summary does not include radiochemical test results.

Client: SCS Engineers
Project/Site: Anderson Excavating Carter Lake C&D Landfill (1st

Job ID: 310-254024-1
SDG: 27223229

Client Sample ID: MW-7R2 (Continued)

Lab Sample ID: 310-254024-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chemical Oxygen Demand	12.4		5.00	4.80	mg/L	1		5220D LL	Total/NA
Total Suspended Solids	117		15.0	5.10	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-D

Lab Sample ID: 310-254024-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	340		10.0	4.50	mg/L	10		9056A	Total/NA
Iron	58.3		0.500	0.0930	mg/L	1		6010D	Dissolved
Arsenic	0.0744		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0859		0.00200	0.000640	mg/L	1		6020B	Total/NA
Cobalt	0.00317		0.000500	0.000170	mg/L	1		6020B	Total/NA
Lead	0.000338	J	0.000500	0.000240	mg/L	1		6020B	Total/NA
Nickel	0.00813		0.00500	0.00190	mg/L	1		6020B	Total/NA
Ammonia	1.70		0.200	0.100	mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	39.4		5.00	4.80	mg/L	1		5220D LL	Total/NA
Total Suspended Solids	79.0		15.0	5.10	mg/L	1		I-3765-85	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: SCS Engineers
Project/Site: Anderson Excavating Carter Lake C&D Landfill (1st

Job ID: 310-254024-1
SDG: 27223229

Client Sample ID: MW-1R

Date Collected: 04/19/23 09:43
Date Received: 04/20/23 16:00

Lab Sample ID: 310-254024-1

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**345**		10.0	4.50	mg/L			04/26/23 20:52	10

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**55.9**		0.500	0.0930	mg/L		05/04/23 08:45	05/04/23 19:26	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		04/24/23 08:25	05/01/23 20:50	1
Arsenic	**0.0711**		0.00200	0.000530	mg/L		04/24/23 08:25	05/01/23 20:50	1
Barium	**0.0810**		0.00200	0.000640	mg/L		04/24/23 08:25	05/01/23 20:50	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		04/24/23 08:25	05/01/23 20:50	1
Cadmium	**0.000179**	**J**	0.000200	0.000100	mg/L		04/24/23 08:25	05/01/23 20:50	1
Cobalt	**0.00101**		0.000500	0.000170	mg/L		04/24/23 08:25	05/01/23 20:50	1
Copper	<0.00500		0.00500	0.00180	mg/L		04/24/23 08:25	05/01/23 20:50	1
Lead	**0.000490**	**J**	0.000500	0.000240	mg/L		04/24/23 08:25	05/01/23 20:50	1
Nickel	**0.00436**	**J**	0.00500	0.00190	mg/L		04/24/23 08:25	05/01/23 20:50	1
Silver	<0.00100		0.00100	0.000500	mg/L		04/24/23 08:25	05/01/23 20:50	1
Thallium	**0.000878**	**J**	0.00100	0.000260	mg/L		04/24/23 08:25	05/01/23 20:50	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		04/24/23 08:25	05/01/23 20:50	1
Zinc	<0.0200		0.0200	0.00640	mg/L		04/24/23 08:25	05/01/23 20:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	**1.63**	**F1**	0.200	0.100	mg/L			04/26/23 19:12	1
Chemical Oxygen Demand (SM 5220D LL)	**44.1**		5.00	4.80	mg/L			04/26/23 08:32	1
Total Suspended Solids (USGS I-3765-85)	**86.7**		5.00	1.70	mg/L			04/21/23 14:06	1

Client Sample Results

Client: SCS Engineers
Project/Site: Anderson Excavating Carter Lake C&D Landfill (1st

Job ID: 310-254024-1
SDG: 27223229

Client Sample ID: MW-4

Date Collected: 04/19/23 10:35
Date Received: 04/20/23 16:00

Lab Sample ID: 310-254024-2

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**156**		10.0	4.50	mg/L			04/26/23 21:07	10

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**35.9**		0.500	0.0930	mg/L		04/24/23 08:25	05/04/23 15:54	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		04/24/23 08:25	05/01/23 21:19	1
Arsenic	**0.0464**		0.00200	0.000530	mg/L		04/24/23 08:25	05/01/23 21:19	1
Barium	**0.211**		0.00200	0.000640	mg/L		04/24/23 08:25	05/01/23 21:19	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		04/24/23 08:25	05/01/23 21:19	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/24/23 08:25	05/01/23 21:19	1
Cobalt	**0.000396**	**J**	0.000500	0.000170	mg/L		04/24/23 08:25	05/01/23 21:19	1
Copper	<0.00500		0.00500	0.00180	mg/L		04/24/23 08:25	05/01/23 21:19	1
Lead	<0.000500		0.000500	0.000240	mg/L		04/24/23 08:25	05/01/23 21:19	1
Nickel	<0.00500		0.00500	0.00190	mg/L		04/24/23 08:25	05/01/23 21:19	1
Silver	<0.00100		0.00100	0.000500	mg/L		04/24/23 08:25	05/01/23 21:19	1
Thallium	**0.00112**		0.00100	0.000260	mg/L		04/24/23 08:25	05/01/23 21:19	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		04/24/23 08:25	05/01/23 21:19	1
Zinc	<0.0200		0.0200	0.00640	mg/L		04/24/23 08:25	05/01/23 21:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	**2.49**		0.200	0.100	mg/L			04/26/23 19:15	1
Chemical Oxygen Demand (SM 5220D LL)	**28.6**		5.00	4.80	mg/L			04/26/23 08:32	1
Total Suspended Solids (USGS I-3765-85)	**77.0**		15.0	5.10	mg/L			04/24/23 13:00	1

Client Sample Results

Client: SCS Engineers
Project/Site: Anderson Excavating Carter Lake C&D Landfill (1st

Job ID: 310-254024-1
SDG: 27223229

Client Sample ID: MW-6

Date Collected: 04/19/23 11:39
Date Received: 04/20/23 16:00

Lab Sample ID: 310-254024-3

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**122**		10.0	4.50	mg/L			04/26/23 21:23	10

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**36.3**		0.500	0.0930	mg/L		04/24/23 08:25	05/04/23 15:57	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		04/24/23 08:25	05/01/23 21:22	1
Arsenic	**0.0690**		0.00200	0.000530	mg/L		04/24/23 08:25	05/01/23 21:22	1
Barium	**2.15**		0.00800	0.00256	mg/L		04/24/23 08:25	05/02/23 16:16	4
Beryllium	<0.00100		0.00100	0.000330	mg/L		04/24/23 08:25	05/01/23 21:22	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/24/23 08:25	05/01/23 21:22	1
Cobalt	**0.00223**		0.000500	0.000170	mg/L		04/24/23 08:25	05/01/23 21:22	1
Copper	<0.00500		0.00500	0.00180	mg/L		04/24/23 08:25	05/01/23 21:22	1
Lead	<0.000500		0.000500	0.000240	mg/L		04/24/23 08:25	05/01/23 21:22	1
Nickel	<0.00500		0.00500	0.00190	mg/L		04/24/23 08:25	05/01/23 21:22	1
Silver	<0.00100		0.00100	0.000500	mg/L		04/24/23 08:25	05/01/23 21:22	1
Thallium	<0.00100		0.00100	0.000260	mg/L		04/24/23 08:25	05/01/23 21:22	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		04/24/23 08:25	05/01/23 21:22	1
Zinc	<0.0200		0.0200	0.00640	mg/L		04/24/23 08:25	05/01/23 21:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	**6.57**		0.200	0.100	mg/L			04/26/23 19:15	1
Chemical Oxygen Demand (SM 5220D LL)	**126**		5.00	4.80	mg/L			04/26/23 08:32	1
Total Suspended Solids (USGS I-3765-85)	**80.7**		5.00	1.70	mg/L			04/21/23 14:06	1

Client: SCS Engineers
Project/Site: Anderson Excavating Carter Lake C&D Landfill
(1st

Job ID: 310-254024-1
SDG: 27223229

Client Sample ID: MW-7R2

Date Collected: 04/19/23 12:46
Date Received: 04/20/23 16:00

Lab Sample ID: 310-254024-4

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**64.0**		10.0	4.50	mg/L			04/26/23 21:39	10

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**55.2**		0.500	0.0930	mg/L		04/24/23 08:25	05/04/23 15:59	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		04/24/23 08:25	05/01/23 21:24	1
Arsenic	**0.110**		0.00200	0.000530	mg/L		04/24/23 08:25	05/01/23 21:24	1
Barium	**0.721**		0.00200	0.000640	mg/L		04/24/23 08:25	05/01/23 21:24	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		04/24/23 08:25	05/01/23 21:24	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/24/23 08:25	05/01/23 21:24	1
Cobalt	**0.00166**		0.000500	0.000170	mg/L		04/24/23 08:25	05/01/23 21:24	1
Copper	<0.00500		0.00500	0.00180	mg/L		04/24/23 08:25	05/01/23 21:24	1
Lead	**0.00170**		0.000500	0.000240	mg/L		04/24/23 08:25	05/01/23 21:24	1
Nickel	**0.00519**		0.00500	0.00190	mg/L		04/24/23 08:25	05/01/23 21:24	1
Silver	<0.00100		0.00100	0.000500	mg/L		04/24/23 08:25	05/01/23 21:24	1
Thallium	<0.00100		0.00100	0.000260	mg/L		04/24/23 08:25	05/01/23 21:24	1
Vanadium	**0.00165**	**J**	0.00500	0.00110	mg/L		04/24/23 08:25	05/01/23 21:24	1
Zinc	**0.0257**		0.0200	0.00640	mg/L		04/24/23 08:25	05/01/23 21:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	**3.93**		0.200	0.100	mg/L			04/26/23 19:15	1
Chemical Oxygen Demand (SM 5220D LL)	**12.4**		5.00	4.80	mg/L			04/26/23 08:32	1
Total Suspended Solids (USGS I-3765-85)	**117**		15.0	5.10	mg/L			04/21/23 14:06	1

Client: SCS Engineers
Project/Site: Anderson Excavating Carter Lake C&D Landfill
(1st

Job ID: 310-254024-1
SDG: 27223229

Client Sample ID: MW-D

Date Collected: 04/19/23 09:43
Date Received: 04/20/23 16:00

Lab Sample ID: 310-254024-5

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**340**		10.0	4.50	mg/L			04/26/23 21:54	10

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**58.3**		0.500	0.0930	mg/L		04/24/23 08:25	05/04/23 16:12	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		04/24/23 08:25	05/01/23 21:27	1
Arsenic	**0.0744**		0.00200	0.000530	mg/L		04/24/23 08:25	05/01/23 21:27	1
Barium	**0.0859**		0.00200	0.000640	mg/L		04/24/23 08:25	05/01/23 21:27	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		04/24/23 08:25	05/01/23 21:27	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/24/23 08:25	05/01/23 21:27	1
Cobalt	**0.00317**		0.000500	0.000170	mg/L		04/24/23 08:25	05/01/23 21:27	1
Copper	<0.00500		0.00500	0.00180	mg/L		04/24/23 08:25	05/01/23 21:27	1
Lead	**0.000338**	**J**	0.000500	0.000240	mg/L		04/24/23 08:25	05/01/23 21:27	1
Nickel	**0.00813**		0.00500	0.00190	mg/L		04/24/23 08:25	05/01/23 21:27	1
Silver	<0.00100		0.00100	0.000500	mg/L		04/24/23 08:25	05/01/23 21:27	1
Thallium	<0.00100		0.00100	0.000260	mg/L		04/24/23 08:25	05/01/23 21:27	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		04/24/23 08:25	05/01/23 21:27	1
Zinc	<0.0200		0.0200	0.00640	mg/L		04/24/23 08:25	05/01/23 21:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	**1.70**		0.200	0.100	mg/L			04/26/23 19:17	1
Chemical Oxygen Demand (SM 5220D LL)	**39.4**		5.00	4.80	mg/L			04/26/23 08:32	1
Total Suspended Solids (USGS I-3765-85)	**79.0**		15.0	5.10	mg/L			04/21/23 14:06	1

Client: SCS Engineers
Project/Site: Anderson Excavating Carter Lake C&D Landfill
(1st

Job ID: 310-254024-1
SDG: 27223229

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-385722/3
Matrix: Water
Analysis Batch: 385722

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00	0.450	mg/L			04/26/23 17:29	1

Lab Sample ID: LCS 310-385722/4
Matrix: Water
Analysis Batch: 385722

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	10.25		mg/L		103	90 - 110

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 310-385167/1-A
Matrix: Water
Analysis Batch: 386472

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 385167

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.500		0.500	0.0930	mg/L		04/24/23 08:25	05/04/23 15:50	1

Lab Sample ID: LCS 310-385167/2-A
Matrix: Water
Analysis Batch: 386472

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 385167

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	0.200	0.2229	J	mg/L		111	80 - 120

Lab Sample ID: MB 310-386319/1-A
Matrix: Water
Analysis Batch: 386528

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 386319

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.500		0.500	0.0930	mg/L		05/04/23 08:45	05/04/23 19:22	1

Lab Sample ID: LCS 310-386319/2-A
Matrix: Water
Analysis Batch: 386528

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 386319

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	2.00	2.362		mg/L		118	80 - 120

Lab Sample ID: 310-254024-1 MS
Matrix: Ground Water
Analysis Batch: 386528

Client Sample ID: MW-1R
Prep Type: Dissolved
Prep Batch: 386319

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	55.9		2.00	61.38	4	mg/L		275	75 - 125

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: 310-254024-1 MSD
Matrix: Ground Water
Analysis Batch: 386528

Client Sample ID: MW-1R
Prep Type: Dissolved
Prep Batch: 386319

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron	55.9		2.00	58.71	4	mg/L		141	75 - 125	4	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-385166/1-A
Matrix: Water
Analysis Batch: 386093

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 385166

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		04/24/23 08:25	05/01/23 20:45	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		04/24/23 08:25	05/01/23 20:45	1
Barium	<0.00200		0.00200	0.000640	mg/L		04/24/23 08:25	05/01/23 20:45	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		04/24/23 08:25	05/01/23 20:45	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/24/23 08:25	05/01/23 20:45	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		04/24/23 08:25	05/01/23 20:45	1
Copper	<0.00500		0.00500	0.00180	mg/L		04/24/23 08:25	05/01/23 20:45	1
Lead	<0.000500		0.000500	0.000240	mg/L		04/24/23 08:25	05/01/23 20:45	1
Nickel	<0.00500		0.00500	0.00190	mg/L		04/24/23 08:25	05/01/23 20:45	1
Silver	<0.00100		0.00100	0.000500	mg/L		04/24/23 08:25	05/01/23 20:45	1
Thallium	<0.00100		0.00100	0.000260	mg/L		04/24/23 08:25	05/01/23 20:45	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		04/24/23 08:25	05/01/23 20:45	1
Zinc	<0.0200		0.0200	0.00640	mg/L		04/24/23 08:25	05/01/23 20:45	1

Lab Sample ID: LCS 310-385166/2-A
Matrix: Water
Analysis Batch: 386093

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 385166

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2129		mg/L		106	80 - 120
Arsenic	0.200	0.1945		mg/L		97	80 - 120
Barium	0.100	0.1016		mg/L		102	80 - 120
Beryllium	0.100	0.09470		mg/L		95	80 - 120
Cadmium	0.100	0.09806		mg/L		98	80 - 120
Cobalt	0.100	0.09874		mg/L		99	80 - 120
Copper	0.200	0.2094		mg/L		105	80 - 120
Lead	0.200	0.1989		mg/L		99	80 - 120
Nickel	0.200	0.2028		mg/L		101	80 - 120
Silver	0.100	0.1151		mg/L		115	80 - 120
Thallium	0.200	0.1605		mg/L		80	80 - 120
Vanadium	0.100	0.09397		mg/L		94	80 - 120
Zinc	0.200	0.1907		mg/L		95	80 - 120

Lab Sample ID: 310-254024-1 MS
Matrix: Ground Water
Analysis Batch: 386093

Client Sample ID: MW-1R
Prep Type: Total/NA
Prep Batch: 385166

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<0.00200		0.200	0.2343		mg/L		117	75 - 125

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-254024-1 MS — **Client Sample ID: MW-1R**
Matrix: Ground Water — **Prep Type: Total/NA**
Analysis Batch: 386093 — **Prep Batch: 385166**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0711		0.200	0.2897		mg/L		109	75 - 125
Barium	0.0810		0.100	0.1953		mg/L		114	75 - 125
Beryllium	<0.00100		0.100	0.1040		mg/L		104	75 - 125
Cadmium	0.000179	J	0.100	0.1041		mg/L		104	75 - 125
Cobalt	0.00101		0.100	0.1037		mg/L		103	75 - 125
Copper	<0.00500		0.200	0.2150		mg/L		108	75 - 125
Lead	0.000490	J	0.200	0.2089		mg/L		104	75 - 125
Nickel	0.00436	J	0.200	0.2161		mg/L		106	75 - 125
Silver	<0.00100		0.100	0.1053		mg/L		105	75 - 125
Thallium	0.000878	J	0.200	0.1637		mg/L		81	75 - 125
Vanadium	<0.00500		0.100	0.1038		mg/L		104	75 - 125
Zinc	<0.0200		0.200	0.2084		mg/L		104	75 - 125

Lab Sample ID: 310-254024-1 MSD — **Client Sample ID: MW-1R**
Matrix: Ground Water — **Prep Type: Total/NA**
Analysis Batch: 386093 — **Prep Batch: 385166**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	<0.00200		0.200	0.2234		mg/L		112	75 - 125	5	20
Arsenic	0.0711		0.200	0.2851		mg/L		107	75 - 125	2	20
Barium	0.0810		0.100	0.1911		mg/L		110	75 - 125	2	20
Beryllium	<0.00100		0.100	0.09830		mg/L		98	75 - 125	6	20
Cadmium	0.000179	J	0.100	0.1004		mg/L		100	75 - 125	4	20
Cobalt	0.00101		0.100	0.1007		mg/L		100	75 - 125	3	20
Copper	<0.00500		0.200	0.2102		mg/L		105	75 - 125	2	20
Lead	0.000490	J	0.200	0.1979		mg/L		99	75 - 125	5	20
Nickel	0.00436	J	0.200	0.2105		mg/L		103	75 - 125	3	20
Silver	<0.00100		0.100	0.1060		mg/L		106	75 - 125	1	20
Thallium	0.000878	J	0.200	0.1566		mg/L		78	75 - 125	4	20
Vanadium	<0.00500		0.100	0.09982		mg/L		100	75 - 125	4	20
Zinc	<0.0200		0.200	0.2042		mg/L		102	75 - 125	2	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 310-385629/82 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 385629

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.200		0.200	0.100	mg/L			04/26/23 19:10	1

Lab Sample ID: LCS 310-385629/83 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 385629

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	7.80	7.586		mg/L		97	90 - 110

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: 310-254024-1 MS
Matrix: Ground Water
Analysis Batch: 385629

Client Sample ID: MW-1R
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	1.63	F1	1.00	2.316	F1	mg/L		68	90 - 110

Lab Sample ID: 310-254024-1 MSD
Matrix: Ground Water
Analysis Batch: 385629

Client Sample ID: MW-1R
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	1.63	F1	1.00	2.290	F1	mg/L		66	90 - 110	1	10

Method: 5220D LL - COD

Lab Sample ID: MB 310-385528/5
Matrix: Water
Analysis Batch: 385528

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<5.00		5.00	4.80	mg/L			04/26/23 08:32	1

Lab Sample ID: LCS 310-385528/3
Matrix: Water
Analysis Batch: 385528

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	124.0		mg/L		99	85 - 115

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-385138/1
Matrix: Water
Analysis Batch: 385138

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	1.70	mg/L			04/21/23 14:06	1

Lab Sample ID: LCS 310-385138/2
Matrix: Water
Analysis Batch: 385138

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	106.0		mg/L		106	75 - 116

Lab Sample ID: MB 310-385301/1
Matrix: Water
Analysis Batch: 385301

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	1.70	mg/L			04/24/23 13:00	1

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: LCS 310-385301/2
Matrix: Water
Analysis Batch: 385301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	101.0		mg/L		101	75 - 116

HPLC/IC

Analysis Batch: 385722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-254024-1	MW-1R	Total/NA	Ground Water	9056A	
310-254024-2	MW-4	Total/NA	Ground Water	9056A	
310-254024-3	MW-6	Total/NA	Ground Water	9056A	
310-254024-4	MW-7R2	Total/NA	Ground Water	9056A	
310-254024-5	MW-D	Total/NA	Ground Water	9056A	
MB 310-385722/3	Method Blank	Total/NA	Water	9056A	
LCS 310-385722/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 385166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-254024-1	MW-1R	Total/NA	Ground Water	3005A	
310-254024-2	MW-4	Total/NA	Ground Water	3005A	
310-254024-3	MW-6	Total/NA	Ground Water	3005A	
310-254024-4	MW-7R2	Total/NA	Ground Water	3005A	
310-254024-5	MW-D	Total/NA	Ground Water	3005A	
MB 310-385166/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-385166/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-254024-1 MS	MW-1R	Total/NA	Ground Water	3005A	
310-254024-1 MSD	MW-1R	Total/NA	Ground Water	3005A	

Prep Batch: 385167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-254024-2	MW-4	Dissolved	Ground Water	3005A	
310-254024-3	MW-6	Dissolved	Ground Water	3005A	
310-254024-4	MW-7R2	Dissolved	Ground Water	3005A	
310-254024-5	MW-D	Dissolved	Ground Water	3005A	
MB 310-385167/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-385167/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 386093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-254024-1	MW-1R	Total/NA	Ground Water	6020B	385166
310-254024-2	MW-4	Total/NA	Ground Water	6020B	385166
310-254024-3	MW-6	Total/NA	Ground Water	6020B	385166
310-254024-4	MW-7R2	Total/NA	Ground Water	6020B	385166
310-254024-5	MW-D	Total/NA	Ground Water	6020B	385166
MB 310-385166/1-A	Method Blank	Total/NA	Water	6020B	385166
LCS 310-385166/2-A	Lab Control Sample	Total/NA	Water	6020B	385166
310-254024-1 MS	MW-1R	Total/NA	Ground Water	6020B	385166
310-254024-1 MSD	MW-1R	Total/NA	Ground Water	6020B	385166

Analysis Batch: 386235

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-254024-3	MW-6	Total/NA	Ground Water	6020B	385166

Prep Batch: 386319

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-254024-1	MW-1R	Dissolved	Ground Water	3005A	

Metals (Continued)

Prep Batch: 386319 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-386319/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-386319/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-254024-1 MS	MW-1R	Dissolved	Ground Water	3005A	
310-254024-1 MSD	MW-1R	Dissolved	Ground Water	3005A	

Analysis Batch: 386472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-254024-2	MW-4	Dissolved	Ground Water	6010D	385167
310-254024-3	MW-6	Dissolved	Ground Water	6010D	385167
310-254024-4	MW-7R2	Dissolved	Ground Water	6010D	385167
310-254024-5	MW-D	Dissolved	Ground Water	6010D	385167
MB 310-385167/1-A	Method Blank	Total/NA	Water	6010D	385167
LCS 310-385167/2-A	Lab Control Sample	Total/NA	Water	6010D	385167

Analysis Batch: 386528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-254024-1	MW-1R	Dissolved	Ground Water	6010D	386319
MB 310-386319/1-A	Method Blank	Total/NA	Water	6010D	386319
LCS 310-386319/2-A	Lab Control Sample	Total/NA	Water	6010D	386319
310-254024-1 MS	MW-1R	Dissolved	Ground Water	6010D	386319
310-254024-1 MSD	MW-1R	Dissolved	Ground Water	6010D	386319

General Chemistry

Analysis Batch: 385138

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-254024-1	MW-1R	Total/NA	Ground Water	I-3765-85	
310-254024-3	MW-6	Total/NA	Ground Water	I-3765-85	
310-254024-4	MW-7R2	Total/NA	Ground Water	I-3765-85	
310-254024-5	MW-D	Total/NA	Ground Water	I-3765-85	
MB 310-385138/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-385138/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 385301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-254024-2	MW-4	Total/NA	Ground Water	I-3765-85	
MB 310-385301/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-385301/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 385528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-254024-1	MW-1R	Total/NA	Ground Water	5220D LL	
310-254024-2	MW-4	Total/NA	Ground Water	5220D LL	
310-254024-3	MW-6	Total/NA	Ground Water	5220D LL	
310-254024-4	MW-7R2	Total/NA	Ground Water	5220D LL	
310-254024-5	MW-D	Total/NA	Ground Water	5220D LL	
MB 310-385528/5	Method Blank	Total/NA	Water	5220D LL	
LCS 310-385528/3	Lab Control Sample	Total/NA	Water	5220D LL	

QC Association Summary

Client: SCS Engineers
Project/Site: Anderson Excavating Carter Lake C&D Landfill
(1st

Job ID: 310-254024-1
SDG: 27223229

General Chemistry

Analysis Batch: 385629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-254024-1	MW-1R	Total/NA	Ground Water	350.1	
310-254024-2	MW-4	Total/NA	Ground Water	350.1	
310-254024-3	MW-6	Total/NA	Ground Water	350.1	
310-254024-4	MW-7R2	Total/NA	Ground Water	350.1	
310-254024-5	MW-D	Total/NA	Ground Water	350.1	
MB 310-385629/82	Method Blank	Total/NA	Water	350.1	
LCS 310-385629/83	Lab Control Sample	Total/NA	Water	350.1	
310-254024-1 MS	MW-1R	Total/NA	Ground Water	350.1	
310-254024-1 MSD	MW-1R	Total/NA	Ground Water	350.1	

Lab Chronicle

Client: SCS Engineers
Project/Site: Anderson Excavating Carter Lake C&D Landfill (1st

Job ID: 310-254024-1
SDG: 27223229

Client Sample ID: MW-1R

Date Collected: 04/19/23 09:43
Date Received: 04/20/23 16:00

Lab Sample ID: 310-254024-1

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		10	385722	QTZ5	EET CF	04/26/23 20:52
Dissolved	Prep	3005A			386319	DHM5	EET CF	05/04/23 08:45
Dissolved	Analysis	6010D		1	386528	A6US	EET CF	05/04/23 19:26
Total/NA	Prep	3005A			385166	DHM5	EET CF	04/24/23 08:25
Total/NA	Analysis	6020B		1	386093	ZRI4	EET CF	05/01/23 20:50
Total/NA	Analysis	350.1		1	385629	ZJX4	EET CF	04/26/23 19:12
Total/NA	Analysis	5220D LL		1	385528	D7CP	EET CF	04/26/23 08:32
Total/NA	Analysis	I-3765-85		1	385138	D7CP	EET CF	04/21/23 14:06

Client Sample ID: MW-4

Date Collected: 04/19/23 10:35
Date Received: 04/20/23 16:00

Lab Sample ID: 310-254024-2

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		10	385722	QTZ5	EET CF	04/26/23 21:07
Dissolved	Prep	3005A			385167	DHM5	EET CF	04/24/23 08:25
Dissolved	Analysis	6010D		1	386472	A6US	EET CF	05/04/23 15:54
Total/NA	Prep	3005A			385166	DHM5	EET CF	04/24/23 08:25
Total/NA	Analysis	6020B		1	386093	ZRI4	EET CF	05/01/23 21:19
Total/NA	Analysis	350.1		1	385629	ZJX4	EET CF	04/26/23 19:15
Total/NA	Analysis	5220D LL		1	385528	D7CP	EET CF	04/26/23 08:32
Total/NA	Analysis	I-3765-85		1	385301	DGU1	EET CF	04/24/23 13:00

Client Sample ID: MW-6

Date Collected: 04/19/23 11:39
Date Received: 04/20/23 16:00

Lab Sample ID: 310-254024-3

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		10	385722	QTZ5	EET CF	04/26/23 21:23
Dissolved	Prep	3005A			385167	DHM5	EET CF	04/24/23 08:25
Dissolved	Analysis	6010D		1	386472	A6US	EET CF	05/04/23 15:57
Total/NA	Prep	3005A			385166	DHM5	EET CF	04/24/23 08:25
Total/NA	Analysis	6020B		1	386093	ZRI4	EET CF	05/01/23 21:22
Total/NA	Prep	3005A			385166	DHM5	EET CF	04/24/23 08:25
Total/NA	Analysis	6020B		4	386235	ZRI4	EET CF	05/02/23 16:16
Total/NA	Analysis	350.1		1	385629	ZJX4	EET CF	04/26/23 19:15
Total/NA	Analysis	5220D LL		1	385528	D7CP	EET CF	04/26/23 08:32
Total/NA	Analysis	I-3765-85		1	385138	D7CP	EET CF	04/21/23 14:06

Lab Chronicle

Client: SCS Engineers
Project/Site: Anderson Excavating Carter Lake C&D Landfill (1st

Job ID: 310-254024-1
SDG: 27223229

Client Sample ID: MW-7R2

Lab Sample ID: 310-254024-4

Date Collected: 04/19/23 12:46
Date Received: 04/20/23 16:00

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		10	385722	QTZ5	EET CF	04/26/23 21:39
Dissolved	Prep	3005A			385167	DHM5	EET CF	04/24/23 08:25
Dissolved	Analysis	6010D		1	386472	A6US	EET CF	05/04/23 15:59
Total/NA	Prep	3005A			385166	DHM5	EET CF	04/24/23 08:25
Total/NA	Analysis	6020B		1	386093	ZRI4	EET CF	05/01/23 21:24
Total/NA	Analysis	350.1		1	385629	ZJX4	EET CF	04/26/23 19:15
Total/NA	Analysis	5220D LL		1	385528	D7CP	EET CF	04/26/23 08:32
Total/NA	Analysis	I-3765-85		1	385138	D7CP	EET CF	04/21/23 14:06

Client Sample ID: MW-D

Lab Sample ID: 310-254024-5

Date Collected: 04/19/23 09:43
Date Received: 04/20/23 16:00

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		10	385722	QTZ5	EET CF	04/26/23 21:54
Dissolved	Prep	3005A			385167	DHM5	EET CF	04/24/23 08:25
Dissolved	Analysis	6010D		1	386472	A6US	EET CF	05/04/23 16:12
Total/NA	Prep	3005A			385166	DHM5	EET CF	04/24/23 08:25
Total/NA	Analysis	6020B		1	386093	ZRI4	EET CF	05/01/23 21:27
Total/NA	Analysis	350.1		1	385629	ZJX4	EET CF	04/26/23 19:17
Total/NA	Analysis	5220D LL		1	385528	D7CP	EET CF	04/26/23 08:32
Total/NA	Analysis	I-3765-85		1	385138	D7CP	EET CF	04/21/23 14:06

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: Anderson Excavating Carter Lake C&D Landfill
(1st

Job ID: 310-254024-1
SDG: 27223229

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-23

Method Summary

Client: SCS Engineers
Project/Site: Anderson Excavating Carter Lake C&D Landfill (1st

Job ID: 310-254024-1
SDG: 27223229

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6010D	Metals (ICP)	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
350.1	Nitrogen, Ammonia	EPA	EET CF
5220D LL	COD	SM	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-254024 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY W. Des Moines STATE IA

Project:

Receipt Information

Date/Time Received: DATE 4-20-23 TIME 1600

Received By: AM

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☑ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☑ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present?	☐ Yes	☑ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☑ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: W | Correction Factor (°C): 0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.1 | Corrected Temp (°C): 0.1

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

* Received limited volume for: MW-7R2
MW-0

TestAmerica Omaha SC
268

Page 1 of 1

TestAmerica

3019 Venture Way
Cedar Falls, Iowa 50613

319 277 2401 (phone)
515 792 7989 (fax)

SAMPLER: SCS Engineers
SITE NAME: Anderson Excavating & Wrecking Carter Lake C&D Landfill (closed)
ADDRESS:
CITY/STATE/ZIP:
TELEPHONE NUMBER: Fax:
SAMPLED BY: (PRINT NAME) Scott Stoller
SIGNATURE: [signature]

REPORT TO:
NAME: Ben Madson (bmadson@scsengineers.com)
COMPANY NAME: SCS Engineers
PROJECT NAME: Anderson Excavating Carter Lake C&D Landfill (1st 2023 semi-annual HMSP)
PROJECT NUMBER: 27223229
ADDRESS: 1690 All State Ct., Ste. 100
CITY/STATE/ZIP: West Des Moines, IA 50265

								Preservative								Matrix						Analyze For																
Sample ID	Date Sampled	Time Sampled	# of Containers Ordered	# of Containers Shipped	Grab	Composite	Field Filtered	Ice	HNO_3 (Red & White Label)	HCl (Blue & White Label)	NaOH (Orange & White Label)	H_2SO_4 Plastic (Yellow & White Label)	H_2SO_4 Glass (Yellow & White Label)	None (Black & White Label)	Trip Blank	Groundwater	Wastewater	Drinking Water	Sludge	Soil	Trip Blank	[illegible] list	Total Antimony	Total Arsenic	Total Barium	Total Beryllium	Total Cadmium	Total Cobalt	Total Copper	Total Lead	Total Nickel	Total Silver	Total Thallium	Total Vanadium	Total Zinc	Total Suspended Solids	Trip Blank	Fax Results
MW-1R	4/19	9:43			x			x								x						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
MW-3					x			x								x						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
MW-4	7/19	10:35			x			x								x						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
MW-5					x			x								x						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
MW-6	4/19	11:39			x			x								x						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
MW-7R2	4/19	12:46			x			x								x						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
MW-D	4/19	9:43			x			x								x						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
Trip Blank			1												x						x																x	

Relinquished by: Scott Stoller Date: 4/19 Time: 13:30 Received by: [signature] Date: 4-19 Time: 1430 Relinquished by: [signature] 4-20-23 0800

Shipped Via: Comments Shipped Via

Received for lab by: [signature] Date: 4-20-23 Time: 1600 Temperature Upon Receipt:

Laboratory Comment: For Appendix and analysis, report to the reporting limits, not the detection limits. Make sure that the reporting limits are below the EPA MCLs.
[2] For analysis other than Appendix and report to the detection limit. Please make sure that the detection limits are below the EPA MCLs.
[3] In the "Result" column for all LOD values, when non-detect, please report the reporting limits or the detection limit instead of indicating with "ND"

\\des-fs01\DesMoines\Project\27223229.00\Data and Calculations\1-Groundwater Sampling\Mobes\2023 1st semi annual and CH4-COC HMSP

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-254024-1
SDG Number: 27223229

Login Number: 254024
List Number: 1
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	Limited volume received for MW-7R2, MW-D
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Leah Calvert
SCS Engineers
1690 All State Court
Suite 100
West Des Moines, Iowa 50265

Generated 11/10/2023 3:09:02 PM

JOB DESCRIPTION

Anderson Excavating Carter Lake C&D

JOB NUMBER

310-268505-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

myEOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization

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Authorized for release by
Meredith Liechti, Service Center Manager
meredith.liechti@et.eurofinsus.com
(319)277-2401

Table of Contents

Job ID: 310-268505-1

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative
310-268505-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/27/2023 4:35 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.8°C and 1.4°C

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6010D: The reference method requires samples to be preserved to a pH of <2. The following samples were received with insufficient preservation at a pH of >2: MW-6 (310-268505-3), MW-7R2 (310-268505-4) and MW-D (310-268505-5). The sample(s) was preserved to the appropriate pH in the laboratory.

Method 6020B: The reference method requires samples to be preserved to a pH of <2. The following samples were received with insufficient preservation at a pH of >2: MW-6 (310-268505-3) and MW-7R2 (310-268505-4). The sample(s) was preserved to the appropriate pH in the laboratory.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method 9020B: Breakthrough exceeded 10% for the following samples:MW-1R (310-268505-1), MW-4 (310-268505-2) and MW-6 (310-268505-3).

Method 9020B: Breakthrough exceeded 10% for the following samples:MW-4 (310-268505-2), MW-7R2 (310-268505-4) and MW-D (310-268505-5).

Method 9020B: Sample duplicate results are outside 20% RPD requirement. Reanalysis was performed with concurring results. The data has been reported.

MW-1R (310-268505-1) and MW-4 (310-268505-2)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: SCS Engineers
Job ID: 310-268505-1
Project/Site: Anderson Excavating Carter Lake C&D

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-268505-1	MW-1R	Water	10/26/23 11:04	10/27/23 16:35
310-268505-2	MW-4	Water	10/26/23 12:49	10/27/23 16:35
310-268505-3	MW-6	Water	10/26/23 13:27	10/27/23 16:35
310-268505-4	MW-7R2	Water	10/26/23 11:47	10/27/23 16:35
310-268505-5	MW-D	Water	10/26/23 12:49	10/27/23 16:35

Detection Summary

Client: SCS Engineers
Job ID: 310-268505-1
Project/Site: Anderson Excavating Carter Lake C&D

Client Sample ID: MW-1R — Lab Sample ID: 310-268505-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	252		10.0	4.50	mg/L	10		9056A	Total/NA
Iron	49.0		0.500	0.0930	mg/L	1		6010D	Dissolved
Arsenic	0.0671	F1	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0885	F1	0.00200	0.000640	mg/L	1		6020B	Total/NA
Cobalt	0.00434	F1	0.000500	0.000170	mg/L	1		6020B	Total/NA
Lead	0.000349	J F1	0.000500	0.000240	mg/L	1		6020B	Total/NA
Nickel	0.00533	F1	0.00500	0.00190	mg/L	1		6020B	Total/NA
Thallium	0.00567	F1	0.00100	0.000260	mg/L	1		6020B	Total/NA
Ammonia	1.92	F1	0.200	0.100	mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	53.8		5.00	4.80	mg/L	1		5220D LL	Total/NA
Halogens, Total Organic	139		40.0	14.0	ug/L	1		9020B	Total/NA
Total Suspended Solids	145		15.0	5.10	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-4 — Lab Sample ID: 310-268505-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	152		5.00	2.25	mg/L	5		9056A	Total/NA
Iron	36.0		0.500	0.0930	mg/L	1		6010D	Dissolved
Arsenic	0.0459		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.247		0.00200	0.000640	mg/L	1		6020B	Total/NA
Cobalt	0.000253	J	0.000500	0.000170	mg/L	1		6020B	Total/NA
Ammonia	2.38		0.200	0.100	mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	30.0		5.00	4.80	mg/L	1		5220D LL	Total/NA
Halogens, Total Organic	149		40.0	14.0	ug/L	1		9020B	Total/NA
Total Suspended Solids	126		15.0	5.10	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-6 — Lab Sample ID: 310-268505-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	127		5.00	2.25	mg/L	5		9056A	Total/NA
Iron	30.7		0.500	0.0930	mg/L	1		6010D	Dissolved
Arsenic	0.0483		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	1.35		0.00200	0.000640	mg/L	1		6020B	Total/NA
Cobalt	0.00238		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.00217	J	0.00500	0.00190	mg/L	1		6020B	Total/NA
Ammonia	5.81		0.200	0.100	mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	141		5.00	4.80	mg/L	1		5220D LL	Total/NA
Halogens, Total Organic	150		40.0	14.0	ug/L	1		9020B	Total/NA
Total Suspended Solids	91.0		15.0	5.10	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-7R2 — Lab Sample ID: 310-268505-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	62.6		5.00	2.25	mg/L	5		9056A	Total/NA
Iron	54.4		0.500	0.0930	mg/L	1		6010D	Dissolved
Arsenic	0.194		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.786		0.00200	0.000640	mg/L	1		6020B	Total/NA
Cobalt	0.00446		0.000500	0.000170	mg/L	1		6020B	Total/NA
Lead	0.000468	J	0.000500	0.000240	mg/L	1		6020B	Total/NA
Nickel	0.00670		0.00500	0.00190	mg/L	1		6020B	Total/NA
Vanadium	0.00200	J	0.00500	0.00110	mg/L	1		6020B	Total/NA
Ammonia	4.29		0.200	0.100	mg/L	1		350.1	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-7R2 (Continued)
Lab Sample ID: 310-268505-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chemical Oxygen Demand	114		5.00	4.80	mg/L	1		5220D LL	Total/NA
Halogens, Total Organic	201		40.0	14.0	ug/L	1		9020B	Total/NA
Total Suspended Solids	150		15.0	5.10	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-D
Lab Sample ID: 310-268505-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	152		10.0	4.50	mg/L	10		9056A	Total/NA
Iron	36.4		0.500	0.0930	mg/L	1		6010D	Dissolved
Arsenic	0.0491		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.248		0.00200	0.000640	mg/L	1		6020B	Total/NA
Cobalt	0.000235	J	0.000500	0.000170	mg/L	1		6020B	Total/NA
Ammonia	2.38		0.200	0.100	mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	31.8		5.00	4.80	mg/L	1		5220D LL	Total/NA
Halogens, Total Organic	199		40.0	14.0	ug/L	1		9020B	Total/NA
Total Suspended Solids	94.0		15.0	5.10	mg/L	1		I-3765-85	Total/NA

This Detection Summary does not include radiochemical test results.

Client: SCS Engineers
Job ID: 310-268505-1
Project/Site: Anderson Excavating Carter Lake C&D

Client Sample ID: MW-1R
Lab Sample ID: 310-268505-1
Date Collected: 10/26/23 11:04
Matrix: Water
Date Received: 10/27/23 16:35

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**252**		10.0	4.50	mg/L			11/06/23 19:00	10

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**49.0**		0.500	0.0930	mg/L		11/09/23 09:20	11/09/23 19:02	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200	F1	0.00200	0.00100	mg/L		11/02/23 09:50	11/07/23 16:25	1
Arsenic	**0.0671**	**F1**	0.00200	0.000530	mg/L		11/02/23 09:50	11/07/23 16:25	1
Barium	**0.0885**	**F1**	0.00200	0.000640	mg/L		11/02/23 09:50	11/07/23 16:25	1
Beryllium	<0.00100	F1	0.00100	0.000330	mg/L		11/02/23 09:50	11/07/23 16:25	1
Cadmium	<0.000200	F1	0.000200	0.000100	mg/L		11/02/23 09:50	11/07/23 16:25	1
Cobalt	**0.00434**	**F1**	0.000500	0.000170	mg/L		11/02/23 09:50	11/07/23 16:25	1
Copper	<0.00500	F1	0.00500	0.00180	mg/L		11/02/23 09:50	11/07/23 16:25	1
Lead	**0.000349**	**J F1**	0.000500	0.000240	mg/L		11/02/23 09:50	11/07/23 16:25	1
Nickel	**0.00533**	**F1**	0.00500	0.00190	mg/L		11/02/23 09:50	11/07/23 16:25	1
Silver	<0.00100	F1	0.00100	0.000500	mg/L		11/02/23 09:50	11/07/23 16:25	1
Thallium	**0.00567**	**F1**	0.00100	0.000260	mg/L		11/02/23 09:50	11/07/23 16:25	1
Vanadium	<0.00500	F1	0.00500	0.00110	mg/L		11/02/23 09:50	11/07/23 16:25	1
Zinc	<0.0200	F1	0.0200	0.00640	mg/L		11/02/23 09:50	11/07/23 16:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	**1.92**	**F1**	0.200	0.100	mg/L			11/02/23 20:58	1
Chemical Oxygen Demand (SM 5220D LL)	**53.8**		5.00	4.80	mg/L			11/03/23 10:18	1
Halogens, Total Organic (SW846 9020B)	**139**		40.0	14.0	ug/L		11/08/23 12:31	11/09/23 09:24	1
Total Suspended Solids (USGS I-3765-85)	**145**		15.0	5.10	mg/L			11/01/23 13:43	1

Client: SCS Engineers
Job ID: 310-268505-1
Project/Site: Anderson Excavating Carter Lake C&D

Client Sample ID: MW-4
Lab Sample ID: 310-268505-2
Date Collected: 10/26/23 12:49
Matrix: Water
Date Received: 10/27/23 16:35

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**152**		5.00	2.25	mg/L			11/06/23 19:14	5

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**36.0**		0.500	0.0930	mg/L		11/09/23 09:20	11/09/23 19:08	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		11/02/23 09:50	11/08/23 12:24	1
Arsenic	**0.0459**		0.00200	0.000530	mg/L		11/02/23 09:50	11/08/23 12:24	1
Barium	**0.247**		0.00200	0.000640	mg/L		11/02/23 09:50	11/08/23 12:24	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		11/02/23 09:50	11/08/23 12:24	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		11/02/23 09:50	11/08/23 12:24	1
Cobalt	**0.000253**	**J**	0.000500	0.000170	mg/L		11/02/23 09:50	11/08/23 12:24	1
Copper	<0.00500		0.00500	0.00180	mg/L		11/02/23 09:50	11/08/23 12:24	1
Lead	<0.000500		0.000500	0.000240	mg/L		11/02/23 09:50	11/08/23 12:24	1
Nickel	<0.00500		0.00500	0.00190	mg/L		11/02/23 09:50	11/08/23 12:24	1
Silver	<0.00100		0.00100	0.000500	mg/L		11/02/23 09:50	11/08/23 12:24	1
Thallium	<0.00100		0.00100	0.000260	mg/L		11/02/23 09:50	11/08/23 12:24	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		11/02/23 09:50	11/08/23 12:24	1
Zinc	<0.0200		0.0200	0.00640	mg/L		11/02/23 09:50	11/08/23 12:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	**2.38**		0.200	0.100	mg/L			11/02/23 21:00	1
Chemical Oxygen Demand (SM 5220D LL)	**30.0**		5.00	4.80	mg/L			11/03/23 10:18	1
Halogens, Total Organic (SW846 9020B)	**149**		40.0	14.0	ug/L		11/08/23 12:31	11/09/23 10:57	1
Total Suspended Solids (USGS I-3765-85)	**126**		15.0	5.10	mg/L			11/01/23 13:43	1

Client: SCS Engineers
Project/Site: Anderson Excavating Carter Lake C&D

Job ID: 310-268505-1

Client Sample ID: MW-6

Date Collected: 10/26/23 13:27
Date Received: 10/27/23 16:35

Lab Sample ID: 310-268505-3

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**127**		5.00	2.25	mg/L			11/06/23 19:28	5

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**30.7**		0.500	0.0930	mg/L		11/09/23 09:20	11/09/23 19:10	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		11/02/23 09:50	11/08/23 12:13	1
Arsenic	**0.0483**		0.00200	0.000530	mg/L		11/02/23 09:50	11/08/23 12:13	1
Barium	**1.35**		0.00200	0.000640	mg/L		11/02/23 09:50	11/08/23 12:13	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		11/02/23 09:50	11/08/23 12:13	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		11/02/23 09:50	11/08/23 12:13	1
Cobalt	**0.00238**		0.000500	0.000170	mg/L		11/02/23 09:50	11/08/23 12:13	1
Copper	<0.00500		0.00500	0.00180	mg/L		11/02/23 09:50	11/08/23 12:13	1
Lead	<0.000500		0.000500	0.000240	mg/L		11/02/23 09:50	11/08/23 12:13	1
Nickel	**0.00217**	**J**	0.00500	0.00190	mg/L		11/02/23 09:50	11/08/23 12:13	1
Silver	<0.00100		0.00100	0.000500	mg/L		11/02/23 09:50	11/08/23 12:13	1
Thallium	<0.00100		0.00100	0.000260	mg/L		11/02/23 09:50	11/08/23 12:13	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		11/02/23 09:50	11/08/23 12:13	1
Zinc	<0.0200		0.0200	0.00640	mg/L		11/02/23 09:50	11/08/23 12:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	**5.81**		0.200	0.100	mg/L			11/02/23 21:02	1
Chemical Oxygen Demand (SM 5220D LL)	**141**		5.00	4.80	mg/L			11/03/23 10:18	1
Halogens, Total Organic (SW846 9020B)	**150**		40.0	14.0	ug/L		11/08/23 07:42	11/08/23 18:01	1
Total Suspended Solids (USGS I-3765-85)	**91.0**		15.0	5.10	mg/L			11/01/23 13:43	1

Client Sample ID: MW-7R2
Lab Sample ID: 310-268505-4
Date Collected: 10/26/23 11:47
Matrix: Water
Date Received: 10/27/23 16:35

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	62.6		5.00	2.25	mg/L			11/06/23 19:43	5

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	54.4		0.500	0.0930	mg/L		11/09/23 09:20	11/09/23 19:13	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		11/02/23 09:50	11/08/23 12:15	1
Arsenic	0.194		0.00200	0.000530	mg/L		11/02/23 09:50	11/08/23 12:15	1
Barium	0.786		0.00200	0.000640	mg/L		11/02/23 09:50	11/08/23 12:15	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		11/02/23 09:50	11/08/23 12:15	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		11/02/23 09:50	11/08/23 12:15	1
Cobalt	0.00446		0.000500	0.000170	mg/L		11/02/23 09:50	11/08/23 12:15	1
Copper	<0.00500		0.00500	0.00180	mg/L		11/02/23 09:50	11/08/23 12:15	1
Lead	0.000468	J	0.000500	0.000240	mg/L		11/02/23 09:50	11/08/23 12:15	1
Nickel	0.00670		0.00500	0.00190	mg/L		11/02/23 09:50	11/08/23 12:15	1
Silver	<0.00100		0.00100	0.000500	mg/L		11/02/23 09:50	11/08/23 12:15	1
Thallium	<0.00100		0.00100	0.000260	mg/L		11/02/23 09:50	11/08/23 12:15	1
Vanadium	0.00200	J	0.00500	0.00110	mg/L		11/02/23 09:50	11/08/23 12:15	1
Zinc	<0.0200		0.0200	0.00640	mg/L		11/02/23 09:50	11/08/23 12:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	4.29		0.200	0.100	mg/L			11/02/23 21:02	1
Chemical Oxygen Demand (SM 5220D LL)	114		5.00	4.80	mg/L			11/03/23 10:18	1
Halogens, Total Organic (SW846 9020B)	201		40.0	14.0	ug/L		11/08/23 12:31	11/09/23 08:31	1
Total Suspended Solids (USGS I-3765-85)	150		15.0	5.10	mg/L			11/01/23 13:43	1

Client: SCS Engineers
Project/Site: Anderson Excavating Carter Lake C&D

Job ID: 310-268505-1

Client Sample ID: MW-D

Date Collected: 10/26/23 12:49
Date Received: 10/27/23 16:35

Lab Sample ID: 310-268505-5

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**152**		10.0	4.50	mg/L			11/06/23 19:57	10

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**36.4**		0.500	0.0930	mg/L		11/09/23 09:20	11/09/23 19:15	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		11/02/23 09:50	11/08/23 12:17	1
Arsenic	**0.0491**		0.00200	0.000530	mg/L		11/02/23 09:50	11/08/23 12:17	1
Barium	**0.248**		0.00200	0.000640	mg/L		11/02/23 09:50	11/08/23 12:17	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		11/02/23 09:50	11/08/23 12:17	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		11/02/23 09:50	11/08/23 12:17	1
Cobalt	**0.000235**	**J**	0.000500	0.000170	mg/L		11/02/23 09:50	11/08/23 12:17	1
Copper	<0.00500		0.00500	0.00180	mg/L		11/02/23 09:50	11/08/23 12:17	1
Lead	<0.000500		0.000500	0.000240	mg/L		11/02/23 09:50	11/08/23 12:17	1
Nickel	<0.00500		0.00500	0.00190	mg/L		11/02/23 09:50	11/08/23 12:17	1
Silver	<0.00100		0.00100	0.000500	mg/L		11/02/23 09:50	11/08/23 12:17	1
Thallium	<0.00100		0.00100	0.000260	mg/L		11/02/23 09:50	11/08/23 12:17	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		11/02/23 09:50	11/08/23 12:17	1
Zinc	<0.0200		0.0200	0.00640	mg/L		11/02/23 09:50	11/08/23 12:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	**2.38**		0.200	0.100	mg/L			11/02/23 21:02	1
Chemical Oxygen Demand (SM 5220D LL)	**31.8**		5.00	4.80	mg/L			11/03/23 10:18	1
Halogens, Total Organic (SW846 9020B)	**199**		40.0	14.0	ug/L		11/08/23 12:31	11/08/23 14:49	1
Total Suspended Solids (USGS I-3765-85)	**94.0**		15.0	5.10	mg/L			11/01/23 13:43	1

Definitions/Glossary

Client: SCS Engineers
Job ID: 310-268505-1
Project/Site: Anderson Excavating Carter Lake C&D

Qualifiers

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-405272/3
Matrix: Water
Analysis Batch: 405272

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00	0.450	mg/L			11/06/23 13:37	1

Lab Sample ID: LCS 310-405272/4
Matrix: Water
Analysis Batch: 405272

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.931		mg/L		99	90 - 110

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 310-405326/1-A
Matrix: Water
Analysis Batch: 405606

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 405326

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.500		0.500	0.0930	mg/L		11/09/23 09:20	11/09/23 16:34	1

Lab Sample ID: LCS 310-405326/2-A
Matrix: Water
Analysis Batch: 405606

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 405326

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	2.00	2.026		mg/L		101	80 - 120

Lab Sample ID: 310-268505-5 DU
Matrix: Water
Analysis Batch: 405606

Client Sample ID: MW-D
Prep Type: Dissolved
Prep Batch: 405326

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Iron	36.4		33.13		mg/L		9	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-404545/1-A
Matrix: Water
Analysis Batch: 405205

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 404545

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		11/02/23 09:50	11/07/23 16:21	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		11/02/23 09:50	11/07/23 16:21	1
Barium	<0.00200		0.00200	0.000640	mg/L		11/02/23 09:50	11/07/23 16:21	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		11/02/23 09:50	11/07/23 16:21	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		11/02/23 09:50	11/07/23 16:21	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		11/02/23 09:50	11/07/23 16:21	1
Copper	<0.00500		0.00500	0.00180	mg/L		11/02/23 09:50	11/07/23 16:21	1
Lead	<0.000500		0.000500	0.000240	mg/L		11/02/23 09:50	11/07/23 16:21	1
Nickel	<0.00500		0.00500	0.00190	mg/L		11/02/23 09:50	11/07/23 16:21	1
Silver	<0.00100		0.00100	0.000500	mg/L		11/02/23 09:50	11/07/23 16:21	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		11/02/23 09:50	11/07/23 16:21	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-404545/1-A
Matrix: Water
Analysis Batch: 405205

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 404545

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<0.0200		0.0200	0.00640	mg/L		11/02/23 09:50	11/07/23 16:21	1

Lab Sample ID: MB 310-404545/1-A
Matrix: Water
Analysis Batch: 405324

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 404545

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.00100		0.00100	0.000260	mg/L		11/02/23 09:50	11/08/23 11:52	1

Lab Sample ID: LCS 310-404545/2-A ^10
Matrix: Water
Analysis Batch: 405205

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 404545

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	2.00	2.266		mg/L		113	80 - 120
Arsenic	2.00	2.116		mg/L		106	80 - 120
Barium	1.00	1.009		mg/L		101	80 - 120
Beryllium	1.00	1.086		mg/L		109	80 - 120
Cadmium	1.00	1.092		mg/L		109	80 - 120
Cobalt	1.00	1.147		mg/L		115	80 - 120
Copper	2.00	2.234		mg/L		112	80 - 120
Lead	2.00	2.138		mg/L		107	80 - 120
Nickel	2.00	2.181		mg/L		109	80 - 120
Silver	0.100	0.1126		mg/L		113	80 - 120
Vanadium	1.00	0.9705		mg/L		97	80 - 120
Zinc	2.00	1.961		mg/L		98	80 - 120

Lab Sample ID: LCS 310-404545/2-A ^10
Matrix: Water
Analysis Batch: 405324

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 404545

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Thallium	2.00	1.599		mg/L		80	80 - 120

Lab Sample ID: 310-268505-1 MS
Matrix: Water
Analysis Batch: 405205

Client Sample ID: MW-1R
Prep Type: Total/NA
Prep Batch: 404545

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<0.00200	F1	2.00	2.326		mg/L		116	75 - 125
Arsenic	0.0671	F1	2.00	2.147		mg/L		104	75 - 125
Barium	0.0885	F1	1.00	1.075		mg/L		99	75 - 125
Beryllium	<0.00100	F1	1.00	1.038		mg/L		104	75 - 125
Cadmium	<0.000200	F1	1.00	1.047		mg/L		105	75 - 125
Cobalt	0.00434	F1	1.00	1.091		mg/L		109	75 - 125
Copper	<0.00500	F1	2.00	2.138		mg/L		107	75 - 125
Lead	0.000349	J F1	2.00	2.071		mg/L		104	75 - 125
Nickel	0.00533	F1	2.00	2.075		mg/L		104	75 - 125
Silver	<0.00100	F1	0.100	0.1068		mg/L		107	75 - 125
Vanadium	<0.00500	F1	1.00	0.9529		mg/L		95	75 - 125

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-268505-1 MS
Matrix: Water
Analysis Batch: 405205

Client Sample ID: MW-1R
Prep Type: Total/NA
Prep Batch: 404545

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Zinc	<0.0200	F1	2.00	1.894		mg/L		95	75 - 125

Lab Sample ID: 310-268505-1 MS
Matrix: Water
Analysis Batch: 405324

Client Sample ID: MW-1R
Prep Type: Total/NA
Prep Batch: 404545

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Thallium	<0.0100	F1 *-	2.00	1.468	F1	mg/L		73	75 - 125

Lab Sample ID: 310-268505-1 MSD
Matrix: Water
Analysis Batch: 405205

Client Sample ID: MW-1R
Prep Type: Total/NA
Prep Batch: 404545

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	<0.00200	F1	2.00	2.178		mg/L		109	75 - 125	7	20
Arsenic	0.0671	F1	2.00	2.032		mg/L		98	75 - 125	5	20
Barium	0.0885	F1	1.00	1.019		mg/L		93	75 - 125	5	20
Beryllium	<0.00100	F1	1.00	0.9645		mg/L		96	75 - 125	7	20
Cadmium	<0.000200	F1	1.00	0.9849		mg/L		98	75 - 125	6	20
Cobalt	0.00434	F1	1.00	1.043		mg/L		104	75 - 125	5	20
Copper	<0.00500	F1	2.00	1.995		mg/L		100	75 - 125	7	20
Lead	0.000349	J F1	2.00	1.912		mg/L		96	75 - 125	8	20
Nickel	0.00533	F1	2.00	1.963		mg/L		98	75 - 125	6	20
Silver	<0.00100	F1	0.100	0.1040		mg/L		104	75 - 125	3	20
Vanadium	<0.00500	F1	1.00	0.9026		mg/L		90	75 - 125	5	20
Zinc	<0.0200	F1	2.00	1.792		mg/L		90	75 - 125	6	20

Lab Sample ID: 310-268505-1 MSD
Matrix: Water
Analysis Batch: 405324

Client Sample ID: MW-1R
Prep Type: Total/NA
Prep Batch: 404545

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Thallium	<0.0100	F1 *-	2.00	1.440	F1	mg/L		72	75 - 125	2	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 310-404699/71
Matrix: Water
Analysis Batch: 404699

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.200		0.200	0.100	mg/L			11/02/23 20:57	1

Lab Sample ID: LCS 310-404699/72
Matrix: Water
Analysis Batch: 404699

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	8.55	8.542		mg/L		100	90 - 110

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: 310-268505-1 MS
Matrix: Water
Analysis Batch: 404699

Client Sample ID: MW-1R
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	1.92	F1	1.00	2.477	F1	mg/L		56	90 - 110

Lab Sample ID: 310-268505-1 MSD
Matrix: Water
Analysis Batch: 404699

Client Sample ID: MW-1R
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	1.92	F1	1.00	2.422	F1	mg/L		50	90 - 110	2	10

Method: 5220D LL - COD

Lab Sample ID: MB 310-404793/60
Matrix: Water
Analysis Batch: 404793

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<5.00		5.00	4.80	mg/L			11/03/23 10:18	1

Lab Sample ID: LCS 310-404793/63
Matrix: Water
Analysis Batch: 404793

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	122.9		mg/L		98	85 - 115

Method: 9020B - Organic Halides, Total (TOX)

Lab Sample ID: MB 680-807246/1-A
Matrix: Water
Analysis Batch: 807251

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 807246

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	<40.0		40.0	14.0	ug/L		11/08/23 07:42	11/08/23 08:53	1

Lab Sample ID: LCS 680-807246/2-A
Matrix: Water
Analysis Batch: 807251

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 807246

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Halogens, Total Organic	400	359.6		ug/L		90	60 - 140

Lab Sample ID: MB 680-807371/1-A
Matrix: Water
Analysis Batch: 807387

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 807371

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	<40.0		40.0	14.0	ug/L		11/08/23 12:31	11/08/23 13:29	1

Method: 9020B - Organic Halides, Total (TOX) (Continued)

Lab Sample ID: LCS 680-807371/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 807387
Prep Batch: 807371

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Halogens, Total Organic			400	373.6		ug/L		93	60 - 140		

Lab Sample ID: 310-268505-5 MS
Client Sample ID: MW-D
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 807387
Prep Batch: 807371

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Halogens, Total Organic	199		400	602.9		ug/L		101	60 - 140		

Lab Sample ID: 310-268505-5 MSD
Client Sample ID: MW-D
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 807387
Prep Batch: 807371

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Halogens, Total Organic	199		400	537.9		ug/L		85	60 - 140	11	40

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-404514/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 404514

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	1.70	mg/L			11/01/23 13:43	1

Lab Sample ID: LCS 310-404514/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 404514

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	111.0		mg/L		111	75 - 116		

HPLC/IC

Analysis Batch: 405272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-268505-1	MW-1R	Total/NA	Water	9056A	
310-268505-2	MW-4	Total/NA	Water	9056A	
310-268505-3	MW-6	Total/NA	Water	9056A	
310-268505-4	MW-7R2	Total/NA	Water	9056A	
310-268505-5	MW-D	Total/NA	Water	9056A	
MB 310-405272/3	Method Blank	Total/NA	Water	9056A	
LCS 310-405272/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 404545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-268505-1	MW-1R	Total/NA	Water	3005A	
310-268505-2	MW-4	Total/NA	Water	3005A	
310-268505-3	MW-6	Total/NA	Water	3005A	
310-268505-4	MW-7R2	Total/NA	Water	3005A	
310-268505-5	MW-D	Total/NA	Water	3005A	
MB 310-404545/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-404545/2-A ^10	Lab Control Sample	Total/NA	Water	3005A	
310-268505-1 MS	MW-1R	Total/NA	Water	3005A	
310-268505-1 MSD	MW-1R	Total/NA	Water	3005A	

Analysis Batch: 405205

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-268505-1	MW-1R	Total/NA	Water	6020B	404545
MB 310-404545/1-A	Method Blank	Total/NA	Water	6020B	404545
LCS 310-404545/2-A ^10	Lab Control Sample	Total/NA	Water	6020B	404545
310-268505-1 MS	MW-1R	Total/NA	Water	6020B	404545
310-268505-1 MSD	MW-1R	Total/NA	Water	6020B	404545

Analysis Batch: 405324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-268505-2	MW-4	Total/NA	Water	6020B	404545
310-268505-3	MW-6	Total/NA	Water	6020B	404545
310-268505-4	MW-7R2	Total/NA	Water	6020B	404545
310-268505-5	MW-D	Total/NA	Water	6020B	404545
MB 310-404545/1-A	Method Blank	Total/NA	Water	6020B	404545
LCS 310-404545/2-A ^10	Lab Control Sample	Total/NA	Water	6020B	404545
310-268505-1 MS	MW-1R	Total/NA	Water	6020B	404545
310-268505-1 MSD	MW-1R	Total/NA	Water	6020B	404545

Prep Batch: 405326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-268505-1	MW-1R	Dissolved	Water	3005A	
310-268505-2	MW-4	Dissolved	Water	3005A	
310-268505-3	MW-6	Dissolved	Water	3005A	
310-268505-4	MW-7R2	Dissolved	Water	3005A	
310-268505-5	MW-D	Dissolved	Water	3005A	
MB 310-405326/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-405326/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-268505-5 DU	MW-D	Dissolved	Water	3005A	

QC Association Summary

Client: SCS Engineers
Job ID: 310-268505-1
Project/Site: Anderson Excavating Carter Lake C&D

Metals

Analysis Batch: 405606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-268505-1	MW-1R	Dissolved	Water	6010D	405326
310-268505-2	MW-4	Dissolved	Water	6010D	405326
310-268505-3	MW-6	Dissolved	Water	6010D	405326
310-268505-4	MW-7R2	Dissolved	Water	6010D	405326
310-268505-5	MW-D	Dissolved	Water	6010D	405326
MB 310-405326/1-A	Method Blank	Total/NA	Water	6010D	405326
LCS 310-405326/2-A	Lab Control Sample	Total/NA	Water	6010D	405326
310-268505-5 DU	MW-D	Dissolved	Water	6010D	405326

General Chemistry

Analysis Batch: 404514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-268505-1	MW-1R	Total/NA	Water	I-3765-85	
310-268505-2	MW-4	Total/NA	Water	I-3765-85	
310-268505-3	MW-6	Total/NA	Water	I-3765-85	
310-268505-4	MW-7R2	Total/NA	Water	I-3765-85	
310-268505-5	MW-D	Total/NA	Water	I-3765-85	
MB 310-404514/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-404514/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 404699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-268505-1	MW-1R	Total/NA	Water	350.1	
310-268505-2	MW-4	Total/NA	Water	350.1	
310-268505-3	MW-6	Total/NA	Water	350.1	
310-268505-4	MW-7R2	Total/NA	Water	350.1	
310-268505-5	MW-D	Total/NA	Water	350.1	
MB 310-404699/71	Method Blank	Total/NA	Water	350.1	
LCS 310-404699/72	Lab Control Sample	Total/NA	Water	350.1	
310-268505-1 MS	MW-1R	Total/NA	Water	350.1	
310-268505-1 MSD	MW-1R	Total/NA	Water	350.1	

Analysis Batch: 404793

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-268505-1	MW-1R	Total/NA	Water	5220D LL	
310-268505-2	MW-4	Total/NA	Water	5220D LL	
310-268505-3	MW-6	Total/NA	Water	5220D LL	
310-268505-4	MW-7R2	Total/NA	Water	5220D LL	
310-268505-5	MW-D	Total/NA	Water	5220D LL	
MB 310-404793/60	Method Blank	Total/NA	Water	5220D LL	
LCS 310-404793/63	Lab Control Sample	Total/NA	Water	5220D LL	

Prep Batch: 807246

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-268505-3	MW-6	Total/NA	Water	Carbon Trap	
MB 680-807246/1-A	Method Blank	Total/NA	Water	Carbon Trap	
LCS 680-807246/2-A	Lab Control Sample	Total/NA	Water	Carbon Trap	

QC Association Summary

Client: SCS Engineers
Job ID: 310-268505-1
Project/Site: Anderson Excavating Carter Lake C&D

General Chemistry

Analysis Batch: 807251

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-268505-3	MW-6	Total/NA	Water	9020B	807246
MB 680-807246/1-A	Method Blank	Total/NA	Water	9020B	807246
LCS 680-807246/2-A	Lab Control Sample	Total/NA	Water	9020B	807246

Prep Batch: 807371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-268505-1	MW-1R	Total/NA	Water	Carbon Trap	
310-268505-2	MW-4	Total/NA	Water	Carbon Trap	
310-268505-4	MW-7R2	Total/NA	Water	Carbon Trap	
310-268505-5	MW-D	Total/NA	Water	Carbon Trap	
MB 680-807371/1-A	Method Blank	Total/NA	Water	Carbon Trap	
LCS 680-807371/2-A	Lab Control Sample	Total/NA	Water	Carbon Trap	
310-268505-5 MS	MW-D	Total/NA	Water	Carbon Trap	
310-268505-5 MSD	MW-D	Total/NA	Water	Carbon Trap	

Analysis Batch: 807387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-268505-1	MW-1R	Total/NA	Water	9020B	807371
310-268505-2	MW-4	Total/NA	Water	9020B	807371
310-268505-4	MW-7R2	Total/NA	Water	9020B	807371
310-268505-5	MW-D	Total/NA	Water	9020B	807371
MB 680-807371/1-A	Method Blank	Total/NA	Water	9020B	807371
LCS 680-807371/2-A	Lab Control Sample	Total/NA	Water	9020B	807371
310-268505-5 MS	MW-D	Total/NA	Water	9020B	807371
310-268505-5 MSD	MW-D	Total/NA	Water	9020B	807371

Lab Chronicle

Client: SCS Engineers
Job ID: 310-268505-1
Project/Site: Anderson Excavating Carter Lake C&D

Client Sample ID: MW-1R
Lab Sample ID: 310-268505-1
Date Collected: 10/26/23 11:04
Matrix: Water
Date Received: 10/27/23 16:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		10	405272	QTZ5	EET CF	11/06/23 19:00
Dissolved	Prep	3005A			405326	DHM5	EET CF	11/09/23 09:20
Dissolved	Analysis	6010D		1	405606	ZRI4	EET CF	11/09/23 19:02
Total/NA	Prep	3005A			404545	KCK5	EET CF	11/02/23 09:50
Total/NA	Analysis	6020B		1	405205	A6US	EET CF	11/07/23 16:25
Total/NA	Analysis	350.1		1	404699	ZJX4	EET CF	11/02/23 20:58
Total/NA	Analysis	5220D LL		1	404793	ENB7	EET CF	11/03/23 10:18
Total/NA	Prep	Carbon Trap			807371	CLJ	EET SAV	11/08/23 12:31
Total/NA	Analysis	9020B		1	807387	CLJ	EET SAV	11/09/23 09:24
Total/NA	Analysis	I-3765-85		1	404514	DGU1	EET CF	11/01/23 13:43

Client Sample ID: MW-4
Lab Sample ID: 310-268505-2
Date Collected: 10/26/23 12:49
Matrix: Water
Date Received: 10/27/23 16:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	405272	QTZ5	EET CF	11/06/23 19:14
Dissolved	Prep	3005A			405326	DHM5	EET CF	11/09/23 09:20
Dissolved	Analysis	6010D		1	405606	ZRI4	EET CF	11/09/23 19:08
Total/NA	Prep	3005A			404545	KCK5	EET CF	11/02/23 09:50
Total/NA	Analysis	6020B		1	405324	A6US	EET CF	11/08/23 12:24
Total/NA	Analysis	350.1		1	404699	ZJX4	EET CF	11/02/23 21:00
Total/NA	Analysis	5220D LL		1	404793	ENB7	EET CF	11/03/23 10:18
Total/NA	Prep	Carbon Trap			807371	CLJ	EET SAV	11/08/23 12:31
Total/NA	Analysis	9020B		1	807387	CLJ	EET SAV	11/09/23 10:57
Total/NA	Analysis	I-3765-85		1	404514	DGU1	EET CF	11/01/23 13:43

Client Sample ID: MW-6
Lab Sample ID: 310-268505-3
Date Collected: 10/26/23 13:27
Matrix: Water
Date Received: 10/27/23 16:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	405272	QTZ5	EET CF	11/06/23 19:28
Dissolved	Prep	3005A			405326	DHM5	EET CF	11/09/23 09:20
Dissolved	Analysis	6010D		1	405606	ZRI4	EET CF	11/09/23 19:10
Total/NA	Prep	3005A			404545	KCK5	EET CF	11/02/23 09:50
Total/NA	Analysis	6020B		1	405324	A6US	EET CF	11/08/23 12:13
Total/NA	Analysis	350.1		1	404699	ZJX4	EET CF	11/02/23 21:02
Total/NA	Analysis	5220D LL		1	404793	ENB7	EET CF	11/03/23 10:18
Total/NA	Prep	Carbon Trap			807246	CLJ	EET SAV	11/08/23 07:42
Total/NA	Analysis	9020B		1	807251	CLJ	EET SAV	11/08/23 18:01
Total/NA	Analysis	I-3765-85		1	404514	DGU1	EET CF	11/01/23 13:43

Lab Chronicle

Client: SCS Engineers
Job ID: 310-268505-1
Project/Site: Anderson Excavating Carter Lake C&D

Client Sample ID: MW-7R2
Lab Sample ID: 310-268505-4
Date Collected: 10/26/23 11:47
Matrix: Water
Date Received: 10/27/23 16:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	405272	QTZ5	EET CF	11/06/23 19:43
Dissolved	Prep	3005A			405326	DHM5	EET CF	11/09/23 09:20
Dissolved	Analysis	6010D		1	405606	ZRI4	EET CF	11/09/23 19:13
Total/NA	Prep	3005A			404545	KCK5	EET CF	11/02/23 09:50
Total/NA	Analysis	6020B		1	405324	A6US	EET CF	11/08/23 12:15
Total/NA	Analysis	350.1		1	404699	ZJX4	EET CF	11/02/23 21:02
Total/NA	Analysis	5220D LL		1	404793	ENB7	EET CF	11/03/23 10:18
Total/NA	Prep	Carbon Trap			807371	CLJ	EET SAV	11/08/23 12:31
Total/NA	Analysis	9020B		1	807387	CLJ	EET SAV	11/09/23 08:31
Total/NA	Analysis	I-3765-85		1	404514	DGU1	EET CF	11/01/23 13:43

Client Sample ID: MW-D
Lab Sample ID: 310-268505-5
Date Collected: 10/26/23 12:49
Matrix: Water
Date Received: 10/27/23 16:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		10	405272	QTZ5	EET CF	11/06/23 19:57
Dissolved	Prep	3005A			405326	DHM5	EET CF	11/09/23 09:20
Dissolved	Analysis	6010D		1	405606	ZRI4	EET CF	11/09/23 19:15
Total/NA	Prep	3005A			404545	KCK5	EET CF	11/02/23 09:50
Total/NA	Analysis	6020B		1	405324	A6US	EET CF	11/08/23 12:17
Total/NA	Analysis	350.1		1	404699	ZJX4	EET CF	11/02/23 21:02
Total/NA	Analysis	5220D LL		1	404793	ENB7	EET CF	11/03/23 10:18
Total/NA	Prep	Carbon Trap			807371	CLJ	EET SAV	11/08/23 12:31
Total/NA	Analysis	9020B		1	807387	CLJ	EET SAV	11/08/23 14:49
Total/NA	Analysis	I-3765-85		1	404514	DGU1	EET CF	11/01/23 13:43

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: SCS Engineers
Job ID: 310-268505-1
Project/Site: Anderson Excavating Carter Lake C&D

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-23

Laboratory: Eurofins Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
	AFCEE	SAVLAB	
Alabama	State	41450	06-30-24
ANAB	Dept. of Defense ELAP	L2463	09-22-24
Arkansas DEQ	State	19-015-0	02-01-24
California	State	2939	06-30-24
Florida	NELAP	E87052	06-30-24
Georgia	State	E87052	06-30-24
Georgia (DW)	State	803	06-30-24
Guam	State	19-007R	04-17-24
Hawaii	State	<cert No.>	06-30-24
Illinois	NELAP	200022	11-30-23
Indiana	State	C-GA-02	06-30-24
Iowa	State	353	07-01-25
Kentucky (UST)	State	NA	06-30-24
Louisiana	NELAP	30690	06-30-24
Louisiana (All)	NELAP	30690	06-30-24
Louisiana (DW)	State	LA009	12-31-23
Maine	State	GA00006	09-25-24
Maryland	State	250	12-31-23
Massachusetts	State	M-GA006	06-30-24
Michigan	State	9925	06-30-24
Mississippi	State	<cert No.>	06-30-24
Nebraska	State	NE-OS-7-04	06-30-24
New Jersey	NELAP	GA769	06-30-24
New Mexico	State	GA00006	06-30-24
North Carolina (DW)	State	13701	07-31-24
North Carolina (WW/SW)	State	269	12-31-23
Pennsylvania	NELAP	68-00474	06-30-24
Puerto Rico	State	GA00006	01-01-24
South Carolina	State	98001	06-30-24
Tennessee	State	TN02961	06-30-24
Texas	NELAP	T1047004185	11-30-23
Texas	TCEQ Water Supply	T104704185	06-30-24
USDA	US Federal Programs	P330-18-00313	09-03-24
Virginia	NELAP	460161	06-14-24
Wyoming	State	8TMS-L	06-30-24

Method Summary

Client: SCS Engineers
Job ID: 310-268505-1
Project/Site: Anderson Excavating Carter Lake C&D

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6010D	Metals (ICP)	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
350.1	Nitrogen, Ammonia	EPA	EET CF
5220D LL	COD	SM	EET CF
9020B	Organic Halides, Total (TOX)	SW846	EET SAV
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
Carbon Trap	Carbon Trap Preparation	EPA-17	EET SAV

Protocol References:

EPA = US Environmental Protection Agency

EPA-17 = "Method 1650, Revision A, Adsorbable Organic Halides By Adsorption And Colormetric Titration," EPA, February 1992

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

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310-268505 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 10/27/23 TIME 1635 | Received By: Emr

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 1 of 2

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: P | Correction Factor (°C): 0

Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.8 | Corrected Temp (°C): 0.8

Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 10/27/23 | TIME 1635 | Received By: [illegible]

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 2 of 2

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: P | Correction Factor (°C): 0

Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.4 | Corrected Temp (°C): 1.4

Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

TestAmerica Des Moines SC
214

eurofins | Environment Testing

Client Information	Sampler: Konner Roth	Lab PM: Liechti, Meredith L	Carrier Tracking No(s):	COC No: 310-86211-12533.1
Client Contact: Jamie Lane	Phone:	E-Mail: meredith liechti@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
Company: SCS Engineers	PWSID:			Job #:

Address: 1690 All State Court Suite 100	Due Date Requested.
City: West Des Moines	TAT Requested (days):
State, Zip: IA, 50265	Compliance Project: Δ Yes Δ No
Phone:	PO #: Purchase Order not required
Email:	WO #:
Project Name: Anderson Excavating Carter Lake C&D	Project #: 31004207
Site:	SSOW#:

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers	Special Instructions/Note:
			Preservation Code:					
MW-1R	10/26/23	1104	G	Water				
MW-3				Water				
MW-4	10/26/23	1249	G	Water				
MW-5				Water				
MW-6	10/26/23	1322	G	Water				
MW-7R2	10/26/23	1147	G	Water				
MW-D	10/26/23	1249	G	Water				

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I, II, III, IV, Other (specify)

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	Konner Roth	10/27/23 0735	SCS		10-27-23 0735	LT
2		10-27-23 0800	LT			
3				FM	10/27/23 1635	

Custody Seals Intact: Δ Yes Δ No | Custody Seal No

Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Liechti, Meredith L	Carrier Tracking No(s):	COC No: 310-66958.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: meredith.liechti@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing Southeast,		Accreditations Required (See note): State Program - Iowa		Job #: 310-268505-1
Address: 5102 LaRoche Avenue, ,	Due Date Requested: 11/9/2023			
City: Savannah	TAT Requested (days):			
State, Zip: GA, 31404				
Phone: 912-354-7858(Tel) 912-352-0165(Fax)	PO #:			
Email:	WO #:			
Project Name: Anderson Excavating Carter Lake C&D	Project #: 31004207			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9020B/Carbon_Trap (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-1R (310-268505-1)	10/26/23	11:04 Central		Water			X	1	
MW-4 (310-268505-2)	10/26/23	12:49 Central		Water			X	1	
MW-6 (310-268505-3)	10/26/23	13:27 Central		Water			X	1	
MW-7R2 (310-268505-4)	10/26/23	11:47 Central		Water			X	1	
MW-D (310-268505-5)	10/26/23	12:49 Central		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) — Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	11/1/23 1250		TH	11-02-23	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 10:38	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.6 -0.9

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-268505-1

Login Number: 268505

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Homolar, Dana J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-268505-1

Login Number: 268505
List Number: 2
Creator: Harley, Tynisha

List Source: Eurofins Savannah
List Creation: 11/02/23 01:36 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix B-2

Data Validation

Completed by: Nathan Ohrt
Date of Sampling: 4/19/2023
Lab Report Date: 5/5/2023
Site Name: Anderson Excavating Carter Lake C&D Landfill
Project Type: 1st 2023 Semi-Annual Sampling
Lab Report Number: 310-254024

	OK	NO	N/A	NOTES
Sample Collection and Sample Handling				
Chain of Custody	X			
Temperature	X			
Preservation		X		Samples MW-4, MW-6, and MW-7R2 were received with insufficient preservation; the samples were preserved to the appropriate pH in the laboratory.
Condition	X			
Case Narrative	X			
Holding Times	X			
Analytical Sensitivity and Blanks				
Method Blank Detections	X			No detections.
Trip Blank Detections			X	
Accuracy				
ICV/CCV	X			
LCS/LCSD	X			
MS/MSD	X			
Surrogates (organics only)	X			
Precision				
QA/QC Sample RPDs	X			
Field Duplicates	X			Sample MW-1R and duplicate sample MW-D had < 50% RPD for analyzed parameters with the exception of cobalt (103%).

Completed by: Nathan Ohrt
Date of Sampling: 10/26/2023
Lab Report Date: 11/10/2023
Site Name: Anderson Excavating Carter Lake C&D Landfill
Project Type: 2nd 2023 Semi-Annual Sampling
Lab Report Number: 310-268505

	OK	NO	N/A	NOTES
Sample Collection and Sample Handling				
Chain of Custody	X			
Temperature	X			
Preservation		X		Samples MW-6, MW-7R2, and MW-D were received with insufficient preservation; the samples were preserved to the appropriate pH in the laboratory.
Condition	X			
Case Narrative	X			
Holding Times	X			
Analytical Sensitivity and Blanks				
Method Blank Detections	X			No detections.
Trip Blank Detections			X	
Accuracy				
ICV/CCV	X			
LCS/LCSD	X			
MS/MSD	X			
Surrogates (organics only)	X			
Precision				
QA/QC Sample RPDs		X		Breakthrough exceeded 10% for samples MW-1R, MW-4, MW-6, MW-7R2, and MW-D.
Field Duplicates	X			Sample MW-4 and duplicate sample MW-D had <50% RPD for analyzed parameters.

Appendix C

Summary of Groundwater Chemistry

SCS ENGINEERS

Summary of Groundwater Chemistry

Carter Lake Construction and Demolition Landfill (Closed) - 78-SDP-02-80C

Total Metals Constituents	Sample Date	MW-4 UPG	MW-6 UPG	MW-7R2 UPG	MW-1R DNG	MW-3 DNG	MW-5 DNG
Antimony, mg/L (CAS NO - 7440-36-0)	10/13/2009	N/A	N/A	< 0.006	**0.0066**	< 0.006	< 0.006
	2/17/2015	0.000176*	< 0.001	N/A	N/A	N/A	**0.00185**
	6/16/2015	< 0.001	< 0.001	N/A	N/A	0.000402*	**0.00138**
	10/27/2015	< 0.001	< 0.001	N/A	N/A	0.000293*	**0.00161**
	5/4/2016	< 0.001	< 0.001	0.000343*	< 0.001	0.000248*	**0.00388**
	10/4/2016	< 0.001	< 0.001	0.000545*	< 0.001	< 0.001	0.000842*
	4/10/2017	< 0.001	< 0.001	0.000411*	< 0.001	0.000452*	0.000391*
	10/26/2017	< 0.001	< 0.001	0.00037*	< 0.001	0.000285*	0.000556*
	10/2/2018	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
	4/9/2019	< 0.001	< 0.001	< 0.001	< 0.001	0.000919*	**0.0092**
	10/7/2019	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	**0.00197**
	5/28/2020	< 0.001	< 0.001	0.000801*	< 0.001	< 0.001	**0.00318**
	5/28/2020	N/A	N/A	N/A	N/A	N/A	**0.00294**
	10/14/2020	< 0.001	< 0.001	**0.00157**	< 0.001	0.000573*	**0.00192**
	10/14/2020	N/A	< 0.001	N/A	N/A	N/A	N/A
	5/5/2021	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	**0.00246**
	5/5/2021	N/A	N/A	N/A	N/A	N/A	**0.00242**
	10/26/2021	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.00129*
	10/26/2021	N/A	< 0.002	N/A	N/A	N/A	N/A
	4/7/2022	< 0.002	< 0.008	< 0.008	< 0.008	N/A	N/A
	4/7/2022	N/A	N/A	N/A	< 0.008	N/A	N/A
	10/20/2022	< 0.002	< 0.002	N/A	< 0.002	< 0.002	< 0.002
	10/20/2022	N/A	N/A	N/A	< 0.002	N/A	N/A
	4/19/2023	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A
	4/19/2023	N/A	N/A	N/A	< 0.002	N/A	N/A
	10/26/2023	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A
	10/26/2023	< 0.002	N/A	N/A	N/A	N/A	N/A
Arsenic, mg/L (CAS NO - 7440-38-2)	2/17/2015	**0.0369**	**0.0675**	N/A	N/A	N/A	**0.0275**
	6/16/2015	**0.0389**	**0.0659**	N/A	N/A	**0.00753**	**0.017**
	10/27/2015	**0.0504**	**0.0519**	N/A	N/A	**0.00739**	**0.0116**
	5/4/2016	**0.00846**	**0.068**	**0.00296**	**0.0486**	**0.00516**	**0.0457**
	10/4/2016	**0.0296**	**0.0675**	**0.00443**	**0.0734**	**0.00429**	**0.078**
	4/10/2017	**0.0294**	**0.0629**	**0.00452**	**0.0573**	**0.00425**	**0.0877**
	10/26/2017	0.00147*	**0.0617**	**0.00412**	**0.074**	**0.00649**	**0.041**
	10/2/2018	**0.0192**	**0.0597**	**0.0787**	**0.0661**	**0.00639**	**0.074**
	4/9/2019	**0.0436**	**0.00341**	0.00168*	**0.0668**	0.0016*	**0.00297**
	10/7/2019	**0.0388**	**0.0712**	**0.0248**	**0.0668**	**0.00208**	**0.0155**
	5/28/2020	**0.00391**	0.00132*	**0.00284**	**0.0573**	**0.00322**	**0.00325**
	5/28/2020	N/A	N/A	N/A	N/A	N/A	**0.0085**
	10/14/2020	**0.0022**	**0.0165**	**0.013**	**0.0839**	**0.00739**	**0.0172**
	10/14/2020	N/A	**0.0491**	N/A	N/A	N/A	N/A
	5/5/2021	**0.00988**	**0.0437**	**0.0175**	**0.0667**	**0.00414**	**0.00852**
	5/5/2021	N/A	N/A	N/A	N/A	N/A	**0.0173**
	10/26/2021	**0.0266**	**0.0446**	**0.0443**	**0.0743**	**0.00486**	**0.0749**
	10/26/2021	N/A	**0.0524**	N/A	N/A	N/A	N/A
	4/7/2022	**0.00444**	**0.0395**	**0.0951**	**0.0563**	N/A	N/A
	4/7/2022	N/A	N/A	N/A	**0.0521**	N/A	N/A
	10/20/2022	**0.0217**	**0.0572**	N/A	**0.0616**	**0.00242**	**0.0748**
	10/20/2022	N/A	N/A	N/A	**0.0617**	N/A	N/A
	4/19/2023	**0.0464**	**0.069**	**0.11**	**0.0711**	N/A	N/A
	4/19/2023	N/A	N/A	N/A	**0.0744**	N/A	N/A
	10/26/2023	**0.0459**	**0.0483**	**0.194**	**0.0671**	N/A	N/A
	10/26/2023	**0.0491**	N/A	N/A	N/A	N/A	N/A

SCS ENGINEERS

Summary of Groundwater Chemistry

Carter Lake Construction and Demolition Landfill (Closed) - 78-SDP-02-80C

Total Metals Constituents	Sample Date	MW-4 UPG	MW-6 UPG	MW-7R2 UPG	MW-1R DNG	MW-3 DNG	MW-5 DNG
Barium, mg/L (CAS NO - 7440-39-3)	10/13/2009	N/A	N/A	0.541	0.0719	0.105	0.218
	2/17/2015	0.212	2	N/A	N/A	N/A	0.0849
	6/16/2015	0.195	2.27	N/A	N/A	0.0736	0.122
	10/27/2015	0.233	1.94	N/A	N/A	0.112	0.144
	5/4/2016	0.161	1.83	0.92	0.119	0.0679	0.116
	10/4/2016	0.165	2.04	1.04	0.0654	0.0926	0.162
	4/10/2017	0.195	2.13	1	0.0698	0.108	0.139
	10/26/2017	0.0978	2.1	1.04	0.102	0.0992	0.121
	10/2/2018	0.161	1.43	0.81	0.0832	0.13	0.118
	4/9/2019	0.157	0.867	0.729	0.0941	0.0876	0.0461
	10/7/2019	0.164	1.07	1	0.127	0.234	0.0693
	5/28/2020	0.0877	0.716	1.05	0.153	0.137	0.0573
	5/28/2020	N/A	N/A	N/A	N/A	N/A	0.0594
	10/14/2020	0.0888	0.824	1.06	0.0835	0.183	0.0601
	10/14/2020	N/A	1.27	N/A	N/A	N/A	N/A
	5/5/2021	0.11	1.39	0.943	0.093	0.219	0.0592
	5/5/2021	N/A	N/A	N/A	N/A	N/A	0.066
	10/26/2021	0.13	1.3	0.718	0.0943	0.238	0.066
	10/26/2021	N/A	1.38	N/A	N/A	N/A	N/A
	4/7/2022	0.117	1.16	0.622	0.082	N/A	N/A
	4/7/2022	N/A	N/A	N/A	0.0765	N/A	N/A
	10/20/2022	0.161	1.65	N/A	0.076	0.173	0.0604
	10/20/2022	N/A	N/A	N/A	0.083	N/A	N/A
	4/19/2023	0.211	2.15	0.721	0.081	N/A	N/A
	4/19/2023	N/A	N/A	N/A	0.0859	N/A	N/A
	10/26/2023	0.247	1.35	0.786	0.0885	N/A	N/A
	10/26/2023	0.248	N/A	N/A	N/A	N/A	N/A
Beryllium, mg/L (CAS NO - 7440-41-7)	10/13/2009	N/A	N/A	< 0.001	< 0.001	< 0.001	< 0.001
	2/17/2015	0.000059*	< 0.001	N/A	N/A	N/A	0.000052*
	6/16/2015	< 0.001	< 0.001	N/A	N/A	0.000127*	< 0.001
	10/27/2015	< 0.001	< 0.001	N/A	N/A	< 0.001	< 0.001
	5/4/2016	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	10/4/2016	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	4/10/2017	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	10/26/2017	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	10/2/2018	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	4/9/2019	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	10/7/2019	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	5/28/2020	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	5/28/2020	N/A	N/A	N/A	N/A	N/A	< 0.001
	10/14/2020	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	10/14/2020	N/A	< 0.001	N/A	N/A	N/A	N/A
	5/5/2021	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	5/5/2021	N/A	N/A	N/A	N/A	N/A	< 0.001
	10/26/2021	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	10/26/2021	N/A	< 0.001	N/A	N/A	N/A	N/A
	4/7/2022	< 0.001	< 0.004	< 0.004	< 0.004	N/A	N/A
	4/7/2022	N/A	N/A	N/A	< 0.004	N/A	N/A
	10/20/2022	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001
	10/20/2022	N/A	N/A	N/A	< 0.001	N/A	N/A
	4/19/2023	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A
	4/19/2023	N/A	N/A	N/A	< 0.001	N/A	N/A
	10/26/2023	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A
	10/26/2023	< 0.001	N/A	N/A	N/A	N/A	N/A

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Total Metals Constituents	Sample Date	MW-4 UPG	MW-6 UPG	MW-7R2 UPG	MW-1R DNG	MW-3 DNG	MW-5 DNG
Cadmium, mg/L (CAS NO - 7440-43-9)	10/13/2009	N/A	N/A	< 0.0005	< 0.0005	**0.00166**	**0.00702**
	2/17/2015	**0.000578**	< 0.0005	N/A	N/A	N/A	**0.0019**
	6/16/2015	**0.00127**	**0.000677**	N/A	N/A	**0.000597**	**0.000959**
	10/27/2015	0.000322*	**0.00052**	N/A	N/A	0.000496*	**0.00106**
	5/4/2016	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.000117*	**0.000894**
	10/4/2016	0.000078*	< 0.0005	0.000078*	< 0.0005	< 0.0005	0.000444*
	4/10/2017	0.000057*	< 0.0005	< 0.0005	0.000047*	< 0.0005	0.000094*
	10/26/2017	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.000102*	0.000137*
	10/2/2018	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.000251*
	4/9/2019	< 0.0005	0.000162*	< 0.0005	< 0.0005	**0.000691**	**0.00238**
	10/7/2019	< 0.0001	< 0.0001	< 0.0001	< 0.0001	**0.000305**	**0.000915**
	5/28/2020	< 0.0001	0.000088*	< 0.0001	< 0.0001	**0.000161**	**0.000832**
	5/28/2020	N/A	N/A	N/A	N/A	N/A	**0.000805**
	10/14/2020	< 0.0001	**0.000282**	0.000061*	< 0.0001	< 0.0001	**0.00167**
	10/14/2020	N/A	**0.000123**	N/A	N/A	N/A	N/A
	5/5/2021	< 0.0001	0.000078*	< 0.0001	< 0.0001	**0.000352**	**0.000791**
	5/5/2021	N/A	N/A	N/A	N/A	N/A	**0.00119**
	10/26/2021	< 0.0001	0.000058*	0.000052*	< 0.0001	0.000087*	**0.00048**
	10/26/2021	N/A	< 0.0001	N/A	N/A	N/A	N/A
	4/7/2022	< 0.0001	< 0.0004	< 0.0004	< 0.0004	N/A	N/A
	4/7/2022	N/A	N/A	N/A	< 0.0004	N/A	N/A
	10/20/2022	< 0.0001	< 0.0001	N/A	< 0.0001	**0.000174**	**0.000613**
	10/20/2022	N/A	N/A	N/A	< 0.0001	N/A	N/A
	4/19/2023	< 0.0002	< 0.0002	< 0.0002	0.000179*	N/A	N/A
	4/19/2023	N/A	N/A	N/A	< 0.0002	N/A	N/A
	10/26/2023	< 0.0002	< 0.0002	< 0.0002	< 0.0002	N/A	N/A
	10/26/2023	< 0.0002	N/A	N/A	N/A	N/A	N/A
Chromium, mg/L (CAS NO - 7440-47-3)	10/13/2009	N/A	N/A	< 0.02	< 0.02	< 0.02	< 0.02
	2/17/2015	< 0.005	< 0.005	N/A	N/A	N/A	< 0.005
	6/16/2015	< 0.005	< 0.005	N/A	N/A	< 0.005	< 0.005
	10/27/2015	< 0.005	< 0.005	N/A	N/A	< 0.005	< 0.005
	5/4/2016	< 0.005	0.000755*	0.00147*	0.000357*	< 0.005	0.000582*
Cobalt, mg/L (CAS NO - 7440-48-4)	10/13/2009	N/A	N/A	< 0.02	< 0.02	**0.0256**	< 0.02
	2/17/2015	0.00048*	**0.00197**	N/A	N/A	N/A	**0.00594**
	6/16/2015	0.000289*	**0.00244**	N/A	N/A	**0.0111**	**0.00578**
	10/27/2015	0.000374*	**0.00289**	N/A	N/A	**0.0186**	**0.0045**
	5/4/2016	0.000214*	**0.00277**	**0.00144**	**0.0062**	**0.0097**	**0.00314**
	10/4/2016	0.000229*	**0.00284**	**0.00169**	**0.00735**	**0.00937**	**0.00936**
	4/10/2017	0.000274*	**0.00236**	**0.00175**	**0.00704**	**0.0135**	**0.00244**
	10/26/2017	0.000124*	**0.00213**	**0.00156**	**0.00347**	**0.0103**	**0.00318**
	10/2/2018	< 0.001	**0.0018**	**0.0039**	**0.00773**	**0.0172**	**0.00215**
	4/9/2019	0.000202*	**0.00124**	**0.00109**	**0.00646**	**0.00571**	**0.000615**
	10/7/2019	**0.000501**	**0.000598**	**0.00186**	**0.00665**	**0.0158**	**0.00973**
	5/28/2020	0.000283*	**0.000583**	**0.00171**	**0.00598**	**0.0137**	**0.000762**
	5/28/2020	N/A	N/A	N/A	N/A	N/A	**0.00195**
	10/14/2020	0.000227*	**0.000627**	**0.00221**	**0.00576**	**0.0137**	**0.00619**
	10/14/2020	N/A	**0.000558**	N/A	N/A	N/A	N/A
	5/5/2021	0.000271*	**0.000634**	**0.00199**	**0.00468**	**0.0161**	**0.00287**
	5/5/2021	N/A	N/A	N/A	N/A	N/A	**0.00799**
	10/26/2021	0.000474*	**0.00109**	**0.00212**	**0.0076**	**0.0142**	**0.00222**
	10/26/2021	N/A	**0.00109**	N/A	N/A	N/A	N/A
	4/7/2022	0.000479*	0.0011*	**0.00299**	**0.0112**	N/A	N/A
	4/7/2022	N/A	N/A	N/A	**0.0107**	N/A	N/A
	10/20/2022	0.000303*	**0.000965**	N/A	**0.00817**	**0.0112**	**0.00112**
	10/20/2022	N/A	N/A	N/A	**0.00887**	N/A	N/A
	4/19/2023	0.000396*	**0.00223**	**0.00166**	**0.00101**	N/A	N/A
	4/19/2023	N/A	N/A	N/A	**0.00317**	N/A	N/A
	10/26/2023	0.000253*	**0.00238**	**0.00446**	**0.00434**	N/A	N/A
	10/26/2023	0.000235*	N/A	N/A	N/A	N/A	N/A

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Total Metals Constituents	Sample Date	MW-4 UPG	MW-6 UPG	MW-7R2 UPG	MW-1R DNG	MW-3 DNG	MW-5 DNG
Copper, mg/L (CAS NO - 7440-50-8)	10/13/2009	N/A	N/A	< 0.02	< 0.02	< 0.02	**0.162**
	2/17/2015	0.00155*	0.000588*	N/A	N/A	N/A	**0.0713**
	6/16/2015	**0.00214**	**0.00415**	N/A	N/A	**0.0292**	**0.0205**
	10/27/2015	0.00163*	0.00149*	N/A	N/A	**0.0078**	**0.023**
	5/4/2016	< 0.005	< 0.005	< 0.005	< 0.005	0.00166*	**0.0159**
	10/4/2016	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	**0.00734**
	4/10/2017	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
	10/26/2017	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00449*
	10/2/2018	0.000588*	**0.00218**	0.00106*	< 0.002	0.00079*	**0.00622**
	4/9/2019	< 0.005	< 0.005	< 0.005	< 0.005	0.00215*	0.0171*
	10/7/2019	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
	5/28/2020	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	**0.00832**
	5/28/2020	N/A	N/A	N/A	N/A	N/A	**0.0071**
	10/14/2020	< 0.005	0.00311*	0.00312*	< 0.005	< 0.005	**0.00978**
	10/14/2020	N/A	< 0.005	N/A	N/A	N/A	N/A
	5/5/2021	< 0.005	< 0.005	< 0.005	< 0.005	0.00141*	**0.0121**
	5/5/2021	N/A	N/A	N/A	N/A	N/A	**0.0134**
	10/26/2021	< 0.005	< 0.005	0.0018*	< 0.005	< 0.005	0.00389*
	10/26/2021	N/A	< 0.005	N/A	N/A	N/A	N/A
	4/7/2022	< 0.005	< 0.02	< 0.02	< 0.02	N/A	N/A
	4/7/2022	N/A	N/A	N/A	< 0.02	N/A	N/A
	10/20/2022	< 0.005	< 0.005	N/A	< 0.005	< 0.005	< 0.005
	10/20/2022	N/A	N/A	N/A	< 0.005	N/A	N/A
	4/19/2023	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A
	4/19/2023	N/A	N/A	N/A	< 0.005	N/A	N/A
	10/26/2023	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A
	10/26/2023	< 0.005	N/A	N/A	N/A	N/A	N/A
Lead, mg/L (CAS NO - 7439-92-1)	10/13/2009	N/A	N/A	< 0.004	**0.00641**	**0.0266**	**0.0356**
	2/17/2015	**0.00198**	**0.000852**	N/A	N/A	N/A	**0.0166**
	6/16/2015	0.000404*	**0.0029**	N/A	N/A	**0.0107**	**0.00639**
	10/27/2015	**0.00174**	**0.00171**	N/A	N/A	**0.00717**	**0.00491**
	5/4/2016	< 0.0005	< 0.0005	**0.00163**	0.000289*	**0.000518**	**0.00169**
	10/4/2016	0.000266*	0.000349*	**0.0158**	**0.00114**	< 0.0005	**0.00186**
	4/10/2017	< 0.0005	< 0.0005	**0.00617**	**0.000889**	< 0.0005	**0.000538**
	10/26/2017	< 0.0005	< 0.0005	< 0.0005	< 0.0005	**0.00063**	0.000491*
	10/2/2018	< 0.0005	**0.000628**	0.000369*	< 0.0005	**0.000652**	**0.00351**
	4/9/2019	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.000373*	**0.00151**
	10/7/2019	< 0.0005	< 0.0005	0.000441*	< 0.0005	**0.00146**	0.000413*
	5/28/2020	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
	5/28/2020	N/A	N/A	N/A	N/A	N/A	0.000453*
	10/14/2020	< 0.0005	0.00042*	**0.00594**	< 0.0005	**0.000802**	**0.000559**
	10/14/2020	N/A	0.00036*	N/A	N/A	N/A	N/A
	5/5/2021	< 0.0005	0.00048*	0.000476*	0.000334*	**0.00112**	**0.000566**
	5/5/2021	N/A	N/A	N/A	N/A	N/A	**0.0011**
	10/26/2021	**0.00157**	**0.00188**	**0.00465**	**0.00132**	**0.00158**	**0.00289**
	10/26/2021	N/A	**0.00159**	N/A	N/A	N/A	N/A
	4/7/2022	< 0.0005	< 0.002	**0.00352**	< 0.002	N/A	N/A
	4/7/2022	N/A	N/A	N/A	< 0.002	N/A	N/A
	10/20/2022	< 0.0005	< 0.0005	N/A	< 0.0005	< 0.0005	**0.000577**
	10/20/2022	N/A	N/A	N/A	< 0.0005	N/A	N/A
	4/19/2023	< 0.0005	< 0.0005	**0.0017**	0.00049*	N/A	N/A
	4/19/2023	N/A	N/A	N/A	0.000338*	N/A	N/A
	10/26/2023	< 0.0005	< 0.0005	0.000468*	0.000349*	N/A	N/A
	10/26/2023	< 0.0005	N/A	N/A	N/A	N/A	N/A

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Total Metals Constituents	Sample Date	MW-4 UPG	MW-6 UPG	MW-7R2 UPG	MW-1R DNG	MW-3 DNG	MW-5 DNG
Nickel, mg/L (CAS NO - 7440-02-0)	10/13/2009	N/A	N/A	< 0.05	< 0.05	**0.0646**	< 0.05
	2/17/2015	0.00124*	0.00216*	N/A	N/A	N/A	**0.00989**
	6/16/2015	< 0.005	0.000772*	N/A	N/A	**0.023**	**0.00981**
	10/27/2015	0.00093*	0.00354*	N/A	N/A	**0.0313**	**0.0205**
	5/4/2016	< 0.005	0.00254*	< 0.005	0.00493*	**0.0201**	**0.0147**
	10/4/2016	< 0.005	0.00259*	0.00442*	**0.00596**	**0.0244**	**0.00953**
	4/10/2017	< 0.005	0.0025*	0.00398*	**0.00614**	**0.0341**	0.00335*
	10/26/2017	< 0.005	0.00207*	0.00159*	0.00344*	**0.0255**	**0.00624**
	10/2/2018	< 0.002	0.00149*	**0.00377**	**0.00823**	**0.0299**	**0.00579**
	4/9/2019	< 0.005	< 0.005	0.00175*	**0.00674**	**0.0167**	**0.024**
	10/7/2019	< 0.005	< 0.005	0.00214*	**0.00765**	**0.029**	**0.0204**
	5/28/2020	< 0.005	< 0.005	0.00218*	**0.00729**	**0.0197**	**0.0166**
	5/28/2020	N/A	N/A	N/A	N/A	N/A	**0.0154**
	10/14/2020	< 0.005	< 0.005	0.00351*	**0.00749**	**0.0244**	**0.0164**
	10/14/2020	N/A	< 0.005	N/A	N/A	N/A	N/A
	5/5/2021	< 0.005	< 0.005	0.00216*	**0.00681**	**0.0391**	**0.0104**
	5/5/2021	N/A	N/A	N/A	N/A	N/A	**0.0135**
	10/26/2021	0.0021*	< 0.005	0.00372*	**0.0108**	**0.0312**	**0.00817**
	10/26/2021	N/A	< 0.005	N/A	N/A	N/A	N/A
	4/7/2022	**0.00757**	0.0174*	0.0179*	**0.0248**	N/A	N/A
	4/7/2022	N/A	N/A	N/A	**0.0201**	N/A	N/A
	10/20/2022	< 0.005	< 0.005	N/A	**0.00763**	**0.023**	< 0.005
	10/20/2022	N/A	N/A	N/A	**0.00872**	N/A	N/A
	4/19/2023	< 0.005	< 0.005	**0.00519**	0.00436*	N/A	N/A
	4/19/2023	N/A	N/A	N/A	**0.00813**	N/A	N/A
	10/26/2023	< 0.005	0.00217*	**0.0067**	**0.00533**	N/A	N/A
	10/26/2023	< 0.005	N/A	N/A	N/A	N/A	N/A
Selenium, mg/L (CAS NO - 7782-49-2)	10/13/2009	N/A	N/A	< 0.005	< 0.005	< 0.005	< 0.005
	2/17/2015	< 0.005	< 0.005	N/A	N/A	N/A	< 0.005
	6/16/2015	< 0.005	< 0.005	N/A	N/A	< 0.005	< 0.005
	10/27/2015	< 0.005	< 0.005	N/A	N/A	< 0.005	< 0.005
	5/4/2016	< 0.005	< 0.005	< 0.005	< 0.005	0.000957*	0.000961*
Silver, mg/L (CAS NO - 7440-22-4)	10/13/2009	N/A	N/A	< 0.02	< 0.02	< 0.02	< 0.02
	2/17/2015	< 0.001	< 0.001	N/A	N/A	N/A	0.000066*
	6/16/2015	< 0.001	< 0.001	N/A	N/A	< 0.001	< 0.001
	10/27/2015	< 0.001	< 0.001	N/A	N/A	0.00013*	< 0.001
	5/4/2016	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	10/4/2016	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	4/10/2017	0.000151*	< 0.001	< 0.001	< 0.001	0.000175*	< 0.001
	10/26/2017	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	10/2/2018	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
	4/9/2019	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	10/7/2019	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	5/28/2020	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	5/28/2020	N/A	N/A	N/A	N/A	N/A	< 0.001
	10/14/2020	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	10/14/2020	N/A	< 0.001	N/A	N/A	N/A	N/A
	5/5/2021	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	5/5/2021	N/A	N/A	N/A	N/A	N/A	< 0.001
	10/26/2021	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	10/26/2021	N/A	< 0.001	N/A	N/A	N/A	N/A
	4/7/2022	0.000523*	< 0.004	< 0.004	0.00351*	N/A	N/A
	4/7/2022	N/A	N/A	N/A	< 0.004	N/A	N/A
	10/20/2022	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001
	10/20/2022	N/A	N/A	N/A	< 0.001	N/A	N/A
	4/19/2023	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A
	4/19/2023	N/A	N/A	N/A	< 0.001	N/A	N/A
	10/26/2023	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A
	10/26/2023	< 0.001	N/A	N/A	N/A	N/A	N/A

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Summary of Groundwater Chemistry

Carter Lake Construction and Demolition Landfill (Closed) - 78-SDP-02-80C

Total Metals Constituents	Sample Date	MW-4 UPG	MW-6 UPG	MW-7R2 UPG	MW-1R DNG	MW-3 DNG	MW-5 DNG
Thallium, mg/L (CAS NO - 7440-28-0)	10/13/2009	N/A	N/A	< 0.002	< 0.002	< 0.002	< 0.002
	2/17/2015	< 0.001	< 0.001	N/A	N/A	N/A	0.00004*
	6/16/2015	< 0.001	< 0.001	N/A	N/A	0.000061*	0.000033*
	10/27/2015	< 0.001	< 0.001	N/A	N/A	0.000078*	0.000065*
	5/4/2016	< 0.001	< 0.001	< 0.001	< 0.001	0.000036*	0.000071*
	10/4/2016	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.000047*
	4/10/2017	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	10/26/2017	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	10/2/2018	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	4/9/2019	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	10/7/2019	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	5/28/2020	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	5/28/2020	N/A	N/A	N/A	N/A	N/A	< 0.001
	10/14/2020	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	10/14/2020	N/A	< 0.001	N/A	N/A	N/A	N/A
	5/5/2021	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	5/5/2021	N/A	N/A	N/A	N/A	N/A	< 0.001
	10/26/2021	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	10/26/2021	N/A	< 0.001	N/A	N/A	N/A	N/A
	4/7/2022	< 0.001	< 0.004	< 0.004	< 0.004	N/A	N/A
	4/7/2022	N/A	N/A	N/A	< 0.004	N/A	N/A
	10/20/2022	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001
	10/20/2022	N/A	N/A	N/A	< 0.001	N/A	N/A
	4/19/2023	**0.00112**	< 0.001	< 0.001	0.000878*	N/A	N/A
	4/19/2023	N/A	N/A	N/A	< 0.001	N/A	N/A
	10/26/2023	< 0.001	< 0.001	< 0.001	**0.00567**	N/A	N/A
	10/26/2023	< 0.001	N/A	N/A	N/A	N/A	N/A
Vanadium, mg/L (CAS NO - 7440-62-2)	10/13/2009	N/A	N/A	< 0.05	< 0.05	< 0.05	< 0.05
	2/17/2015	0.00136*	0.00122*	N/A	N/A	N/A	0.00201*
	6/16/2015	< 0.005	0.00126*	N/A	N/A	0.00359*	0.000968*
	10/27/2015	0.000832*	0.00153*	N/A	N/A	0.00361*	0.00106*
	5/4/2016	< 0.005	0.00107*	0.00124*	0.000731*	0.000572*	0.000651*
	10/4/2016	0.000333*	0.00115*	0.00179*	0.000523*	0.00041*	0.000822*
	4/10/2017	< 0.005	< 0.01	0.0018*	< 0.005	< 0.005	< 0.005
	10/26/2017	< 0.005	0.00103*	0.00134*	< 0.005	< 0.005	< 0.005
	10/2/2018	< 0.005	< 0.005	0.00233*	< 0.005	< 0.005	< 0.005
	4/9/2019	< 0.005	< 0.005	0.00151*	< 0.005	0.00256*	< 0.02
	10/7/2019	< 0.005	< 0.005	0.00136*	< 0.005	0.00133*	0.00115*
	5/28/2020	< 0.005	< 0.005	0.000974*	< 0.005	< 0.005	< 0.005
	5/28/2020	N/A	N/A	N/A	N/A	N/A	< 0.005
	10/14/2020	< 0.005	< 0.005	0.00218*	< 0.005	0.00134*	< 0.005
	10/14/2020	N/A	< 0.005	N/A	N/A	N/A	N/A
	5/5/2021	< 0.005	< 0.005	0.00176*	< 0.005	0.00124*	< 0.005
	5/5/2021	N/A	N/A	N/A	N/A	N/A	< 0.005
	10/26/2021	< 0.005	< 0.005	0.00194*	< 0.005	0.0011*	< 0.005
	10/26/2021	N/A	< 0.005	N/A	N/A	N/A	N/A
	4/7/2022	< 0.005	< 0.02	< 0.02	< 0.02	N/A	N/A
	4/7/2022	N/A	N/A	N/A	< 0.02	N/A	N/A
	10/20/2022	< 0.005	< 0.005	N/A	< 0.005	< 0.005	< 0.005
	10/20/2022	N/A	N/A	N/A	< 0.005	N/A	N/A
	4/19/2023	< 0.005	< 0.005	0.00165*	< 0.005	N/A	N/A
	4/19/2023	N/A	N/A	N/A	< 0.005	N/A	N/A
	10/26/2023	< 0.005	< 0.005	0.002*	< 0.005	N/A	N/A
	10/26/2023	< 0.005	N/A	N/A	N/A	N/A	N/A

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Summary of Groundwater Chemistry

Carter Lake Construction and Demolition Landfill (Closed) - 78-SDP-02-80C

Total Metals Constituents	Sample Date	MW-4 UPG	MW-6 UPG	MW-7R2 UPG	MW-1R DNG	MW-3 DNG	MW-5 DNG
Zinc, mg/L (CAS NO - 7440-66-6)	10/13/2009	N/A	N/A	**0.157**	**0.277**	**0.147**	**1.33**
	2/17/2015	**0.0131**	< 0.01	N/A	N/A	N/A	**0.18**
	6/16/2015	< 0.01	0.00917*	N/A	N/A	**0.0506**	**0.141**
	10/27/2015	< 0.01	< 0.01	N/A	N/A	**0.0239**	**0.177**
	5/4/2016	< 0.01	< 0.01	**0.0276**	**0.0118**	**0.0156**	**0.252**
	10/4/2016	< 0.01	< 0.01	**0.161**	< 0.01	< 0.01	**0.0872**
	4/10/2017	< 0.02	< 0.02	**0.0828**	< 0.02	< 0.02	**0.0205**
	10/26/2017	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.0363**
	10/2/2018	< 0.02	< 0.02	0.00994*	< 0.02	0.00876*	**0.053**
	4/9/2019	< 0.02	< 0.02	**0.0222**	< 0.02	**0.048**	**2.86**
	10/7/2019	< 0.02	< 0.02	**0.0397**	< 0.02	0.0173*	**0.495**
	5/28/2020	< 0.02	< 0.02	< 0.02	< 0.02	**0.0361**	**0.36**
	5/28/2020	N/A	N/A	N/A	N/A	N/A	**0.325**
	10/14/2020	< 0.02	0.0136*	**0.187**	< 0.02	**0.0217**	**0.418**
	10/14/2020	N/A	< 0.02	N/A	N/A	N/A	N/A
	5/5/2021	< 0.02	< 0.02	**0.0309**	< 0.02	**0.026**	**0.437**
	5/5/2021	N/A	N/A	N/A	N/A	N/A	**0.993**
	10/26/2021	< 0.02	< 0.02	**0.119**	< 0.02	0.0159*	**0.2**
	10/26/2021	N/A	< 0.02	N/A	N/A	N/A	N/A
	4/7/2022	< 0.02	< 0.08	0.0451*	< 0.08	N/A	N/A
	4/7/2022	N/A	N/A	N/A	< 0.08	N/A	N/A
	10/20/2022	< 0.02	< 0.02	N/A	< 0.02	0.0112*	**0.0358**
	10/20/2022	N/A	N/A	N/A	< 0.02	N/A	N/A
	4/19/2023	< 0.02	< 0.02	**0.0257**	< 0.02	N/A	N/A
	4/19/2023	N/A	N/A	N/A	< 0.02	N/A	N/A
	10/26/2023	< 0.02	< 0.02	< 0.02	< 0.02	N/A	N/A
	10/26/2023	< 0.02	N/A	N/A	N/A	N/A	N/A
Total Suspended Solids, mg/L (CAS NO - TSS)	6/16/2015	**76.5**	**92.7**	N/A	N/A	**110**	**84.7**
	10/27/2015	**87**	**80.7**	N/A	N/A	**383**	**123**
	5/4/2016	**46.4**	**74.5**	**66**	**70.5**	**10.4**	**73.8**
	10/4/2016	**33.9**	**76.6**	**263**	**95.3**	**15.5**	**305**
	4/10/2017	**41.4**	**74**	**130**	**81.7**	**9**	**389**
	10/26/2017	1*	**80.3**	**56.8**	**84**	**26.4**	**88.7**
	10/2/2018	**50.5**	**71**	**89**	**86**	**13.7**	**74**
	4/9/2019	**64.6**	**1.88**	**81.2**	**88.9**	**2**	**2.25**
	10/7/2019	**57**	**56**	**136**	**68**	**3**	**18**
	5/28/2020	**2**	< 1.88	**87.3**	**84.8**	**10.6**	**1.88**
	5/28/2020	N/A	N/A	N/A	N/A	N/A	**27**
	10/14/2020	< 1.88	**48**	**96**	**80**	**26**	**75**
	10/14/2020	N/A	**45**	N/A	N/A	N/A	N/A
	5/5/2021	**16.9**	**52**	**85.3**	**85.5**	**3.63**	**25.3**
	5/5/2021	N/A	N/A	N/A	N/A	N/A	**33**
	10/26/2021	**68**	**56**	**124**	**90**	**7.25**	**86**
	10/26/2021	N/A	**46**	N/A	N/A	N/A	N/A
	4/7/2022	**51**	**48**	**188**	**126**	N/A	N/A
	4/7/2022	N/A	N/A	N/A	**98**	N/A	N/A
	10/20/2022	**76**	**62**	N/A	**108**	1.75*	**123**
	10/20/2022	N/A	N/A	N/A	**98**	N/A	N/A
	4/19/2023	**77**	**80.7**	**117**	**86.7**	N/A	N/A
	4/19/2023	N/A	N/A	N/A	**79**	N/A	N/A
	10/26/2023	**126**	**91**	**150**	**145**	N/A	N/A
	10/26/2023	**94**	N/A	N/A	N/A	N/A	N/A

Note: * indicates 'J flag'. Detection is below the reporting limit, but greater than the MDL (Method Detection Limit). The concentration is estimated.

Denotes Detection.
Denotes Confirmed Outlier. Statistically Excluded.

Sampling performed over multiple dates is recorded on the first date sampled. Refer to field forms for exact sample date.

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Summary of Groundwater Chemistry

Carter Lake Construction and Demolition Landfill (Closed) - 78-SDP-02-80C

Appendix I VOC Constituents	Sample Date	MW-4 UPG	MW-6 UPG	MW-7R2 UPG	MW-1R DNG	MW-3 DNG	MW-5 DNG
1,1,1,2-Tetrachloroethane, ug/L (CAS NO - 630-20-6)	10/13/2009	N/A	N/A	< 2	< 2	< 2	< 2
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
1,1,1-Trichloroethane, ug/L (CAS NO - 71-55-6)	10/2/1996	< 1	< 1	< 1	< 1	< 1	< 1
	1/27/1997	< 1	< 1	< 1	< 1	< 1	< 1
	4/15/1997	< 1	< 1	< 1	< 1	< 1	< 1
	7/23/1997	< 1	< 1	< 2	< 1	< 1	< 1
	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
1,1,2,2-Tetrachloroethane, ug/L (CAS NO - 79-34-5)	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
1,1,2-Trichloroethane, ug/L (CAS NO - 79-00-5)	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
1,1-Dichloroethane, ug/L (CAS NO - 75-34-3)	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
1,1-Dichloroethene, ug/L (CAS NO - 75-35-4)	10/2/1996	< 1	< 1	< 1	< 1	< 1	< 1
	1/27/1997	< 2	< 2	< 2	< 2	< 2	< 2
	4/15/1997	< 2	< 2	< 2	< 2	< 2	< 2
	7/23/1997	< 2	< 2	< 4	< 2	< 2	< 2
	10/13/2009	N/A	N/A	< 2	< 2	< 2	< 2
	2/17/2015	< 2	< 2	N/A	N/A	N/A	< 2
	10/27/2015	< 2	< 2	N/A	N/A	< 2	< 2
1,2,3-Trichloropropane, ug/L (CAS NO - 96-18-4)	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
1,2-Dibromo-3-Chloropropane, ug/L (CAS NO - 96-12-8)	10/13/2009	N/A	N/A	< 0.498	< 0.498	< 0.498	< 0.498
	2/17/2015	< 0.12	< 0.12	N/A	N/A	N/A	< 0.12
	10/27/2015	< 0.5	< 0.5	N/A	N/A	< 0.5	< 0.5
1,2-Dibromoethane [EDB], ug/L (CAS NO - 106-93-4)	10/13/2009	N/A	N/A	< 0.255	< 0.255	< 0.255	< 0.255
	2/17/2015	< 0.13	< 0.13	N/A	N/A	N/A	< 0.13
	10/27/2015	< 0.13	< 0.13	N/A	N/A	< 0.13	< 0.13
1,2-Dichlorobenzene, ug/L (CAS NO - 95-50-1)	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
1,2-Dichloroethane, ug/L (CAS NO - 107-06-2)	10/2/1996	< 1	< 1	< 1	< 1	< 1	< 1
	1/27/1997	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
	4/15/1997	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
	7/23/1997	< 0.4	< 0.4	< 0.8	< 0.4	< 0.4	< 0.4
	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
1,2-Dichloropropane, ug/L (CAS NO - 78-87-5)	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
1,4-Dichlorobenzene, ug/L (CAS NO - 106-46-7)	10/2/1996	< 1	< 1	< 1	< 1	< 1	< 1
	1/27/1997	< 1	< 1	< 1	< 1	< 1	< 1
	4/15/1997	< 1	< 1	< 1	< 1	< 1	< 1
	7/23/1997	< 1	< 1	< 2	< 1	< 1	< 1
	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
2-Butanone, ug/L (CAS NO - 78-93-3)	10/13/2009	N/A	N/A	< 10	< 10	< 10	< 10
	2/17/2015	< 10	< 10	N/A	N/A	N/A	< 10
	10/27/2015	< 10	< 10	N/A	N/A	< 10	< 10
2-Hexanone, ug/L (CAS NO - 591-78-6)	10/13/2009	N/A	N/A	< 10	< 10	55.4	< 10
	2/17/2015	< 10	< 10	N/A	N/A	N/A	< 10
	10/27/2015	< 10	< 10	N/A	N/A	< 10	< 10

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Carter Lake Construction and Demolition Landfill (Closed) - 78-SDP-02-80C

Appendix I VOC Constituents	Sample Date	MW-4 UPG	MW-6 UPG	MW-7R2 UPG	MW-1R DNG	MW-3 DNG	MW-5 DNG
4-Methyl-2-Pentanone, ug/L (CAS NO - 108-10-1)	10/13/2009	N/A	N/A	< 10	< 10	< 10	< 10
	2/17/2015	< 10	< 10	N/A	N/A	N/A	< 10
	10/27/2015	< 10	< 10	N/A	N/A	< 10	< 10
Acetone, ug/L (CAS NO - 67-64-1)	10/13/2009	N/A	N/A	53.2	260	16.3	< 10
	2/17/2015	< 10	< 10	N/A	N/A	N/A	2.28*
	10/27/2015	< 10	3.19*	N/A	N/A	9.14*	3.57*
Acrylonitrile, ug/L (CAS NO - 107-13-1)	10/13/2009	N/A	N/A	< 10	< 10	< 10	< 10
	2/17/2015	< 10	< 10	N/A	N/A	N/A	< 10
	10/27/2015	< 10	< 10	N/A	N/A	< 10	< 10
Benzene, ug/L (CAS NO - 71-43-2)	10/2/1996	< 1	< 1	< 1	< 1	< 1	< 1
	1/27/1997	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	4/15/1997	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	7/23/1997	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	10/13/2009	N/A	N/A	< 0.5	< 0.5	< 0.5	< 0.5
	2/17/2015	< 0.5	< 0.5	N/A	N/A	N/A	< 0.5
	10/27/2015	< 0.5	< 0.5	N/A	N/A	< 0.5	< 0.5
Bromochloromethane, ug/L (CAS NO - 74-97-5)	10/13/2009	N/A	N/A	< 5	< 5	< 5	< 5
	2/17/2015	< 5	< 5	N/A	N/A	N/A	< 5
	10/27/2015	< 5	< 5	N/A	N/A	< 5	< 5
Bromodichloromethane, ug/L (CAS NO - 75-27-4)	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
Bromoform, ug/L (CAS NO - 75-25-2)	10/13/2009	N/A	N/A	< 20	< 20	< 20	< 20
	2/17/2015	< 5	< 5	N/A	N/A	N/A	< 5
	10/27/2015	< 5	< 5	N/A	N/A	< 5	< 5
Bromomethane, ug/L (CAS NO - 74-83-9)	10/13/2009	N/A	N/A	< 4	< 4	< 4	< 4
	2/17/2015	< 4	< 4	N/A	N/A	N/A	< 4
	10/27/2015	< 4	< 4	N/A	N/A	< 4	< 4
Carbon Disulfide, ug/L (CAS NO - 75-15-0)	10/13/2009	N/A	N/A	< 5	< 5	< 5	< 5
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
Carbon Tetrachloride, ug/L (CAS NO - 56-23-5)	10/2/1996	< 1	< 1	< 1	< 1	< 1	< 1
	1/27/1997	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
	4/15/1997	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
	7/23/1997	< 0.3	< 0.3	< 0.6	< 0.3	< 0.3	< 0.3
	10/13/2009	N/A	N/A	< 2	< 2	< 2	< 2
	2/17/2015	< 2	< 2	N/A	N/A	N/A	< 2
	10/27/2015	< 2	< 2	N/A	N/A	< 2	< 2
Chlorobenzene, ug/L (CAS NO - 108-90-7)	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
Chlorodibromomethane, ug/L (CAS NO - 124-48-1)	10/13/2009	N/A	N/A	< 5	< 5	< 5	< 5
	2/17/2015	< 5	< 5	N/A	N/A	N/A	< 5
	10/27/2015	< 5	< 5	N/A	N/A	< 5	< 5
Chloroethane, ug/L (CAS NO - 75-00-3)	10/13/2009	N/A	N/A	< 4	< 4	< 4	< 4
	2/17/2015	< 4	< 4	N/A	N/A	N/A	< 4
	10/27/2015	< 4	< 4	N/A	N/A	< 4	< 4
Chloroform, ug/L (CAS NO - 67-66-3)	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
Chloromethane, ug/L (CAS NO - 74-87-3)	10/13/2009	N/A	N/A	< 3	< 3	< 3	< 3
	2/17/2015	< 3	< 3	N/A	N/A	N/A	< 3
	10/27/2015	< 3	< 3	N/A	N/A	< 3	< 3
cis-1,2-Dichloroethene, ug/L (CAS NO - 156-59-2)	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
cis-1,3-Dichloropropene, ug/L (CAS NO - 10061-01-5)	10/13/2009	N/A	N/A	< 5	< 5	< 5	< 5
	2/17/2015	< 5	< 5	N/A	N/A	N/A	< 5
	10/27/2015	< 5	< 5	N/A	N/A	< 5	< 5

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Summary of Groundwater Chemistry

Carter Lake Construction and Demolition Landfill (Closed) - 78-SDP-02-80C

Appendix I VOC Constituents	Sample Date	MW-4 UPG	MW-6 UPG	MW-7R2 UPG	MW-1R DNG	MW-3 DNG	MW-5 DNG
Ethylbenzene, ug/L (CAS NO - 100-41-4)	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
Iodomethane, ug/L (CAS NO - 74-88-4)	10/13/2009	N/A	N/A	< 10	< 10	< 10	< 10
	2/17/2015	< 10	< 10	N/A	N/A	N/A	< 10
	10/27/2015	< 10	< 10	N/A	N/A	< 10	< 10
Methylene Bromide, ug/L (CAS NO - 74-95-3)	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
Methylene Chloride, ug/L (CAS NO - 75-09-2)	10/13/2009	N/A	N/A	< 5	< 5	< 5	< 5
	2/17/2015	< 5	< 5	N/A	N/A	N/A	< 5
	10/27/2015	0.392*	0.29*	N/A	N/A	< 5	0.192*
Styrene, ug/L (CAS NO - 100-42-5)	10/13/2009	N/A	N/A	< 2	< 2	< 2	< 2
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
Tetrachloroethene, ug/L (CAS NO - 127-18-4)	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
Toluene, ug/L (CAS NO - 108-88-3)	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
trans-1,2-Dichloroethene, ug/L (CAS NO - 156-60-5)	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
trans-1,3-Dichloropropene, ug/L (CAS NO - 10061-02-6)	10/13/2009	N/A	N/A	< 5	< 5	< 5	< 5
	2/17/2015	< 5	< 5	N/A	N/A	N/A	< 5
	10/27/2015	< 5	< 5	N/A	N/A	< 5	< 5
trans-1,4-Dichloro-2-Butene, ug/L (CAS NO - 110-57-6)	10/13/2009	N/A	N/A	< 10	< 10	< 10	< 10
	2/17/2015	< 10	< 10	N/A	N/A	N/A	< 10
	10/27/2015	< 10	< 10	N/A	N/A	< 10	< 10
Trichloroethene, ug/L (CAS NO - 79-01-6)	10/2/1996	< 1	< 1	< 1	< 1	< 1	< 1
	1/27/1997	< 1	< 1	< 1	< 1	< 1	< 1
	4/15/1997	< 1	< 1	< 1	< 1	< 1	< 1
	7/23/1997	< 1	< 1	< 2	< 1	< 1	< 1
	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
Trichlorofluoromethane, ug/L (CAS NO - 75-69-4)	10/13/2009	N/A	N/A	< 4	< 4	< 4	< 4
	2/17/2015	< 4	< 4	N/A	N/A	N/A	< 4
	10/27/2015	< 4	< 4	N/A	N/A	< 4	< 4
Vinyl Acetate, ug/L (CAS NO - 108-05-4)	10/13/2009	N/A	N/A	< 2	< 2	< 2	< 2
	2/17/2015	< 10	< 10	N/A	N/A	N/A	< 10
	10/27/2015	< 10	< 10	N/A	N/A	< 10	< 10
Vinyl Chloride, ug/L (CAS NO - 75-01-4)	10/13/2009	N/A	N/A	< 1	< 1	< 1	< 1
	2/17/2015	< 1	< 1	N/A	N/A	N/A	< 1
	10/27/2015	< 1	< 1	N/A	N/A	< 1	< 1
Xylenes, total, ug/L (CAS NO - 1330-20-7)	10/13/2009	N/A	N/A	< 6	< 6	< 6	< 6
	2/17/2015	< 3	< 3	N/A	N/A	N/A	< 3
	10/27/2015	< 3	< 3	N/A	N/A	< 3	< 3

Note: * indicates 'J flag'. Detection is below the reporting limit, but greater than the MDL (Method Detection Limit). The concentration is estimated.

Denotes Detection.
Denotes Confirmed Outlier. Statistically Excluded.

Sampling performed over multiple dates is recorded on the first date sampled. Refer to field forms for exact sample date.

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Summary of Groundwater Chemistry

Carter Lake Construction and Demolition Landfill (Closed) - 78-SDP-02-80C

Other Constituents	Sample Date	MW-4 UPG	MW-6 UPG	MW-7R2 UPG	MW-1R DNG	MW-3 DNG	MW-5 DNG
Ammonia as N, mg/L (CAS NO - 7664-41-7)	10/2/1996	2.7	3	2	0.58	0.35	1.2
	1/27/1997	2.3	3.4	1.2	0.54	< 0.2	0.66
	4/15/1997	2.4	3.6	1.9	1.7	0.58	0.83
	7/23/1997	2.5	3.2	2	1.1	2	0.54
	10/15/1997	2.4	2.6	1.6	1.3	0.67	0.64
	4/6/1998	3	3.4	2	3	0.98	0.4
	10/13/1998	2.9	3.3	3.2	1.6	1.1	0.63
	4/15/1999	3.1	3.4	N/A	1.5	0.22	< 0.2
	10/7/1999	3.2	3	N/A	3.6	0.79	0.73
	10/12/2000	2.4	3	N/A	< 1	< 1	< 1
	10/4/2001	2.5	3.8	5.3	2.4	N/A	< 1
	10/3/2002	< 1	3.8	6.1	1.9	< 1	< 1
	10/15/2003	2.05	4.23	1.98	1.23	< 0.2	0.5
	10/4/2004	2.6	6.51	2.64	3.19	< 0.2	0.49
	10/10/2005	2.57	5.62	5.13	3.44	< 0.2	< 0.2
	10/11/2006	2.61	5.02	5.53	8.38	< 0.2	< 0.2
	10/17/2007	2.38	5.16	4.85	6.79	0.302	0.469
	10/23/2008	2.06	4.01	4.84	3.01	1.09	< 0.2
	10/13/2009	2.9	4.95	5.02	4.16	1.3	0.451
	10/25/2010	2.87	5.11	5.92	N/A	1.08	0.789
	10/6/2011	< 0.2	< 0.2	< 0.2	< 0.2	0.669	0.215
	9/12/2012	N/A	N/A	< 0.2	0.268	< 0.2	< 0.2
	11/6/2012	< 0.2	< 0.2	N/A	N/A	N/A	N/A
	10/15/2013	< 0.2	1.23	N/A	N/A	N/A	0.534
	6/16/2015	2.48	5.57	N/A	N/A	0.104*	0.33
	10/27/2015	2.55	5.34	N/A	N/A	0.624	0.117*
	5/4/2016	1.49	6.05	4.46	2.16	0.197*	0.144*
	10/4/2016	< 0.2	6.32	5.04	1.26	0.486	0.579
	4/10/2017	1.8	6.7	5.08	1.34	0.472	0.778
	10/26/2017	< 0.2	6.86	1.98	1.63	0.919	0.437
	10/2/2018	2.2	7.13	5.5	1.6	0.771	1.22
	4/9/2019	2.31	6.24	5.43	1.66	< 0.2	0.381
	10/7/2019	2.13	5.94	5.08	1.5	0.936	0.582
	5/28/2020	< 0.2	1.39	6.39	2.01	0.466	< 0.2
	5/28/2020	N/A	N/A	N/A	N/A	N/A	0.0729*
	10/14/2020	< 0.2	2.38	4.77	1.64	0.96	0.576
	10/14/2020	N/A	4.19	N/A	N/A	N/A	N/A
	5/5/2021	< 0.2	4.44	5.08	1.61	0.7	< 0.2
	5/5/2021	N/A	N/A	N/A	N/A	N/A	0.291
	10/26/2021	0.281	5.03	6.92	1.87	1.14	0.778
	10/26/2021	N/A	5.08	N/A	N/A	N/A	N/A
	4/7/2022	1.58	5.04	4.34	1.78	N/A	N/A
	4/7/2022	N/A	N/A	N/A	1.82	N/A	N/A
	10/20/2022	1.69	4.25	N/A	1.28	0.648	0.957
	10/20/2022	N/A	N/A	N/A	1.29	N/A	N/A
	4/19/2023	2.49	6.57	3.93	1.63	N/A	N/A
	4/19/2023	N/A	N/A	N/A	1.7	N/A	N/A
	10/26/2023	2.38	5.81	4.29	1.92	N/A	N/A
	10/26/2023	2.38	N/A	N/A	N/A	N/A	N/A
Arsenic, Dissolved, mg/L (CAS NO - D7440-38-2)	10/2/1996	0.0384	0.1194	0.0033	0.0215	0.0294	0.0509
	1/27/1997	0.0314	0.0662	< 0.001	0.022	0.0223	0.0887
	4/15/1997	0.0425	0.0752	0.0042	0.0195	0.027	0.0596
	7/23/1997	0.0339	0.0745	0.0011	0.0281	0.0387	0.0413
	10/15/1997	0.0269	0.0682	0.0035	0.0332	0.0354	0.041
	4/6/1998	N/A	0.0352	N/A	N/A	0.0025	0.008
	10/13/1998	N/A	0.0607	N/A	N/A	0.0307	0.0484
	4/15/1999	N/A	0.0492	N/A	N/A	0.0118	0.001
	10/7/1999	N/A	0.0673	N/A	N/A	0.0086	0.0264
	10/12/2000	N/A	0.067	N/A	N/A	< 0.001	0.02
	10/4/2001	0.026	0.058	0.025	0.013	N/A	0.038
	10/3/2002	0.025	0.06	0.022	0.011	0.005	0.015

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Carter Lake Construction and Demolition Landfill (Closed) - 78-SDP-02-80C

Other Constituents	Sample Date	MW-4 UPG	MW-6 UPG	MW-7R2 UPG	MW-1R DNG	MW-3 DNG	MW-5 DNG
Arsenic, Dissolved, mg/L (CAS NO - D7440-38-2)	10/15/2003	0.0229	0.0159	0.0114	< 0.001	0.0019	0.0018
	10/4/2004	0.0216	0.0678	0.0204	0.0124	0.0027	0.0234
	10/10/2005	0.04	0.0609	0.0275	0.0318	0.0096	0.0085
	10/11/2006	0.0446	0.0643	0.0545	0.00844	0.00277	0.0219
	10/17/2007	0.033	0.05	0.031	0.0088	< 0.0034	0.0088
	10/23/2008	0.0261	0.061	0.00849	0.013	0.0132	0.257
	10/13/2009	0.0239	0.0554	0.013	0.00542	0.00755	0.0995
	10/25/2010	0.026	0.0675	0.00496	N/A	0.0118	0.0811
	10/6/2011	0.00181	0.00174	N/A	N/A	N/A	N/A
	9/12/2012	N/A	N/A	0.00489	0.00525	0.00196	0.00165
	11/6/2012	< 0.001	0.0129	N/A	N/A	N/A	N/A
	10/15/2013	0.00318	0.00341	N/A	N/A	N/A	0.0357
	10/27/2015	0.0386	0.0537	N/A	N/A	0.00615	0.00689
Chemical Oxygen Demand, mg/L (CAS NO - COD)	10/2/1996	29	130	120	70	45	48
	1/27/1997	33	150	120	62	54	76
	4/15/1997	40	110	100	94	60	55
	7/23/1997	18	100	110	58	85	47
	10/15/1997	15	110	120	64	45	31
	4/6/1998	17	52	77	110	48	62
	10/13/1998	27	66	100	91	150	92
	4/15/1999	21	51	N/A	89	66	42
	10/7/1999	22	89	N/A	80	49	69
	10/12/2000	19	50	N/A	56	30	76
	10/4/2001	39	67	85	41	N/A	109
	10/3/2002	31	144	100	51	28	86
	10/15/2003	24	180	100	120	36	96
	10/4/2004	8.1	140	69	53	31	150
	10/10/2005	24	120	95	140	36	140
	10/11/2006	24.3	101	111	308	29.6	82
	10/17/2007	26.1	103	114	315	46.5	80.9
	10/23/2008	31.8	98.3	193	338	45.4	17.3
	10/13/2009	27.9	65.5	101	109	122	138
	10/25/2010	22.3	82.7	66.9	N/A	35	94.7
	10/6/2011	15.8	9.4	13.9	15.8	13.6	24.9
	9/12/2012	N/A	N/A	7.8	15.6	12	5.5
	11/6/2012	8.5	47.1	N/A	N/A	N/A	N/A
	10/15/2013	22.2	46.4	N/A	N/A	N/A	137
	6/16/2015	42	185	N/A	N/A	37.3	88.4
	10/27/2015	34.5	75.6	N/A	N/A	47.9	82.3
	5/4/2016	29.7	195	114	40.8	41.2	89
	10/4/2016	31.1	170	143	33.7	48.4	88.2
	4/10/2017	31.4	140	118	22.4	41.5	73.1
	10/26/2017	19.7	136	127	28.8	42	62.4
	10/2/2018	30.6	103	123	30	41.4	87.3
	4/9/2019	31.5	69.6	135	44.1	30.4	133
	10/7/2019	23	47.1	123	43.9	38.3	92.4
	5/28/2020	20.2	40.2	148	45.4	40.5	63.8
	5/28/2020	N/A	N/A	N/A	N/A	N/A	67.8
	10/14/2020	24.6	40.4	143	32.8	47.9	71.8
	10/14/2020	N/A	44.6	N/A	N/A	N/A	N/A
	5/5/2021	26.3	52.3	170	47.7	44.1	67.3
	5/5/2021	N/A	N/A	N/A	N/A	N/A	69.4
	10/26/2021	30.5	74.9	134	34.3	63.8	82.9
	10/26/2021	N/A	74.2	N/A	N/A	N/A	N/A
	4/7/2022	25.3	54.7	124	24.4	N/A	N/A
	4/7/2022	N/A	N/A	N/A	31.3	N/A	N/A
	10/20/2022	26.9	66.6	N/A	31	37.2	69.4
	10/20/2022	N/A	N/A	N/A	29.7	N/A	N/A
	4/19/2023	28.6	126	12.4	44.1	N/A	N/A
	4/19/2023	N/A	N/A	N/A	39.4	N/A	N/A

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Carter Lake Construction and Demolition Landfill (Closed) - 78-SDP-02-80C

Other Constituents	Sample Date	MW-4 UPG	MW-6 UPG	MW-7R2 UPG	MW-1R DNG	MW-3 DNG	MW-5 DNG
Chemical Oxygen Demand, mg/L (CAS NO - COD)	10/26/2023	30	141	114	53.8	N/A	N/A
	10/26/2023	31.8	N/A	N/A	N/A	N/A	N/A
Chloride, mg/L (CAS NO - 16887-00-6)	10/2/1996	69	180	94	160	160	64
	1/27/1997	65	140	63	150	140	85
	4/15/1997	70	150	64	120	150	62
	7/23/1997	61	150	110	140	120	60
	10/15/1997	57	120	86	130	880	54
	4/6/1998	62	75	89	110	78	50
	10/13/1998	70	96	160	110	100	92
	4/15/1999	70	81	N/A	48	64	16
	10/7/1999	70	140	N/A	160	130	99
	10/12/2000	62	100	N/A	244	120	100
	10/4/2001	98	118	57	221	N/A	72
	10/3/2002	61	166	50	215	97	75
	10/15/2003	46.9	219	56.3	243	141	75.3
	10/4/2004	47	196	48.9	97.2	169	52.4
	10/10/2005	67.1	186	51.4	143	132	61.4
	10/11/2006	67.1	172	66.2	84.7	144	56.3
	10/17/2007	64.3	192	10.1	46.4	193	51.6
	10/23/2008	60.3	16.4	76.4	37.7	110	71.7
	10/13/2009	65.9	134	45.5	105	130	58.5
	10/25/2010	58.6	167	58	N/A	150	80.6
	10/6/2011	45.3	33.2	50.8	57	65.9	27.2
	9/12/2012	N/A	N/A	118	61.3	63	27.5
	11/6/2012	73.8	59.4	N/A	N/A	N/A	N/A
	10/15/2013	72.7	121	N/A	N/A	N/A	30.5
	6/16/2015	71.1	141	N/A	N/A	10.8	30.4
	10/27/2015	66.8	145	N/A	N/A	64.7	27.7
	5/4/2016	78.1	121	50.6	145	21.8	51.4
	10/4/2016	77.6	115	81.5	120	64.1	58.9
	4/10/2017	81.8	119	67.4	203	56.7	42.6
	10/26/2017	92.2	117	64.6	209	57.1	40.1
	10/2/2018	84	89	58.6	226	62	68.6
	4/9/2019	86.3	77.5	73.9	298	31.6	19.6
	10/7/2019	71.6	68.7	61.4	203	44.4	57.3
	5/28/2020	68.4	103	153	207	32.2	121
	5/28/2020	N/A	N/A	N/A	N/A	N/A	107
	10/14/2020	66.6	64.6	87.5	187	43.7	57.5
	10/14/2020	N/A	59.3	N/A	N/A	N/A	N/A
	5/5/2021	60.9	53.8	87.8	227	44.1	43
	5/5/2021	N/A	N/A	N/A	N/A	N/A	39.5
	10/26/2021	62.6	58.1	71.7	348	44.9	35.5
	10/26/2021	N/A	58.3	N/A	N/A	N/A	N/A
	4/7/2022	68.1	64.4	74.8	477	N/A	N/A
	4/7/2022	N/A	N/A	N/A	488	N/A	N/A
	10/20/2022	65.6	78.2	N/A	354	42	32.7
	10/20/2022	N/A	N/A	N/A	352	N/A	N/A
	4/19/2023	156	122	64	345	N/A	N/A
	4/19/2023	N/A	N/A	N/A	340	N/A	N/A
	10/26/2023	152	127	62.6	252	N/A	N/A
	10/26/2023	152	N/A	N/A	N/A	N/A	N/A
Iron, Dissolved, mg/L (CAS NO - D7439-89-6)	10/2/1996	30	36	5.5	21	18	46
	1/27/1997	32	34	6.9	22	21	75
	4/15/1997	36	32	8.2	34	24	52
	7/23/1997	27	30	11	21	62	53
	10/15/1997	29	36	17	27	36	42
	4/6/1998	29	27	28	44	25	24
	10/13/1998	28	25	22	19	29	50
	4/15/1999	28	22	N/A	11	8	< 0.1
	10/7/1999	33	29	N/A	30	28	20
	10/12/2000	27.6	20.9	N/A	24.5	2.69	20.5

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Summary of Groundwater Chemistry

Carter Lake Construction and Demolition Landfill (Closed) - 78-SDP-02-80C

Other Constituents	Sample Date	MW-4 UPG	MW-6 UPG	MW-7R2 UPG	MW-1R DNG	MW-3 DNG	MW-5 DNG
Iron, Dissolved, mg/L (CAS NO - D7439-89-6)	10/4/2001	25.1	23.4	15.3	21.4	N/A	33.8
	10/3/2002	25.7	34.3	10.3	15.8	1.02	20.7
	10/15/2003	21.6	0.13	11.3	1.76	< 0.1	3.12
	10/4/2004	24	31	32	17	0.41	38
	10/10/2005	28	32	34	11	1.1	15
	10/11/2006	29	29.4	38.4	2.44	0.423	9.08
	10/17/2007	24.9	28.4	34.5	3.48	4.78	10.3
	10/23/2008	27.7	30.7	160	40.1	17.1	152
	10/13/2009	28.6	24.4	33.6	19	16.7	20.6
	10/25/2010	25.4	27.8	25.1	N/A	17.2	25.4
	10/6/2011	< 0.1	3.58	0.435	4.57	1.41	0.69
	9/12/2012	N/A	N/A	3.37	3.22	3.26	0.633
	11/6/2012	1.67	10.5	N/A	N/A	N/A	N/A
	10/15/2013	3.92	1.19	N/A	N/A	N/A	20.3
	6/16/2015	29.4	30.2	N/A	N/A	2.61	7.93
	10/27/2015	0.963	30.9	N/A	N/A	8.72	12.5
	5/4/2016	23.7	26	15.8	34.8	3.42	8.86
	10/4/2016	1.49	28.5	20	32.7	5.29	33.6
	4/10/2017	22.4	26	28.3	39.2	2.36	47.6
	10/26/2017	0.379*	28.6	17.6	44.9	10.1	31.6
	10/2/2018	27.3	13.1	45.3	47.4	4.71	19.7
	4/9/2019	29	< 0.5	25	55	< 0.5	< 0.5
	10/7/2019	24.6	19	30.3	38.5	1.16	7.45
	5/28/2020	< 0.5	< 0.5	28	40.6	3.85	0.918
	5/28/2020	N/A	N/A	N/A	N/A	N/A	1.98
	10/14/2020	< 0.5	< 0.5	20.9	38.3	7.47	8.11
	10/14/2020	N/A	< 0.5	N/A	N/A	N/A	N/A
	5/5/2021	< 0.5	17	4.86	45.6	0.88	1.67
	5/5/2021	N/A	N/A	N/A	N/A	N/A	1.27
	10/26/2021	16.4	14.6	35.3	49.4	2.96	20.1
	10/26/2021	N/A	18.2	N/A	N/A	N/A	N/A
	4/7/2022	6.97	14.5	45.8	58.3	N/A	N/A
	4/7/2022	N/A	N/A	N/A	59.9	N/A	N/A
	10/20/2022	35.3	25.3	N/A	52.5	0.66	53.4
	10/20/2022	N/A	N/A	N/A	53.5	N/A	N/A
	4/19/2023	35.9	36.3	55.2	55.9	N/A	N/A
	4/19/2023	N/A	N/A	N/A	58.3	N/A	N/A
	10/26/2023	36	30.7	54.4	49	N/A	N/A
	10/26/2023	36.4	N/A	N/A	N/A	N/A	N/A
pH, S.U. (CAS NO - PH)	10/2/1996	7.24	7.8	8.1	7.1	7.03	7.75
	1/27/1997	6.98	6.86	7.48	6.87	7.1	6.84
	4/15/1997	7.17	7.2	7.32	7.46	7.75	7.34
	7/23/1997	6.95	6.98	7.12	6.55	7.62	7.07
	10/15/1997	6.83	7.05	6.99	7.07	6.94	7.27
	4/6/1998	6.97	6.92	7.08	7.27	7.05	7.44
	10/13/1998	6.8	6.89	7.12	7.11	7.04	7.33
	4/15/1999	6.56	6.23	N/A	6.23	6.84	6.71
	10/7/1999	5.73	5.74	N/A	5.51	5.72	6.26
	10/12/2000	5.37	5.67	N/A	5.45	5.79	5.82
	10/4/2001	7.02	6.73	5.21	5.67	N/A	5.65
	10/3/2002	6.93	6.94	6.99	6.71	6.89	6.68
	10/15/2003	6.39	6.69	6.3	6.18	6.78	6.48
	10/4/2004	7.25	7.2	6.74	7.27	7.27	6.74
	10/10/2005	7.13	7.1	6.8	7	7.09	6.64
	10/11/2006	7.07	7.48	6.93	6.89	6.58	6.66
	10/17/2007	7.14	7.13	6.87	6.88	6.85	6.87
	10/23/2008	7.11	7.06	6.71	6.75	6.6	6.85
	10/13/2009	7.56	7.21	7.36	7.43	7.24	6.84
	10/25/2010	7.02	7.06	6.71	N/A	6.68	6.75
	10/6/2011	6.5	6.75	7.01	6.9	6.86	6.7
	9/12/2012	N/A	N/A	6.9	7.24	7.2	7

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Summary of Groundwater Chemistry

Carter Lake Construction and Demolition Landfill (Closed) - 78-SDP-02-80C

Other Constituents	Sample Date	MW-4 UPG	MW-6 UPG	MW-7R2 UPG	MW-1R DNG	MW-3 DNG	MW-5 DNG
pH, S.U. (CAS NO - PH)	11/6/2012	7.5	7.2	N/A	N/A	N/A	N/A
	10/15/2013	7.8	7	N/A	N/A	N/A	7.6
	6/16/2015	7.01	6.94	N/A	N/A	6.59	6.67
	10/27/2015	7.35	7.39	N/A	N/A	7.1	7.03
	5/4/2016	7.05	6.97	6.66	6.75	6.63	6.71
	10/4/2016	7.1	7.01	6.69	6.62	6.64	6.63
	4/10/2017	7.28	7.18	6.91	6.78	6.86	6.84
	10/26/2017	7.46	7.2	6.85	6.74	6.85	6.93
	10/2/2018	6.8	6.89	6.57	6.43	6.54	6.58
	4/9/2019	6.93	7.1	6.65	6.57	6.7	6.71
	10/7/2019	6.92	7.03	6.69	6.61	6.83	6.6
	5/28/2020	7.2	7.19	6.56	6.57	6.59	6.72
	10/14/2020	6.96	7.15	6.68	6.43	6.43	6.56
	5/5/2021	7.21	7.03	6.75	6.51	6.63	6.8
	10/26/2021	6.98	7.11	6.64	5.71	6.22	6.56
	4/7/2022	6.9	7.1	6.64	6.4	N/A	N/A
	10/20/2022	6.96	7.07	N/A	6.46	6.68	6.65
	4/19/2023	6.84	6.91	6.59	6.45	N/A	N/A
	10/26/2023	6.82	6.89	6.59	6.41	N/A	N/A
Specific Conductance, umhos/cm (CAS NO - SPECCON)	1/27/1997	1930	2130	2480	1670	1380	2950
	4/15/1997	3230	2350	3100	3600	3340	3170
	7/23/1997	3180	2730	2640	1990	3090	2820
	10/15/1997	2320	2200	3110	2760	3220	2020
	4/6/1998	2420	1950	3240	2630	3090	1880
	10/13/1998	2480	2020	3240	1710	3360	1960
	4/15/1999	2500	1940	N/A	2360	2940	1540
	10/7/1999	1240	960	N/A	1350	1900	1460
	10/12/2000	2190	1520	N/A	2090	2680	2480
	10/4/2001	1290	1080	1280	1520	N/A	1480
	10/3/2002	1458	1787	1760	1625	1578	1941
	10/15/2003	981	776	785	1259	740	814
	10/4/2004	880	968	1102	1163	1056	1123
	10/10/2005	1108	1188	1210	1313	1212	1456
	10/11/2006	2051	2289	2418	2537	2118	2617
	10/17/2007	2280	2670	2620	2760	3000	2670
	10/23/2008	857	759	482	598	579	631
	10/13/2009	2580	2610	2480	2850	2180	2950
	10/25/2010	2170	2400	2570	N/A	2530	2990
	10/6/2011	1415	1214	1420	1391	1275	2600
	9/12/2012	N/A	N/A	340	1605	2410	1020
	11/6/2012	1310	1020	N/A	N/A	N/A	N/A
	10/15/2013	1720	2110	N/A	N/A	N/A	2390
	2/17/2015	2583	2725	N/A	N/A	N/A	2548
	6/16/2015	2023	2191	N/A	N/A	1640	2137
	10/27/2015	1923	2125	N/A	N/A	1641	2091
	5/4/2016	1915	2201	2418	1882	1678	2497
	10/4/2016	2441	2760	3056	1981	1994	3493
	4/10/2017	1765	1894	2241	1727	1583	2323
	10/26/2017	1938	2047	2462	1890	2102	2340
	10/2/2018	2359	2174	2682	2656	2097	2162
	4/9/2019	1994.6	1749.2	2189.8	2410.6	1471.3	1942.9
	10/7/2019	2052.9	1826.9	2912.2	2426.9	1721.1	2513.1
	5/28/2020	1645.4	1613.6	3005	2190.9	1822.6	3176.7
	10/14/2020	1633.8	1605.3	2749	2061.1	2064.1	2710.5
	5/5/2021	1625.4	1654.2	2836.6	2291.3	1959.8	2549.4
	10/26/2021	1519.2	1524.3	2385.9	2404	2023.9	2336.4
	4/7/2022	1533	1509	2075	2733	N/A	N/A
	10/20/2022	2125	2070	N/A	2865	1767	2235
	4/19/2023	2468.5	2422.6	2133.6	2751.6	N/A	N/A
	10/26/2023	2158	2011.6	1944.3	2310.3	N/A	N/A

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Summary of Groundwater Chemistry

Carter Lake Construction and Demolition Landfill (Closed) - 78-SDP-02-80C

Other Constituents	Sample Date	MW-4 UPG	MW-6 UPG	MW-7R2 UPG	MW-1R DNG	MW-3 DNG	MW-5 DNG
Total Organic Halogens, mg/L (CAS NO - TOH)	10/2/1996	**0.043**	**0.037**	**0.039**	**0.032**	**0.046**	**0.062**
	10/15/1997	**0.011**	< 0.01	**0.021**	**0.03**	**0.024**	**0.02**
	10/13/1998	**0.014**	< 0.01	**0.075**	**0.06**	**0.046**	**0.044**
	10/7/1999	**0.0123**	**0.0226**	N/A	**0.0339**	**0.0542**	**0.0403**
	10/12/2000	**0.03**	**0.01**	N/A	**0.04**	**0.1**	**0.22**
	10/4/2001	**0.045**	< 0.01	< 0.01	**0.113**	N/A	**0.092**
	10/3/2002	**0.026**	< 0.01	**0.066**	**0.026**	**0.097**	**0.111**
	10/15/2003	< 0.01	**0.035**	**0.014**	**0.024**	**0.022**	**0.059**
	10/4/2004	**0.01**	**0.012**	**0.021**	**0.077**	**0.032**	**0.094**
	10/10/2005	**0.015**	< 0.01	**0.015**	**0.077**	**0.024**	**0.079**
	10/11/2006	**0.0375**	**0.0187**	**0.0197**	**0.758**	**0.0176**	**0.213**
	10/17/2007	**0.0248**	**0.0395**	**0.0255**	**0.563**	**0.0298**	**0.206**
	10/23/2008	**0.0279**	**0.0143**	**0.0147**	**1.23**	**0.0201**	**0.0622**
	10/13/2009	**0.0256**	**0.0117**	**0.0177**	**0.232**	**0.0333**	**0.0781**
	10/25/2010	**0.0248**	**0.0283**	**0.028**	N/A	**0.0262**	< 5
	10/6/2011	**0.0211**	**0.013**	**0.232**	**0.0612**	**0.166**	**0.022**
	9/12/2012	N/A	N/A	**0.0225**	**3.16**	**0.0463**	**0.0203**
	11/6/2012	**0.0333**	**0.041**	N/A	N/A	N/A	N/A
	10/15/2013	0.457*	**0.115**	N/A	N/A	N/A	**0.042**
	10/27/2015	**0.0754**	**0.0888**	N/A	N/A	**0.0624**	**0.0753**
	10/4/2016	**0.0586**	0.0188*	0.0204*	0.0184*	0.0228*	**0.0465**
	10/26/2017	**0.0694**	0.0237*	0.0223*	**0.0746**	**0.0603**	**0.0433**
	10/2/2018	0.0237*	0.0195*	0.0226*	0.019*	**0.0478**	**0.0403**
	10/7/2019	**0.024**	**0.013**	**0.034**	**0.033**	**0.037**	**0.037**
	10/14/2020	**0.093**	**0.0758**	**0.131**	0.0321*	**0.0656**	**0.0652**
	10/14/2020	N/A	**0.208**	N/A	N/A	N/A	N/A
	10/26/2021	**0.0978**	0.0358*	**0.117**	**0.24**	< 0.04	**0.0755**
	10/26/2021	N/A	0.0373*	N/A	N/A	N/A	N/A
	10/20/2022	0.019*	**0.135**	N/A	**0.135**	**0.0584**	**0.0812**
	10/20/2022	N/A	N/A	N/A	**0.125**	N/A	N/A
	10/26/2023	**0.149**	**0.15**	**0.201**	**0.139**	N/A	N/A
	10/26/2023	**0.199**	N/A	N/A	N/A	N/A	N/A
Total Phenols, mg/L (CAS NO - TP)	10/2/1996	< 0.02	**0.021**	< 0.02	**0.023**	**0.022**	< 0.02
	10/15/1997	< 0.02	**0.37**	**0.048**	**0.545**	< 0.02	**0.586**
	10/13/1998	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	10/7/1999	< 0.02	< 0.02	N/A	**0.02**	< 0.02	< 0.02
	10/12/2000	< 0.1	< 0.1	N/A	< 0.1	< 0.1	< 0.1
	10/4/2001	< 0.1	< 0.1	< 0.1	< 0.1	N/A	< 0.1
	10/3/2002	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	10/15/2003	< 0.02	< 0.02	< 0.02	**0.022**	< 0.02	< 0.02
	10/4/2004	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	10/10/2005	< 0.02	< 0.02	< 0.02	**0.021**	< 0.02	< 0.02
	10/11/2006	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	10/17/2007	< 0.018	< 0.02	< 0.02	**0.0255**	< 0.018	**0.1**
	10/23/2008	< 0.02	< 0.018	**0.122**	**0.195**	< 0.02	< 0.018
	10/13/2009	< 0.018	**0.22**	**0.199**	**0.175**	< 0.018	**0.085**
	10/25/2010	< 0.018	< 0.018	< 0.092	N/A	< 0.018	< 0.018
	10/6/2011	< 0.018	< 0.018	< 0.02	< 0.018	< 0.018	< 0.02
	9/12/2012	N/A	N/A	< 0.02	< 0.02	< 0.02	< 0.02
	11/6/2012	< 0.02	< 0.02	N/A	N/A	N/A	N/A
	10/15/2013	< 0.02	< 0.02	N/A	N/A	N/A	< 0.02
	10/27/2015	< 0.0212	< 0.0204	N/A	N/A	< 0.0192	< 0.0204
	10/4/2016	< 0.0184	0.00564*	< 0.0188	< 0.018	< 0.0184	0.00599*
	10/26/2017	< 0.0184	< 0.0196	0.0151*	0.0154*	< 0.0184	< 0.018
	10/2/2018	< 0.0192	< 0.0188	< 0.0188	< 0.0192	< 0.0192	< 0.0192
	10/7/2019	< 0.018	< 0.0188	< 0.0188	**0.0791**	**0.0619**	< 0.0196
	10/14/2020	< 0.0192	< 0.0188	< 0.0192	< 0.0184	< 0.0192	< 0.02
	10/14/2020	N/A	< 0.0188	N/A	N/A	N/A	N/A
	10/26/2021	< 0.0192	**0.0185**	< 0.0192	< 0.0192	< 0.018	< 0.0188
	10/26/2021	N/A	< 0.0184	N/A	N/A	N/A	N/A

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Summary of Groundwater Chemistry

Carter Lake Construction and Demolition Landfill (Closed) - 78-SDP-02-80C

Other Constituents	Sample Date	MW-4 UPG	MW-6 UPG	MW-7R2 UPG	MW-1R DNG	MW-3 DNG	MW-5 DNG
Total Phenols, mg/L (CAS NO - TP)	10/20/2022	< 0.02	< 0.02	N/A	< 0.02	< 0.02	< 0.02
	10/20/2022	N/A	N/A	N/A	< 0.02	N/A	N/A

Note: * indicates 'J flag'. Detection is below the reporting limit, but greater than the MDL (Method Detection Limit). The concentration is estimated.

Denotes Detection.
Denotes Confirmed Outlier. Statistically Excluded.

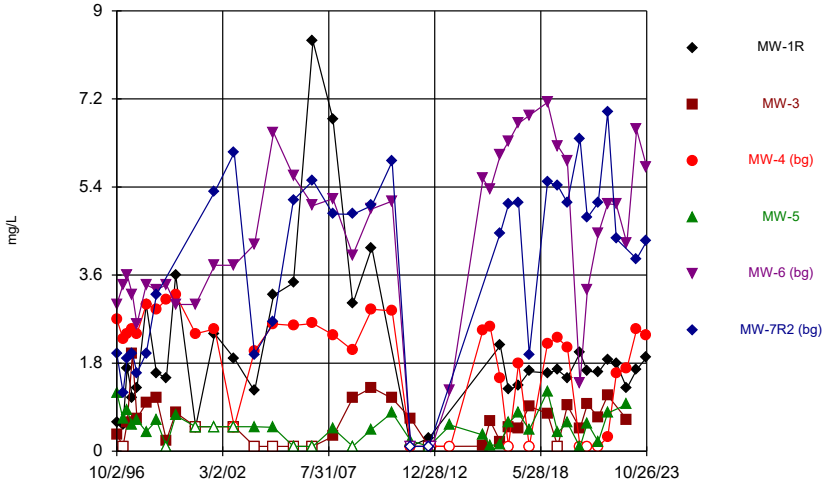
Sampling performed over multiple dates is recorded on the first date sampled. Refer to field forms for exact sample date.

Appendix D

2023 Statistical Output

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Ammonia as N Analysis Run 11/13/2023 4:05 PM View: 2023AWQR - TimeSeries
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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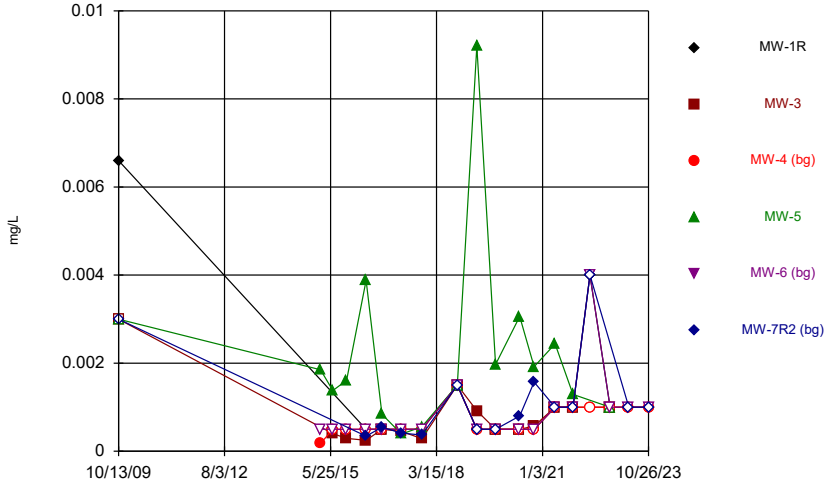
Hollow symbols indicate censored values.

Time Series



Constituent: Antimony Analysis Run 11/13/2023 4:05 PM View: 2023AWQR - TimeSeries
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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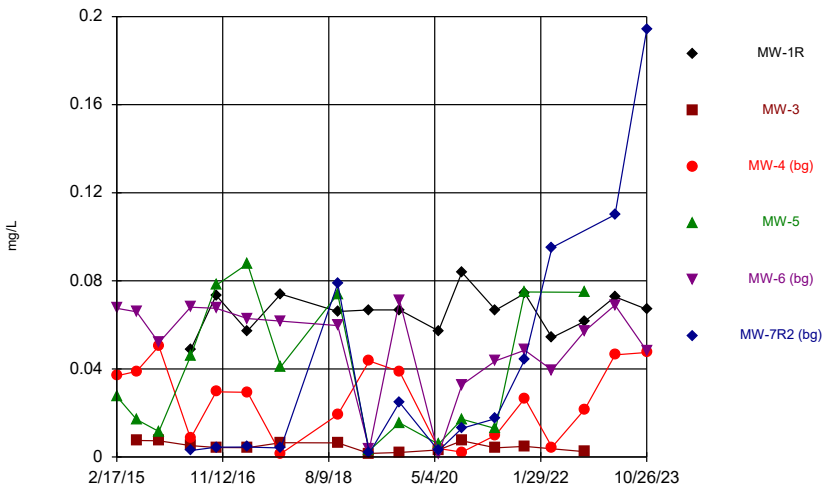
Time Series



Constituent: Arsenic Analysis Run 11/13/2023 4:05 PM View: 2023AWQR - TimeSeries
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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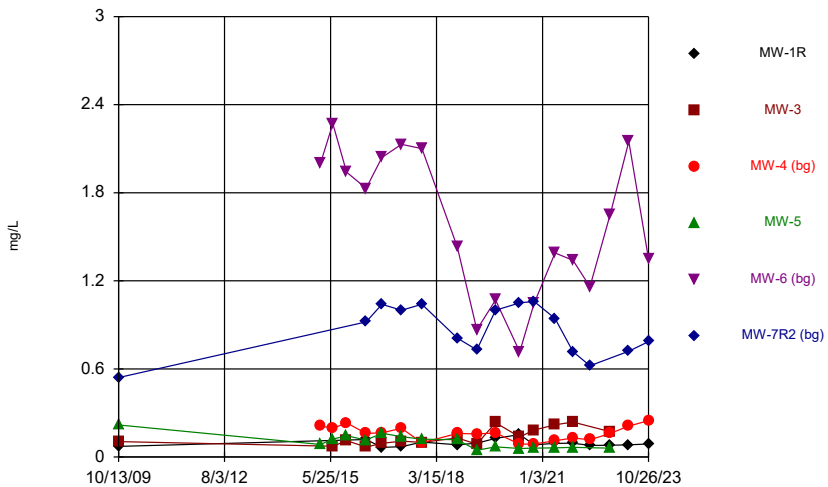
Time Series



Constituent: Barium Analysis Run 11/13/2023 4:05 PM View: 2023AWQR - TimeSeries
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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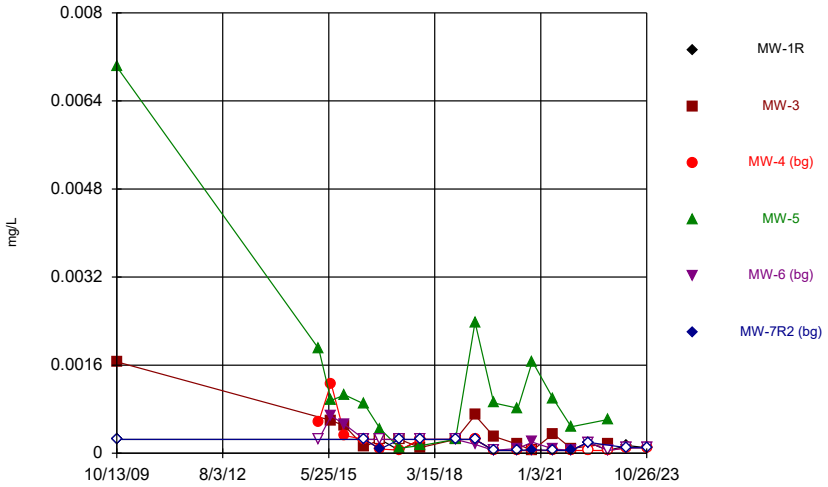
Hollow symbols indicate censored values.

Time Series



Constituent: Cadmium Analysis Run 11/13/2023 4:05 PM View: 2023AWQR - TimeSeries
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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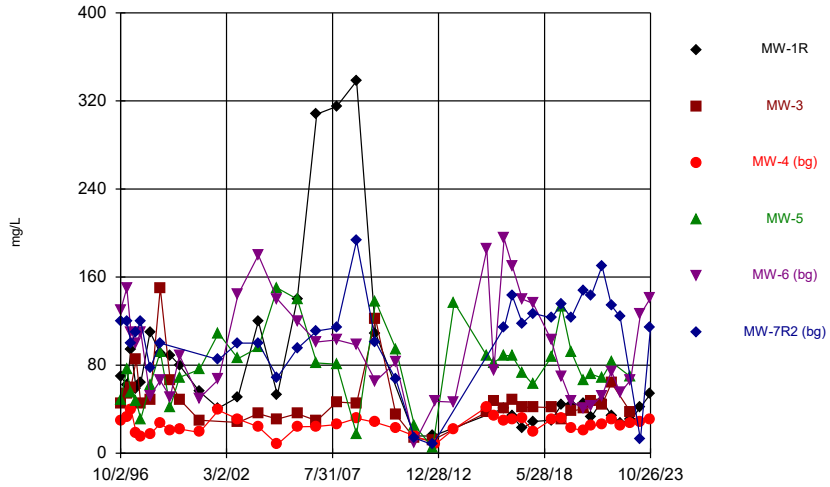
Time Series



Constituent: Chemical Oxygen Demand Analysis Run 11/13/2023 4:05 PM View: 2023AWQR - TimeSerie
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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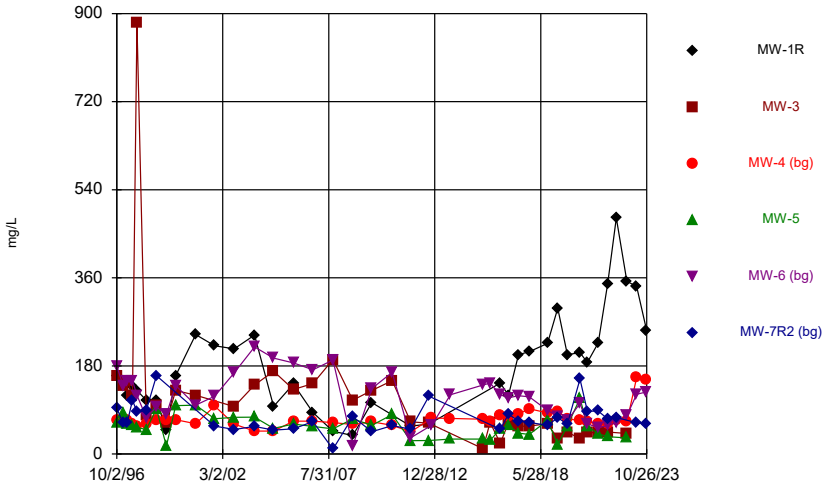
Time Series



Constituent: Chloride Analysis Run 11/13/2023 4:05 PM View: 2023AWQR - TimeSeries
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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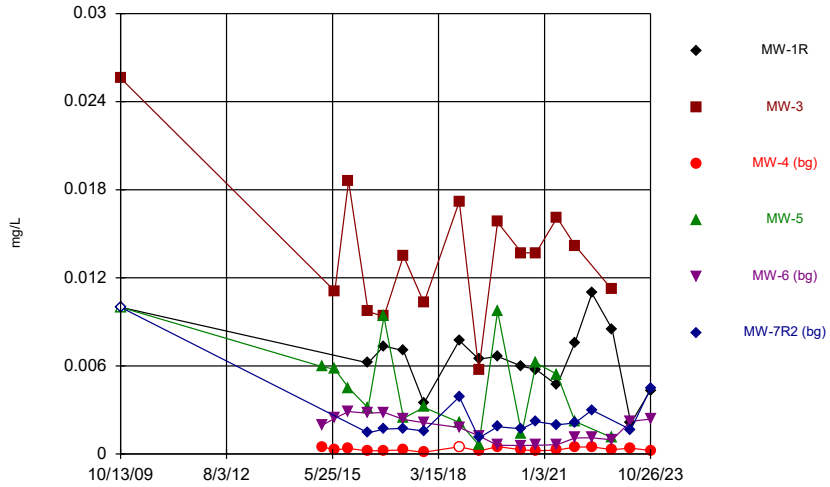
Hollow symbols indicate censored values.

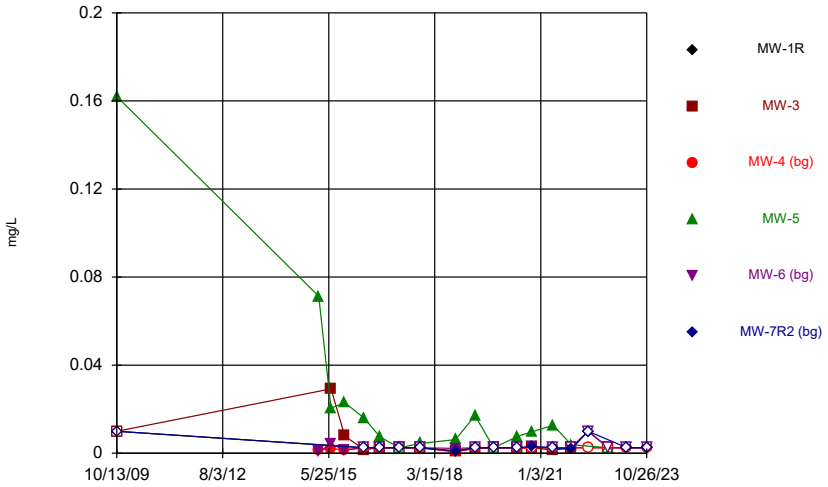
Time Series



Constituent: Cobalt Analysis Run 11/13/2023 4:06 PM View: 2023AWQR - TimeSeries
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Copper Analysis Run 11/13/2023 4:06 PM View: 2023AWQR - TimeSeries
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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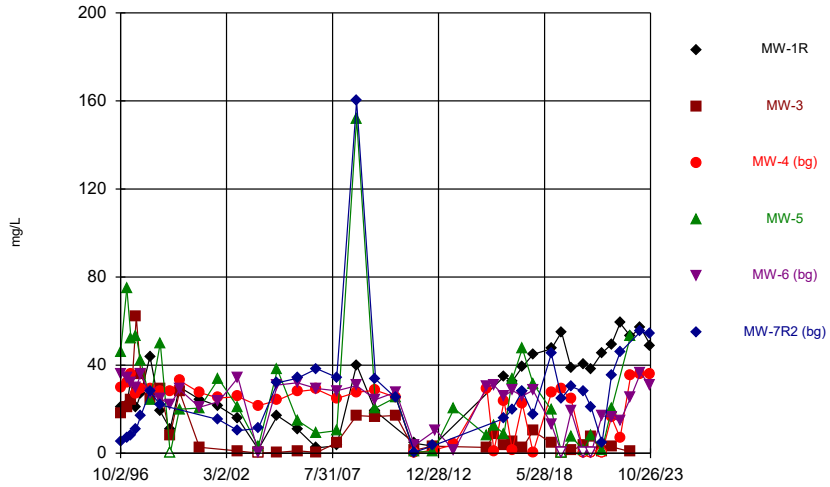
Hollow symbols indicate censored values.

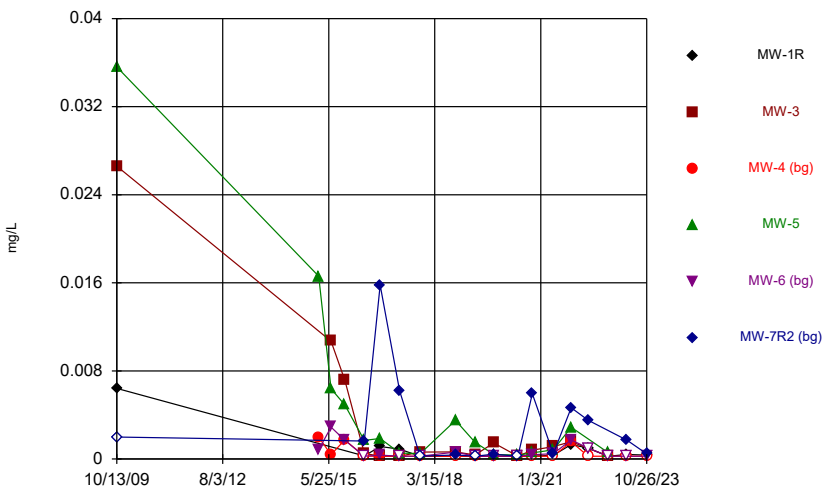
Time Series



Constituent: Iron, Dissolved Analysis Run 11/13/2023 4:06 PM View: 2023AWQR - TimeSeries
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Lead Analysis Run 11/13/2023 4:06 PM View: 2023AWQR - TimeSeries
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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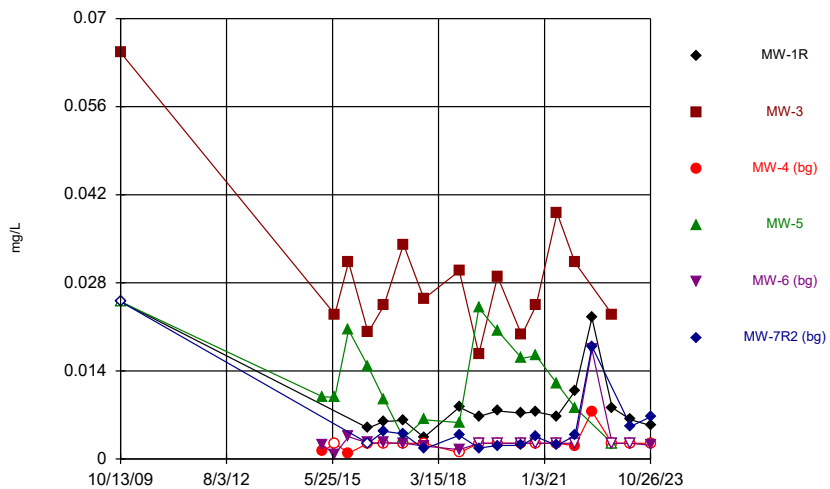
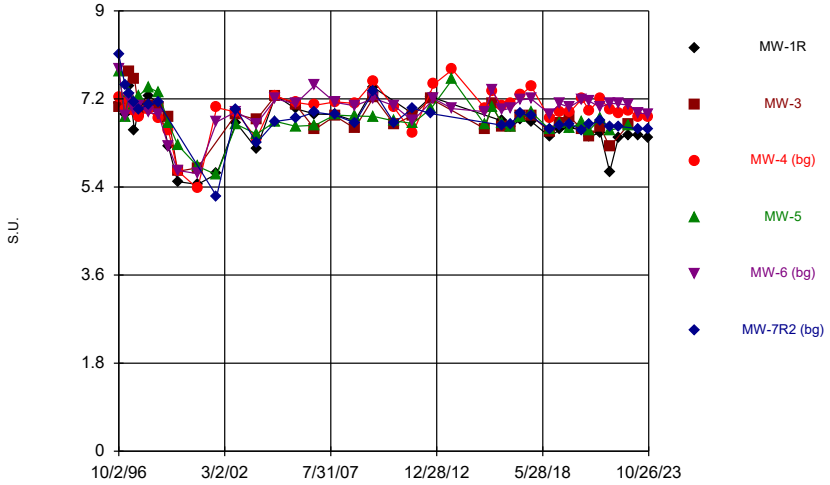
Hollow symbols indicate censored values.

Time Series



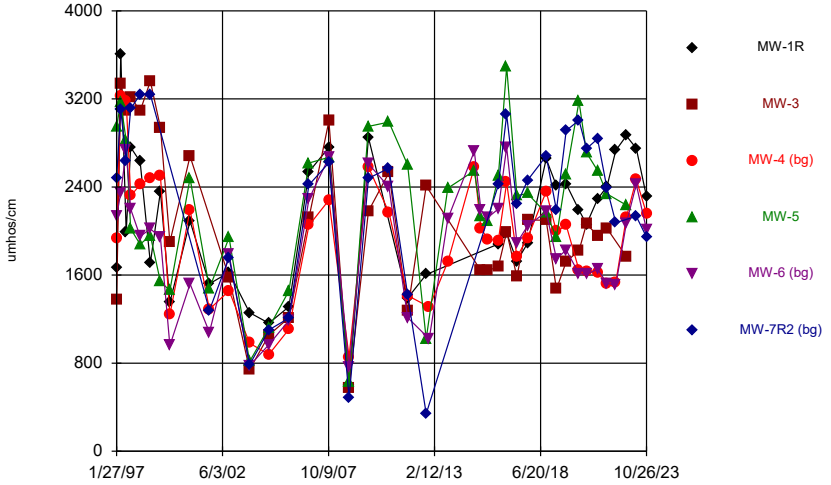
Constituent: Nickel Analysis Run 11/13/2023 4:06 PM View: 2023AWQR - TimeSeries
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

Time Series



Constituent: pH Analysis Run 11/13/2023 4:06 PM View: 2023AWQR - TimeSeries
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

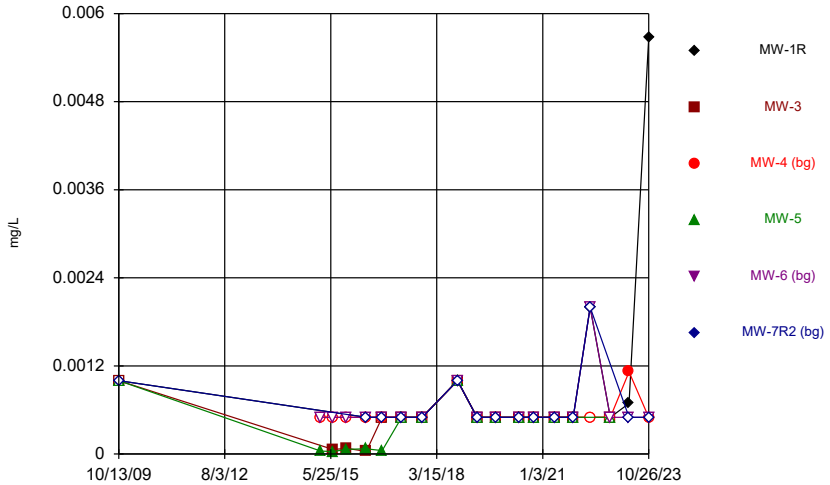
Time Series



Constituent: Specific Conductance Analysis Run 11/13/2023 4:06 PM View: 2023AWQR - TimeSeries
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

Hollow symbols indicate censored values.

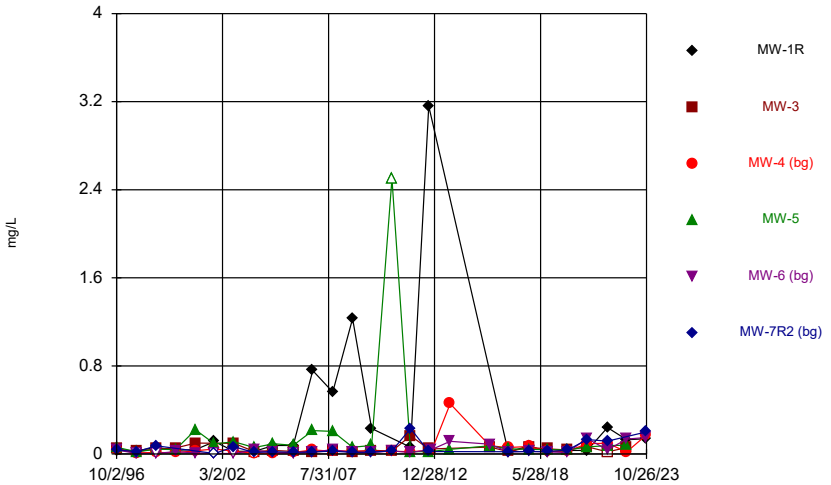
Time Series



Constituent: Thallium Analysis Run 11/13/2023 4:06 PM View: 2023AWQR - TimeSeries
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

Hollow symbols indicate censored values.

Time Series



Constituent: Total Organic Halogens Analysis Run 11/13/2023 4:06 PM View: 2023AWQR - TimeSeries
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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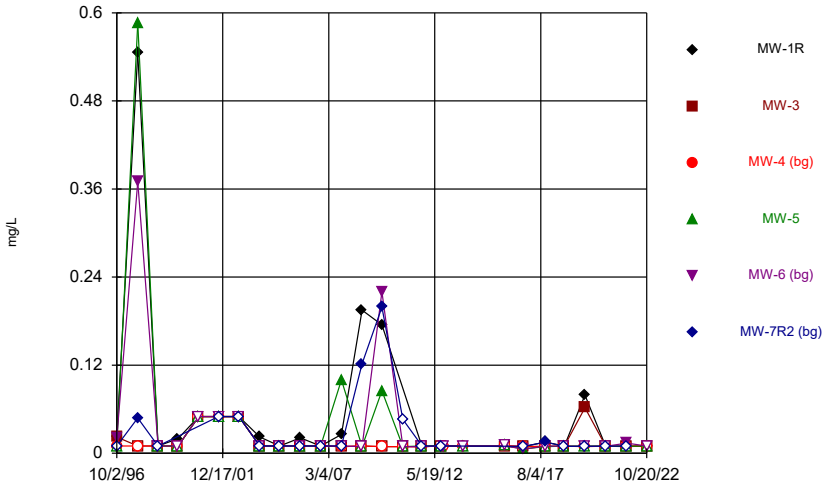
Hollow symbols indicate censored values.

Time Series



Constituent: Total Phenols Analysis Run 11/13/2023 4:06 PM View: 2023AWQR - TimeSeries
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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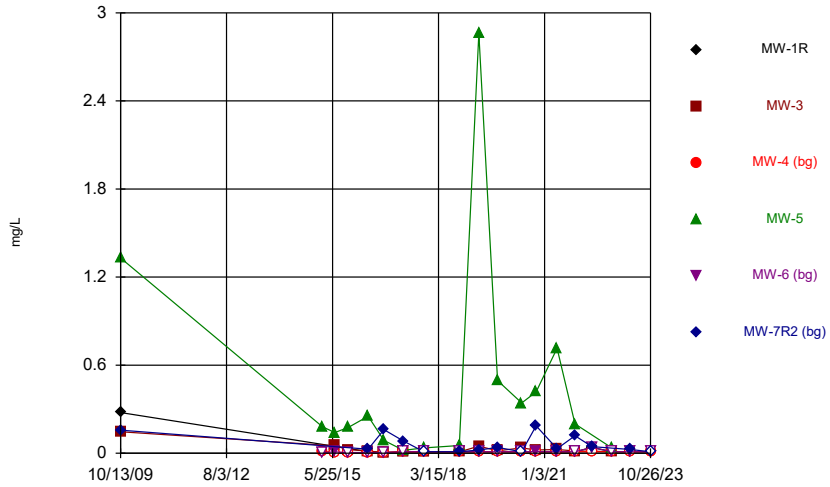
Hollow symbols indicate censored values.

Time Series



Constituent: Zinc Analysis Run 11/13/2023 4:06 PM View: 2023AWQR - TimeSeries
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

Control Limit

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas Printed 11/13/2023, 4:28 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs
Ammonia as N (mg/L)	MW-1R	7.7	n/a	4/19/2023	1.665	No	32	6.25
Arsenic (mg/L)	MW-1R	0.1084	n/a	4/19/2023	0.07275	No	13	0
Barium (mg/L)	MW-1R	1.225	n/a	4/19/2023	0.08345	No	14	0
Cadmium (mg/L)	MW-1R	0.0003431	n/a	4/19/2023	0.0001395J	No	14	78.57
Chemical Oxygen Demand (mg/L)	MW-1R	188.2	n/a	4/19/2023	41.75	No	32	0
Chloride (mg/L)	**MW-1R**	**133.1**	**n/a**	**4/19/2023**	**342.5**	**Yes**	**32**	**0**
Cobalt (mg/L)	MW-1R	0.00707	n/a	4/19/2023	0.00209	No	14	7.143
Iron, Dissolved (mg/L)	MW-1R	82.68	n/a	4/19/2023	57.1	No	32	0
Lead (mg/L)	MW-1R	0.01156	n/a	4/19/2023	0.000414J	No	14	28.57
Nickel (mg/L)	MW-1R	0.0195	n/a	4/19/2023	0.006245J	No	14	14.29
pH (S.U.)	MW-1R	7.729	5.935	4/19/2023	6.45	No	32	0
Specific Conductance (umhos/cm)	MW-1R	3861	n/a	4/19/2023	2752	No	31	0
Thallium (mg/L)	MW-1R	0.00152	n/a	4/19/2023	0.000689J	No	14	100

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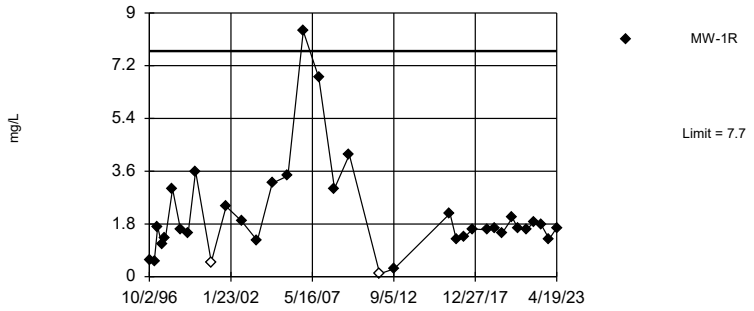
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=3.919, Std. Dev.=1.89, n=32, 6.25% NDs. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Ammonia as N Analysis Run 11/13/2023 4:28 PM View: 2023AWQR - Control Limit - Spring
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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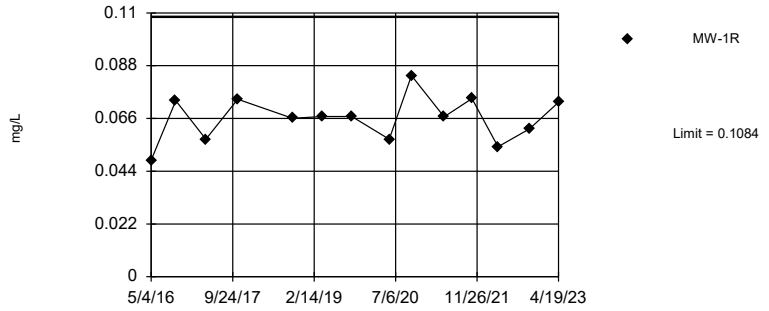
Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.03107, Std. Dev.=0.03864, n=13. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Arsenic Analysis Run 11/13/2023 4:28 PM View: 2023AWQR - Control Limit - Spring
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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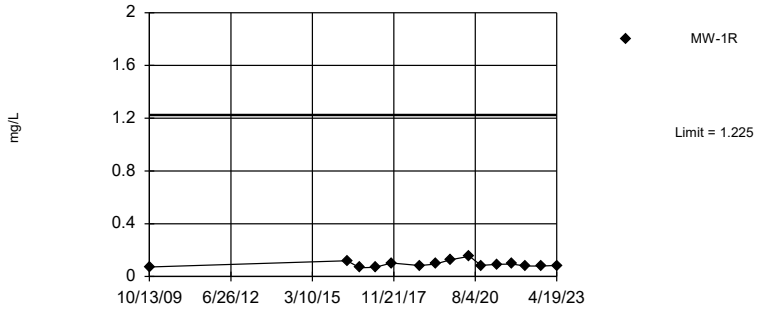
Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.871, Std. Dev.=0.1768, n=14. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Barium Analysis Run 11/13/2023 4:28 PM View: 2023AWQR - Control Limit - Spring
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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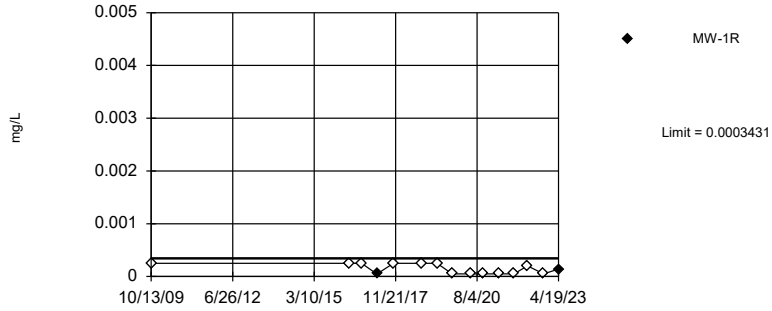
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.0001529, Std. Dev.=0.00009511, n=14, 78.57% NDs (user selected parametric test despite non-detects). Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Cadmium Analysis Run 11/13/2023 4:28 PM View: 2023AWQR - Control Limit - Spring
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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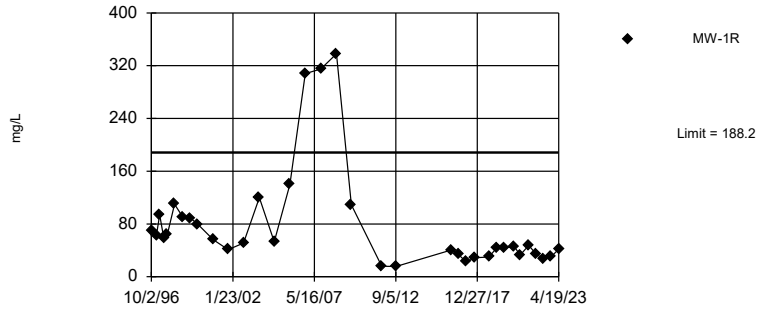
Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=106.8, Std. Dev.=40.71, n=32. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Chemical Oxygen Demand Analysis Run 11/13/2023 4:28 PM View: 2023AWQR - Control Li

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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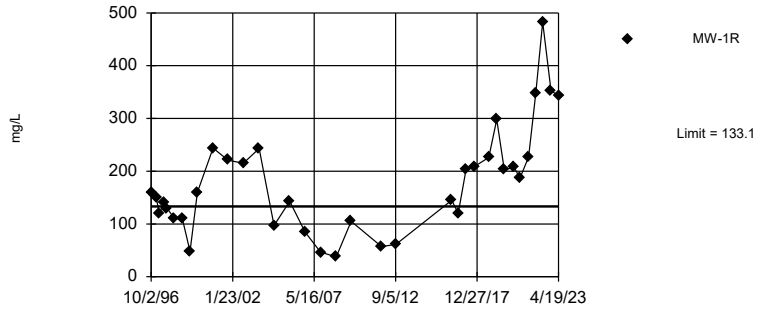
Exceeds Limit: MW-1R

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=73.48, Std. Dev.=29.8, n=32. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Chloride Analysis Run 11/13/2023 4:28 PM View: 2023AWQR - Control Limit - Spring

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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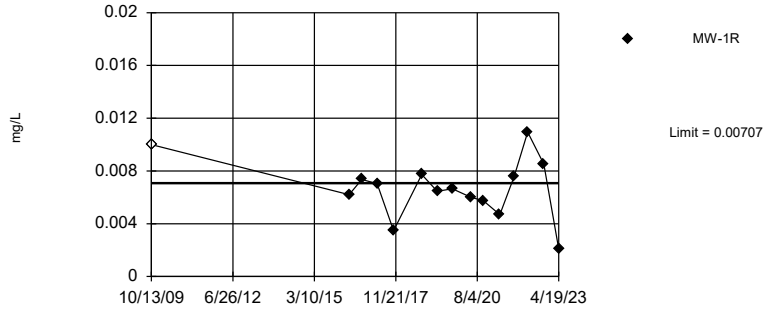
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.002569, Std. Dev.=0.00225, n=14, 7.143% NDs. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Cobalt Analysis Run 11/13/2023 4:28 PM View: 2023AWQR - Control Limit - Spring

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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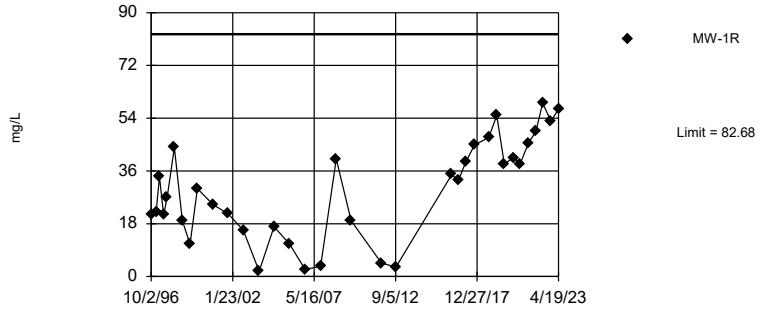
Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=27.16, Std. Dev.=27.76, n=32. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Iron, Dissolved Analysis Run 11/13/2023 4:28 PM View: 2023AWQR - Control Limit - Spring

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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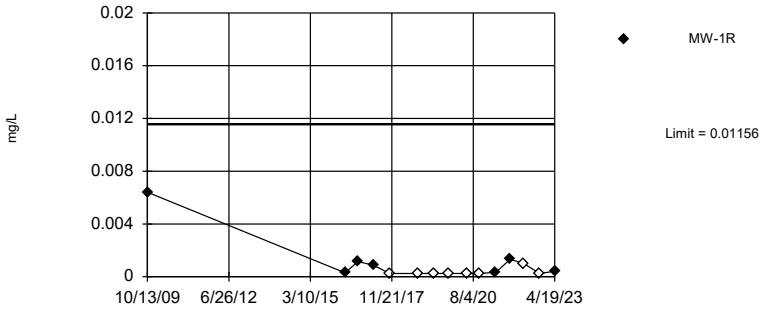
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.003103, Std. Dev.=0.004229, n=14, 28.57% NDs. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Lead Analysis Run 11/13/2023 4:28 PM View: 2023AWQR - Control Limit - Spring
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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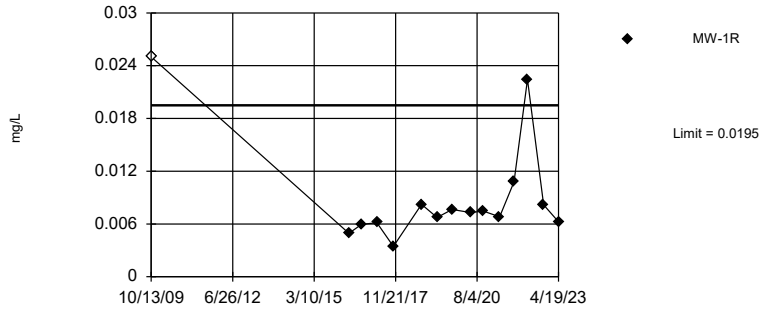
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.005701, Std. Dev.=0.0069, n=14, 14.29% NDs. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Nickel Analysis Run 11/13/2023 4:28 PM View: 2023AWQR - Control Limit - Spring
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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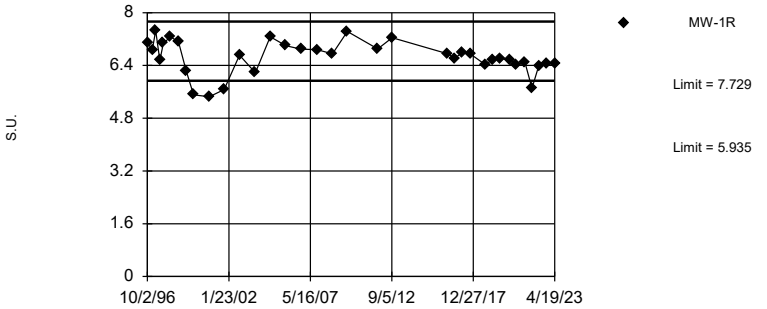
Within Limits

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=6.832, Std. Dev.=0.4485, n=32. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: pH Analysis Run 11/13/2023 4:28 PM View: 2023AWQR - Control Limit - Spring
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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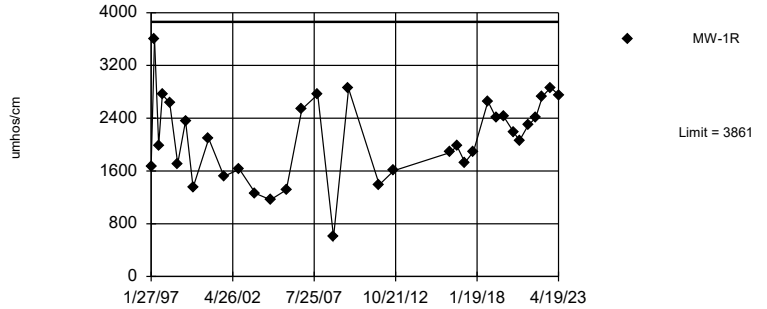
Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=2239, Std. Dev.=810.6, n=31. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

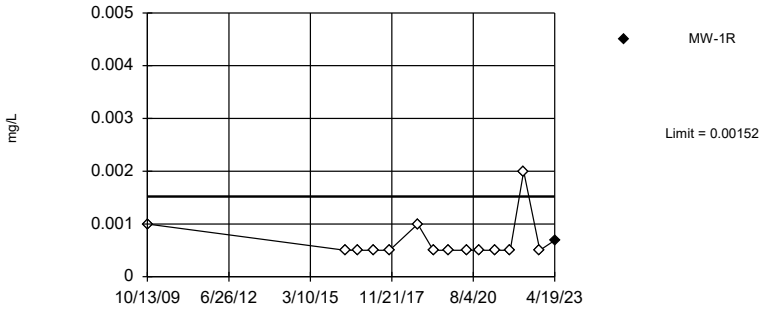
Constituent: Specific Conductance Analysis Run 11/13/2023 4:28 PM View: 2023AWQR - Control Limit -
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.0006786, Std. Dev.=0.0004209, n=14, 100% NDs (user selected parametric test despite non-detects). Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Thallium Analysis Run 11/13/2023 4:28 PM View: 2023AWQR - Control Limit - Spring

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

Control Limit

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas Printed 11/13/2023, 4:30 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs
Ammonia as N (mg/L)	MW-1R	7.654	n/a	10/26/2023	1.92	No	33	6.061
Arsenic (mg/L)	MW-1R	0.1572	n/a	10/26/2023	0.0671	No	14	0
Barium (mg/L)	MW-1R	1.209	n/a	10/26/2023	0.0885	No	15	0
Chemical Oxygen Demand (mg/L)	MW-1R	187.2	n/a	10/26/2023	53.8	No	33	0
Chloride (mg/L)	**MW-1R**	**131.9**	**n/a**	**10/26/2023**	**252**	**Yes**	**33**	**0**
Cobalt (mg/L)	MW-1R	0.007141	n/a	10/26/2023	0.00434	No	15	6.667
Iron, Dissolved (mg/L)	MW-1R	83.45	n/a	10/26/2023	49	No	33	0
Lead (mg/L)	MW-1R	0.01119	n/a	10/26/2023	0.000349J	No	15	26.67
Nickel (mg/L)	MW-1R	0.01908	n/a	10/26/2023	0.00533	No	15	13.33
pH (S.U.)	MW-1R	7.711	5.938	10/26/2023	6.41	No	33	0
Specific Conductance (umhos/cm)	MW-1R	3828	n/a	10/26/2023	2310	No	32	0
Thallium (mg/L)	**MW-1R**	**0.001483**	**n/a**	**10/26/2023**	**0.00567**	**Yes**	**15**	**100**
Total Organic Halogens (mg/L)	MW-1R	0.1777	n/a	10/26/2023	0.139	No	22	4.545

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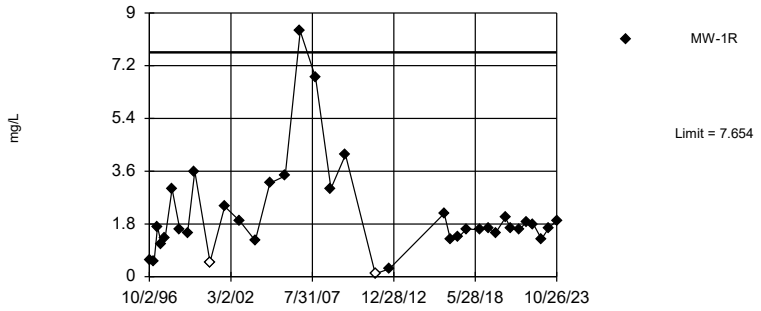
Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=3.93, Std. Dev.=1.862, n=33, 6.061% NDs. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Ammonia as N Analysis Run 11/13/2023 4:30 PM View: 2023AWQR - Control Limit - Fall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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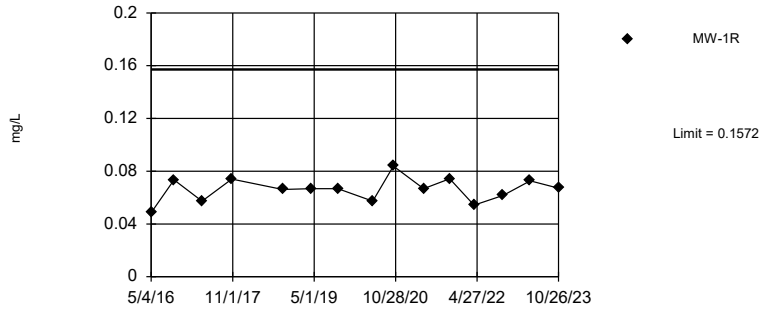
Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.04271, Std. Dev.=0.05722, n=14. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Arsenic Analysis Run 11/13/2023 4:30 PM View: 2023AWQR - Control Limit - Fall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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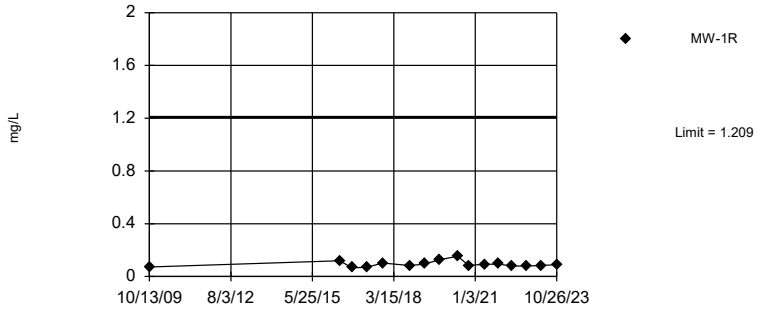
Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.8653, Std. Dev.=0.1718, n=15. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Barium Analysis Run 11/13/2023 4:30 PM View: 2023AWQR - Control Limit - Fall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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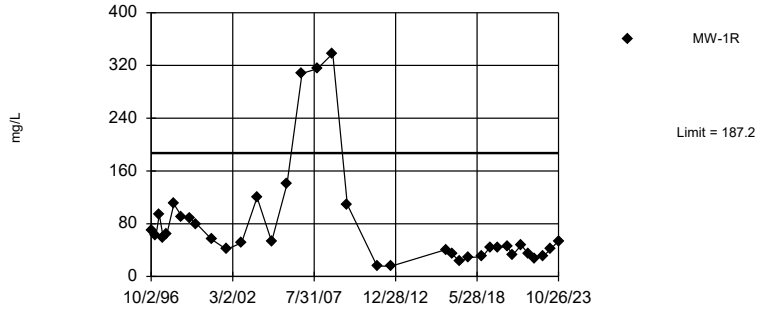
Within Limit

Prediction Limit

Interwell Parametric



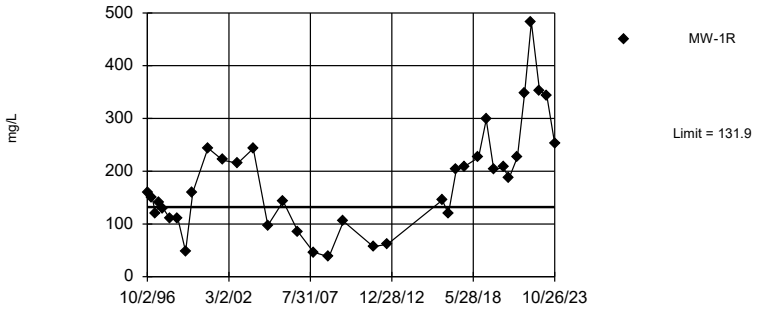
Background Data Summary: Mean=107, Std. Dev.=40.09, n=33. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Chemical Oxygen Demand Analysis Run 11/13/2023 4:30 PM View: 2023AWQR - Control Li
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

Exceeds Limit: MW-1R

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=73.15, Std. Dev.=29.4, n=33. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Chloride Analysis Run 11/13/2023 4:30 PM View: 2023AWQR - Control Limit - Fall

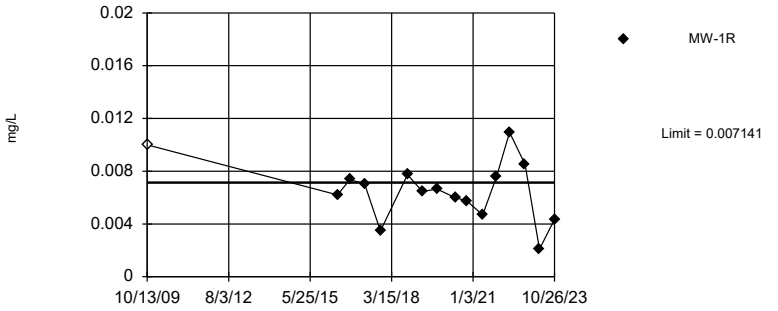
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.002695, Std. Dev.=0.002223, n=15, 6.667% NDs. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

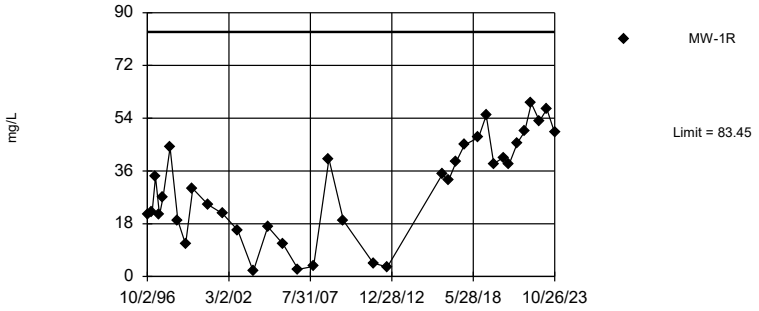
Constituent: Cobalt Analysis Run 11/13/2023 4:30 PM View: 2023AWQR - Control Limit - Fall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=27.99, Std. Dev.=27.73, n=33. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Iron, Dissolved Analysis Run 11/13/2023 4:30 PM View: 2023AWQR - Control Limit - Fall

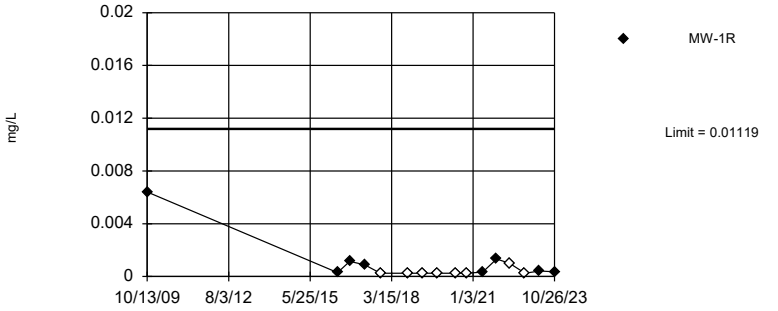
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.002928, Std. Dev.=0.004131, n=15, 26.67% NDs. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Lead Analysis Run 11/13/2023 4:30 PM View: 2023AWQR - Control Limit - Fall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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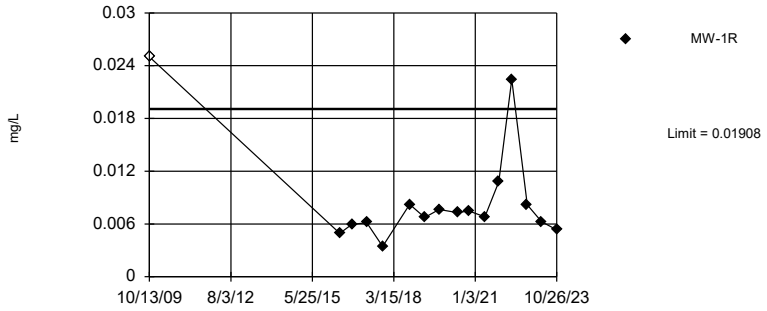
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.005767, Std. Dev.=0.006654, n=15, 13.33% NDs. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Nickel Analysis Run 11/13/2023 4:30 PM View: 2023AWQR - Control Limit - Fall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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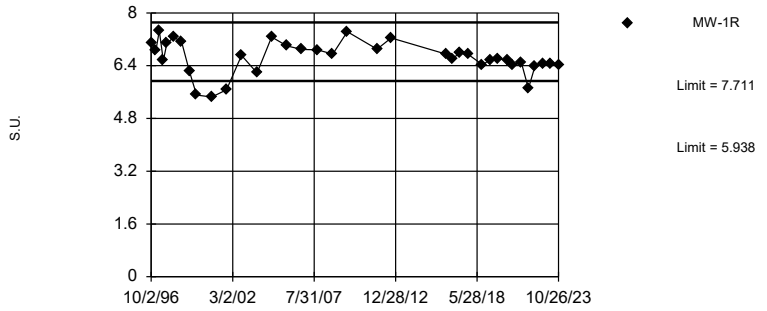
Within Limits

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=6.825, Std. Dev.=0.4435, n=33. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: pH Analysis Run 11/13/2023 4:30 PM View: 2023AWQR - Control Limit - Fall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

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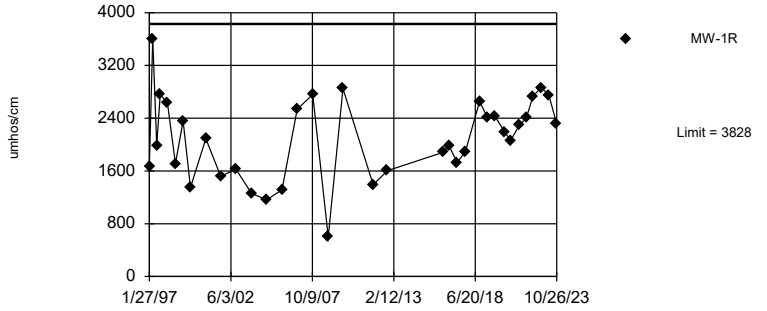
Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=2230, Std. Dev.=799.1, n=32. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

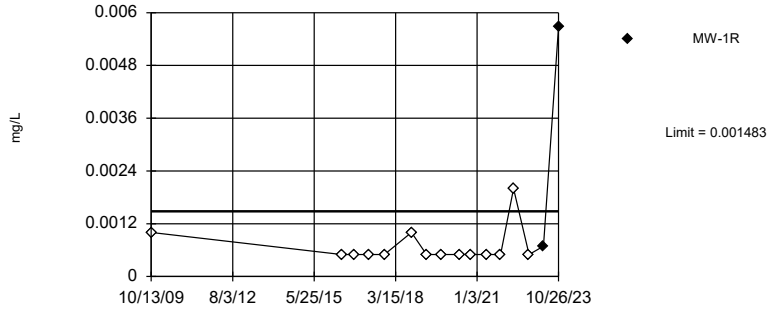
Constituent: Specific Conductance Analysis Run 11/13/2023 4:30 PM View: 2023AWQR - Control Limit - F
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Exceeds Limit: MW-1R

Prediction Limit

Interwell Parametric



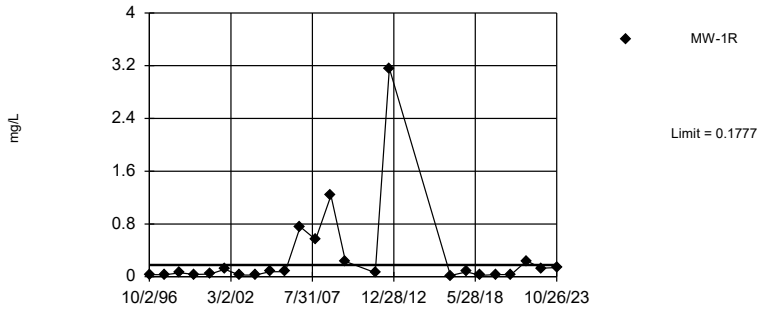
Background Data Summary: Mean=0.0006667, Std. Dev.=0.0004082, n=15, 100% NDs (user selected parametric test despite non-detects). Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Thallium Analysis Run 11/13/2023 4:30 PM View: 2023AWQR - Control Limit - Fall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.05293, Std. Dev.=0.06238, n=22, 4.545% NDs. Insufficient data to test for seasonality; not deseasonalized. Normality test was disabled. Assumes 12 future values. Kappa overridden to 2.

Constituent: Total Organic Halogens Analysis Run 11/13/2023 4:30 PM View: 2023AWQR - Control Limit - Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX CL Sanitas

Trend Test

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM Printed 11/13/2023, 4:45 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Alpha	Method
Ammonia as N (mg/L)	MW-1R	-0.04015	-2	-21	No	8	0	0.01	NP
Ammonia as N (mg/L)	MW-3	0.09606	6	21	No	8	12.5	0.01	NP
Ammonia as N (mg/L)	**MW-4 (bg)**	**0.7921**	**23**	**21**	**Yes**	**8**	**37.5**	**0.01**	**NP**
Ammonia as N (mg/L)	MW-5	0.1059	2	21	No	8	0	0.01	NP
Ammonia as N (mg/L)	MW-6 (bg)	1.19	18	21	No	8	0	0.01	NP
Ammonia as N (mg/L)	MW-7R2 (bg)	-0.3112	-13	-21	No	8	0	0.01	NP
Antimony (mg/L)	MW-5	-0.0003936	-12	-21	No	8	25	0.01	NP
Antimony (mg/L)	MW-7R2 (bg)	0.00009605	10	21	No	8	75	0.01	NP
Arsenic (mg/L)	MW-1R	-0.0004431	0	21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-3	0.0003616	4	21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-4 (bg)	0.0136	20	21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-5	0.00615	10	21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-6 (bg)	0.01335	18	21	No	8	0	0.01	NP
Arsenic (mg/L)	**MW-7R2 (bg)**	**0.04017**	**22**	**21**	**Yes**	**8**	**0**	**0.01**	**NP**
Barium (mg/L)	MW-1R	-0.002886	-8	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-3	0.03019	12	21	No	8	0	0.01	NP
Barium (mg/L)	**MW-4 (bg)**	**0.04229**	**26**	**21**	**Yes**	**8**	**0**	**0.01**	**NP**
Barium (mg/L)	MW-5	-0.0006789	0	21	No	8	0	0.01	NP
Barium (mg/L)	MW-6 (bg)	0.2914	16	21	No	8	0	0.01	NP
Barium (mg/L)	MW-7R2 (bg)	-0.1019	-12	-21	No	8	0	0.01	NP
Cadmium (mg/L)	MW-3	-0.00005345	-8	-21	No	8	25	0.01	NP
Cadmium (mg/L)	MW-5	-0.000125	-4	-21	No	8	0	0.01	NP
Cadmium (mg/L)	MW-6 (bg)	-0.000002878	-3	-21	No	8	50	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-1R	1.953	2	21	No	8	0	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-3	3.553	8	21	No	8	0	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-4 (bg)	2.849	20	21	No	8	0	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-5	-6.757	-10	-21	No	8	0	0.01	NP
Chemical Oxygen Demand (mg/L)	**MW-6 (bg)**	**29.17**	**24**	**21**	**Yes**	**8**	**0**	**0.01**	**NP**
Chemical Oxygen Demand (mg/L)	MW-7R2 (bg)	-9.98	-12	-21	No	8	0	0.01	NP
Chloride (mg/L)	MW-1R	34.13	10	21	No	8	0	0.01	NP
Chloride (mg/L)	MW-3	0.02661	0	21	No	8	0	0.01	NP
Chloride (mg/L)	MW-4 (bg)	5.682	8	21	No	8	0	0.01	NP
Chloride (mg/L)	MW-5	-9.515	-10	-21	No	8	0	0.01	NP
Chloride (mg/L)	MW-6 (bg)	12.68	14	21	No	8	0	0.01	NP
Chloride (mg/L)	MW-7R2 (bg)	-8.397	-10	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-1R	-0.0004743	-4	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-3	-0.0008782	-5	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-5	-0.0001763	-2	-21	No	8	0	0.01	NP
Cobalt (mg/L)	**MW-6 (bg)**	**0.0004932**	**24**	**21**	**Yes**	**8**	**0**	**0.01**	**NP**
Cobalt (mg/L)	MW-7R2 (bg)	0.0003207	10	21	No	8	0	0.01	NP
Copper (mg/L)	MW-5	-0.001166	-5	-21	No	8	25	0.01	NP
Iron, Dissolved (mg/L)	MW-1R	5.27	14	21	No	8	0	0.01	NP
Iron, Dissolved (mg/L)	MW-3	-0.171	-4	-21	No	8	12.5	0.01	NP
Iron, Dissolved (mg/L)	**MW-4 (bg)**	**12.09**	**23**	**21**	**Yes**	**8**	**37.5**	**0.01**	**NP**
Iron, Dissolved (mg/L)	MW-5	5.667	12	21	No	8	12.5	0.01	NP
Iron, Dissolved (mg/L)	MW-6 (bg)	9.953	19	21	No	8	25	0.01	NP
Iron, Dissolved (mg/L)	MW-7R2 (bg)	8.417	14	21	No	8	0	0.01	NP
Lead (mg/L)	MW-1R	0.00003082	7	21	No	8	50	0.01	NP
Lead (mg/L)	MW-3	0.00006604	3	21	No	8	25	0.01	NP
Lead (mg/L)	MW-4 (bg)	0	-1	-21	No	8	87.5	0.01	NP

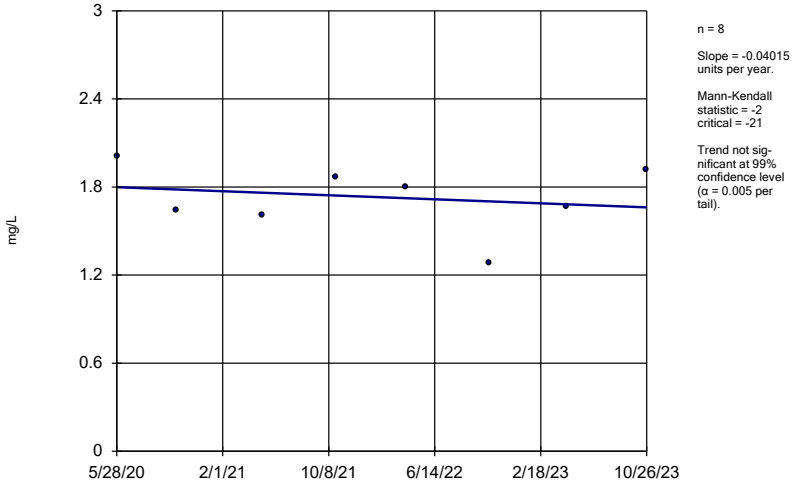
Trend Test

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM Printed 11/13/2023, 4:45 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Alpha	Method
Lead (mg/L)	MW-5	-0.0001356	-2	-21	No	8	0	0.01	NP
Lead (mg/L)	MW-6 (bg)	0	-4	-21	No	8	62.5	0.01	NP
Lead (mg/L)	MW-7R2 (bg)	0.00001442	2	21	No	8	12.5	0.01	NP
Nickel (mg/L)	MW-1R	-0.0005039	-6	-21	No	8	0	0.01	NP
Nickel (mg/L)	MW-3	0.001224	4	21	No	8	0	0.01	NP
Nickel (mg/L)	MW-4 (bg)	0	1	21	No	8	75	0.01	NP
Nickel (mg/L)	MW-5	-0.005698	-14	-21	No	8	12.5	0.01	NP
Nickel (mg/L)	MW-7R2 (bg)	0.001107	20	21	No	8	0	0.01	NP
pH (S.U.)	MW-1R	-0.03246	-8	-21	No	8	0	0.01	NP
pH (S.U.)	MW-3	-0.04156	-4	-21	No	8	0	0.01	NP
pH (S.U.)	MW-4 (bg)	-0.09737	-19	-21	No	8	0	0.01	NP
pH (S.U.)	MW-5	0.004398	1	21	No	8	0	0.01	NP
pH (S.U.)	**MW-6 (bg)**	**-0.05897**	**-22**	**-21**	**Yes**	**8**	**0**	**0.01**	**NP**
pH (S.U.)	MW-7R2 (bg)	-0.02483	-10	-21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	MW-1R	235.1	16	21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	MW-3	49.39	2	21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	MW-4 (bg)	186.5	8	21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	MW-5	20.51	2	21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	MW-6 (bg)	139.1	8	21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	**MW-7R2 (bg)**	**-283.3**	**-22**	**-21**	**Yes**	**8**	**0**	**0.01**	**NP**
Thallium (mg/L)	MW-1R	0.00008592	14	21	No	8	75	0.01	NP
Thallium (mg/L)	MW-4 (bg)	0	5	21	No	8	87.5	0.01	NP
Total Organic Halogens (mg/L)	MW-1R	0.01544	16	21	No	8	0	0.01	NP
Total Organic Halogens (mg/L)	MW-3	-0.0005628	-4	-21	No	8	12.5	0.01	NP
Total Organic Halogens (mg/L)	MW-4 (bg)	0.007844	8	21	No	8	0	0.01	NP
Total Organic Halogens (mg/L)	MW-5	0.005184	6	21	No	8	0	0.01	NP
Total Organic Halogens (mg/L)	MW-6 (bg)	0.01667	16	21	No	8	0	0.01	NP
Total Organic Halogens (mg/L)	**MW-7R2 (bg)**	**0.01756**	**22**	**21**	**Yes**	**8**	**0**	**0.01**	**NP**
Total Phenols (mg/L)	MW-1R	0.00002481	2	21	No	8	75	0.01	NP
Total Phenols (mg/L)	MW-3	0.00002863	4	21	No	8	87.5	0.01	NP
Total Phenols (mg/L)	MW-6 (bg)	0.00009409	5	21	No	8	75	0.01	NP
Zinc (mg/L)	MW-3	-0.004993	-6	-21	No	8	0	0.01	NP
Zinc (mg/L)	MW-5	-0.1358	-8	-21	No	8	0	0.01	NP
Zinc (mg/L)	MW-7R2 (bg)	-0.006451	-7	-21	No	8	25	0.01	NP

Sen's Slope Estimator

MW-1R



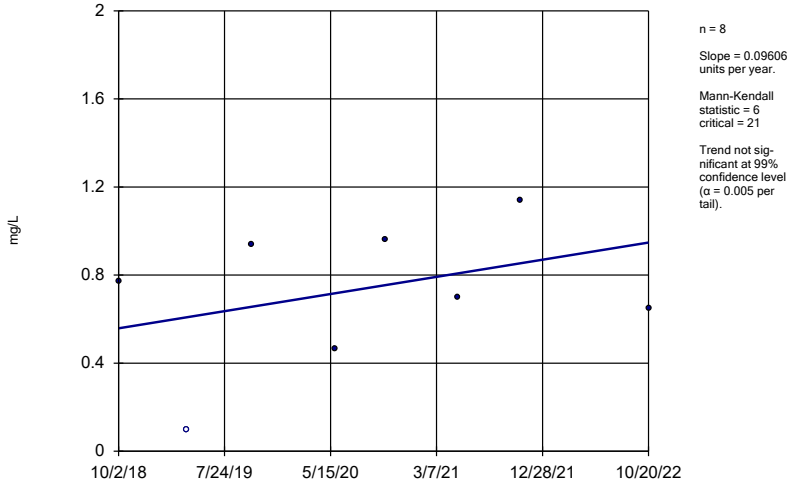
Constituent: Ammonia as N Analysis Run 11/13/2023 4:41 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-3



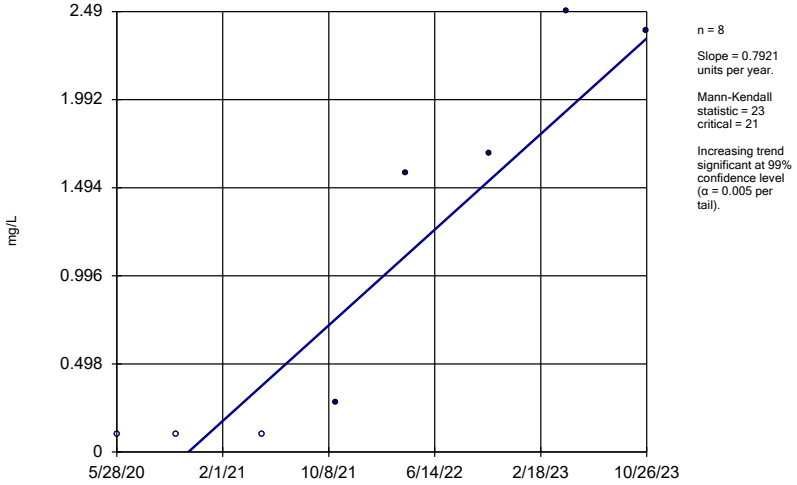
Constituent: Ammonia as N Analysis Run 11/13/2023 4:41 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-4 (bg)

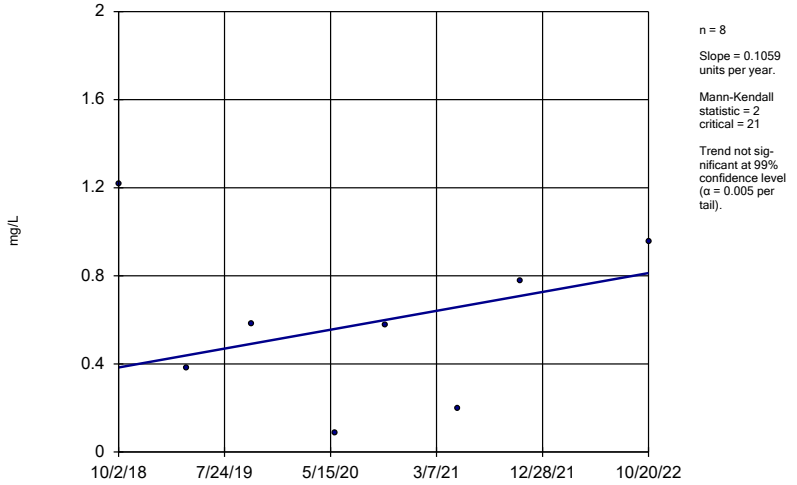


Constituent: Ammonia as N Analysis Run 11/13/2023 4:41 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

MW-5

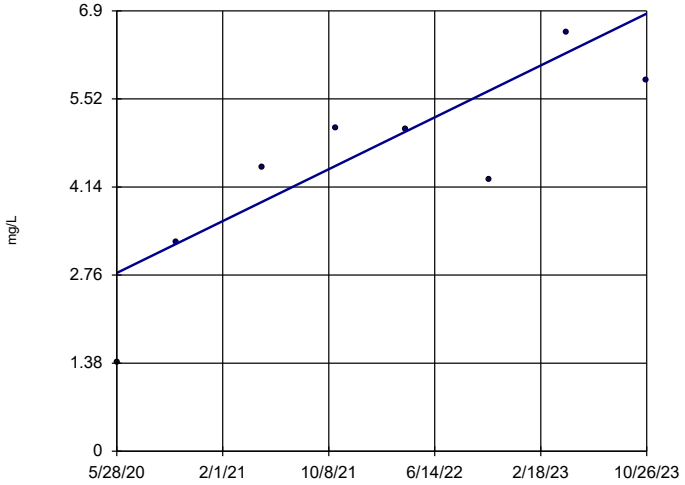


Constituent: Ammonia as N Analysis Run 11/13/2023 4:41 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

MW-6 (bg)



n = 8

Slope = 1.19 units per year.

Mann-Kendall statistic = 18 critical = 21

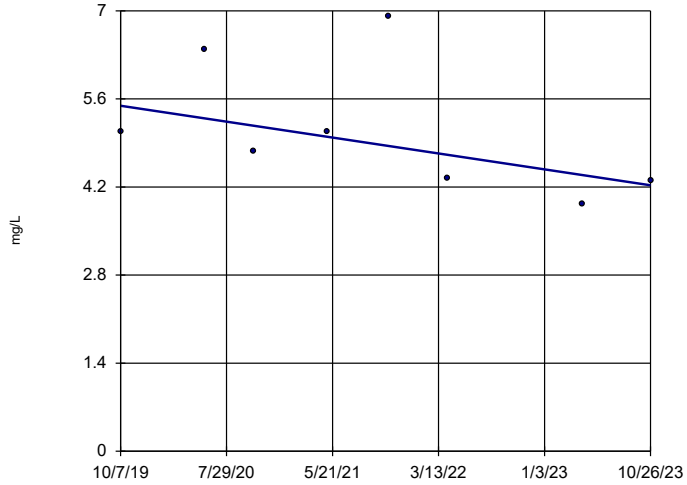
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Ammonia as N Analysis Run 11/13/2023 4:41 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

MW-7R2 (bg)



n = 8

Slope = -0.3112 units per year.

Mann-Kendall statistic = -13 critical = -21

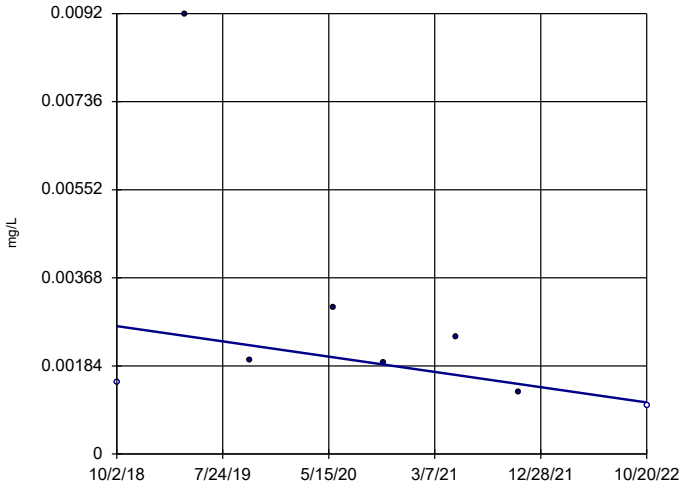
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Ammonia as N Analysis Run 11/13/2023 4:41 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

MW-5



n = 8

Slope = -0.0003936 units per year.

Mann-Kendall statistic = -12 critical = -21

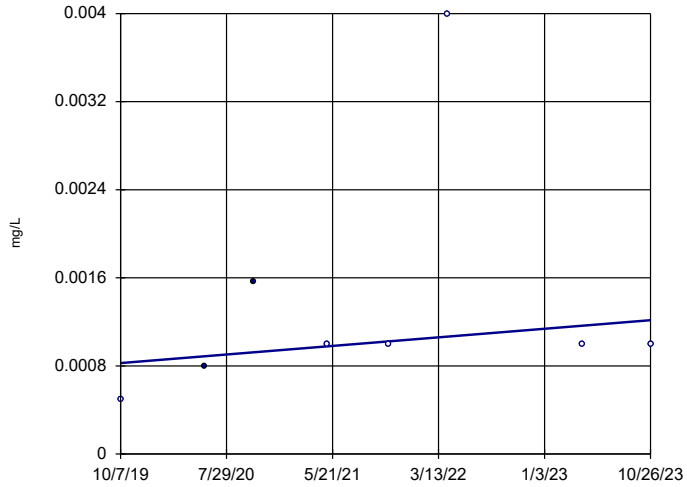
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Antimony Analysis Run 11/13/2023 4:41 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

MW-7R2 (bg)



n = 8

Slope = 0.00009605 units per year.

Mann-Kendall statistic = 10 critical = 21

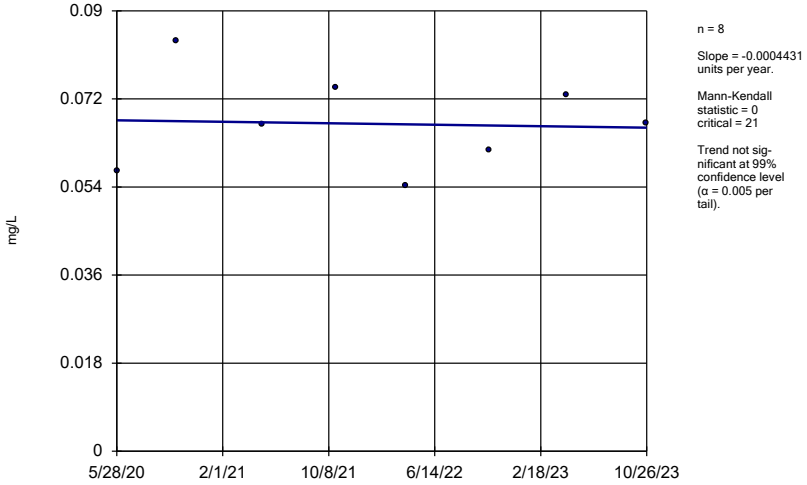
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Antimony Analysis Run 11/13/2023 4:41 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

MW-1R



Constituent: Arsenic Analysis Run 11/13/2023 4:41 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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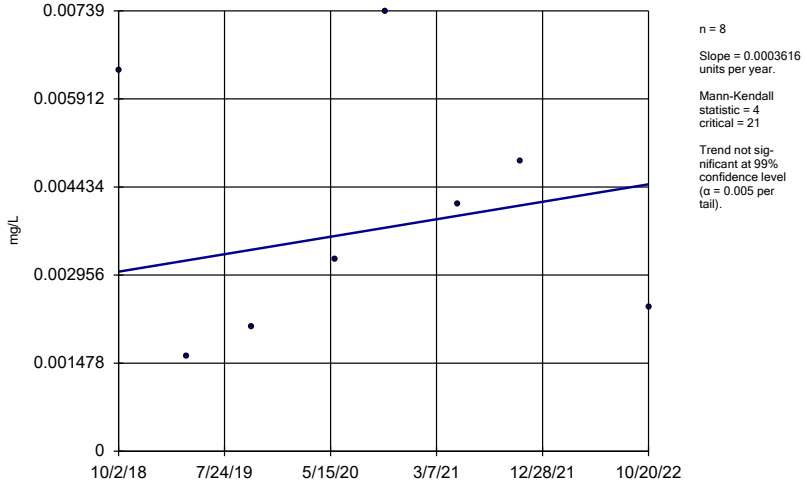
Sen's Slope Estimator

MW-3

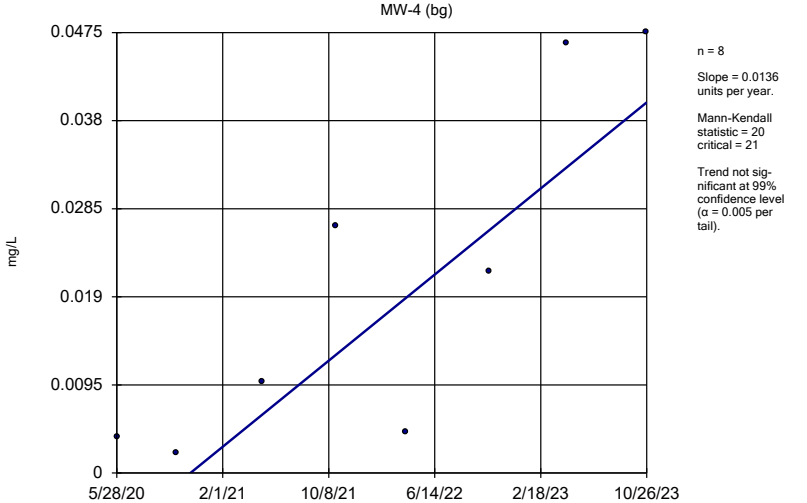


Constituent: Arsenic Analysis Run 11/13/2023 4:41 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-4 (bg)

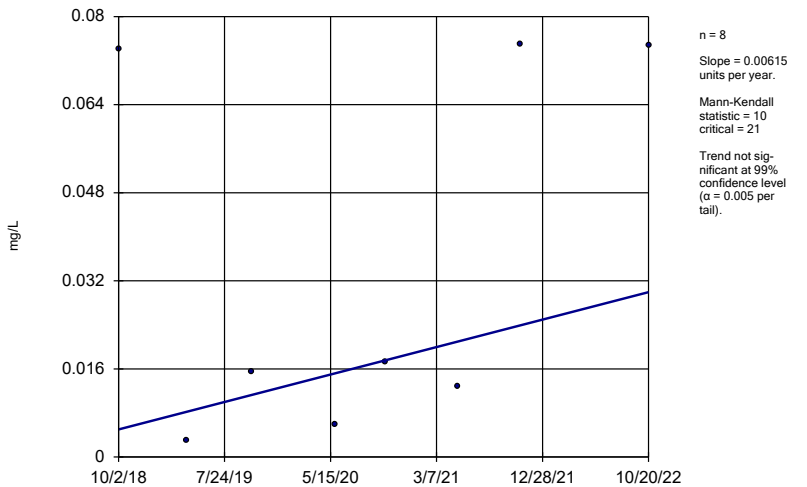


Constituent: Arsenic Analysis Run 11/13/2023 4:41 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

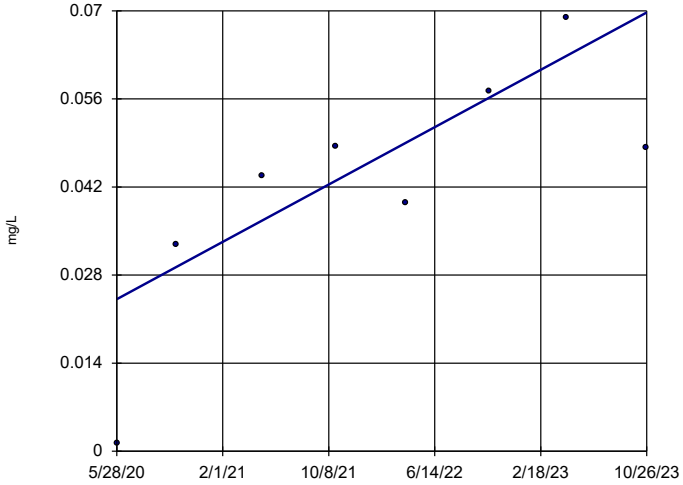
MW-5



Constituent: Arsenic Analysis Run 11/13/2023 4:41 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

MW-6 (bg)



n = 8

Slope = 0.01335 units per year.

Mann-Kendall statistic = 18
critical = 21

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

Constituent: Arsenic Analysis Run 11/13/2023 4:41 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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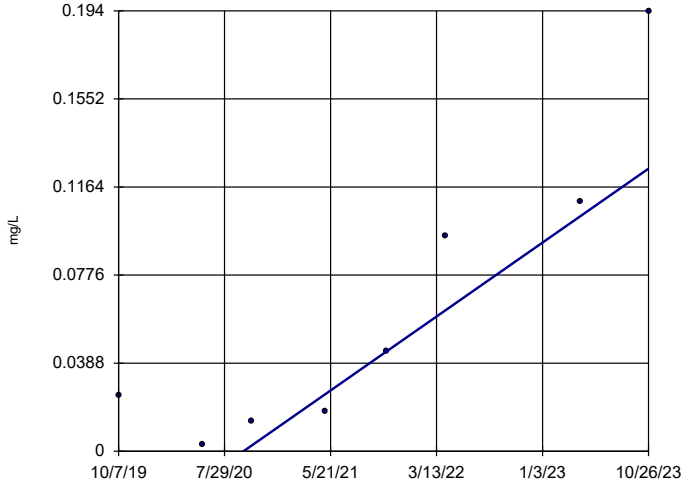
Sen's Slope Estimator

MW-7R2 (bg)



n = 8

Slope = 0.04017 units per year.

Mann-Kendall statistic = 22
critical = 21

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 11/13/2023 4:41 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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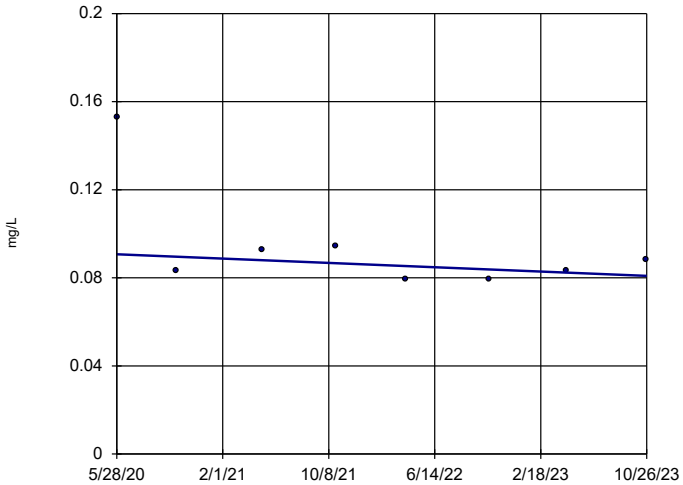
Sen's Slope Estimator

MW-1R



n = 8

Slope = -0.002886 units per year.

Mann-Kendall statistic = -8
critical = -21

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

Constituent: Barium Analysis Run 11/13/2023 4:41 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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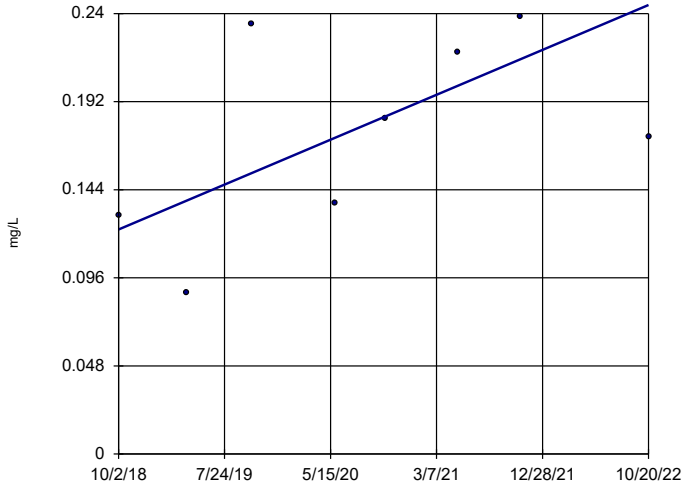
Sen's Slope Estimator

MW-3



n = 8

Slope = 0.03019 units per year.

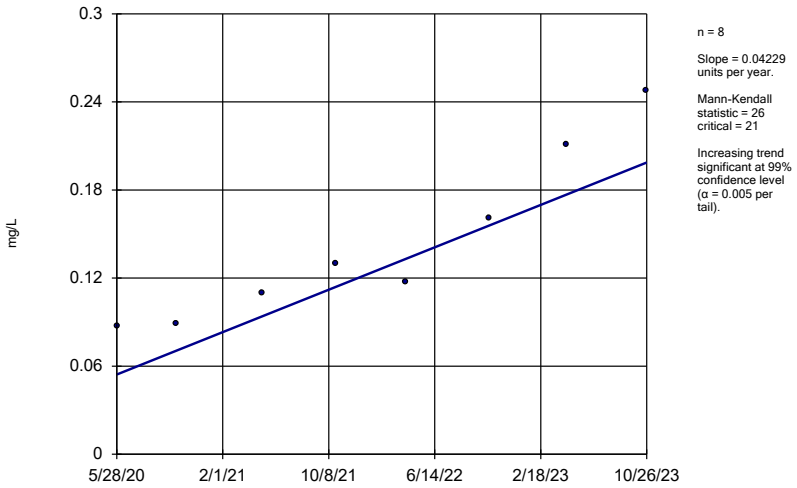
Mann-Kendall statistic = 12
critical = 21

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

Constituent: Barium Analysis Run 11/13/2023 4:41 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = 0.04229 units per year.

Mann-Kendall statistic = 26
critical = 21

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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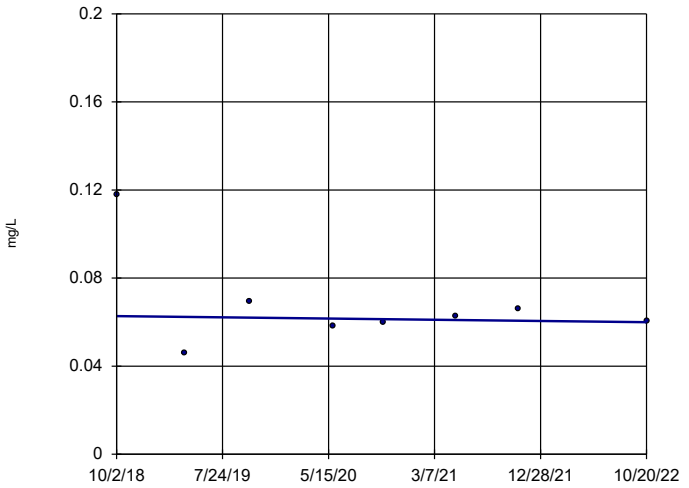
Sen's Slope Estimator

MW-5



n = 8

Slope = -0.0006789 units per year.

Mann-Kendall statistic = 0
critical = 21

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

Constituent: Barium Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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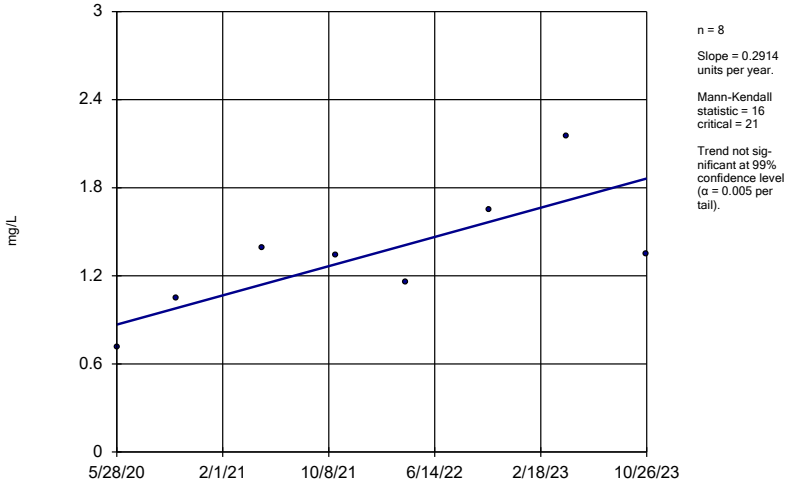
Sen's Slope Estimator

MW-6 (bg)



n = 8

Slope = 0.2914 units per year.

Mann-Kendall statistic = 16
critical = 21

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

Constituent: Barium Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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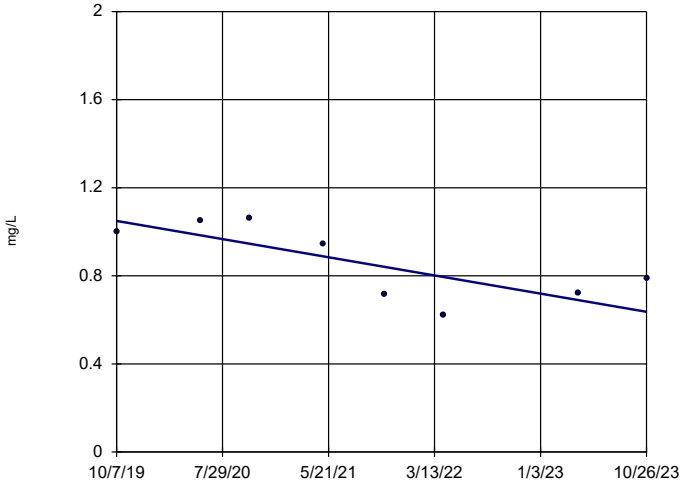
Sen's Slope Estimator

MW-7R2 (bg)



n = 8

Slope = -0.1019 units per year.

Mann-Kendall statistic = -12
critical = -21

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

Constituent: Barium Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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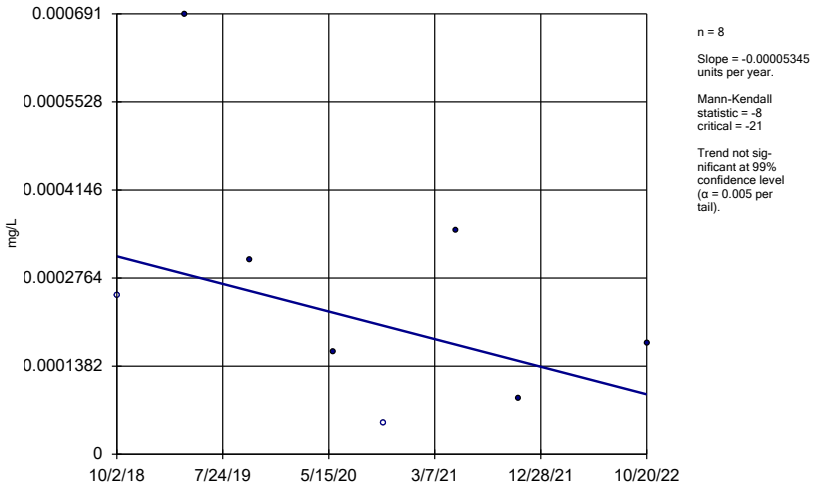
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-3

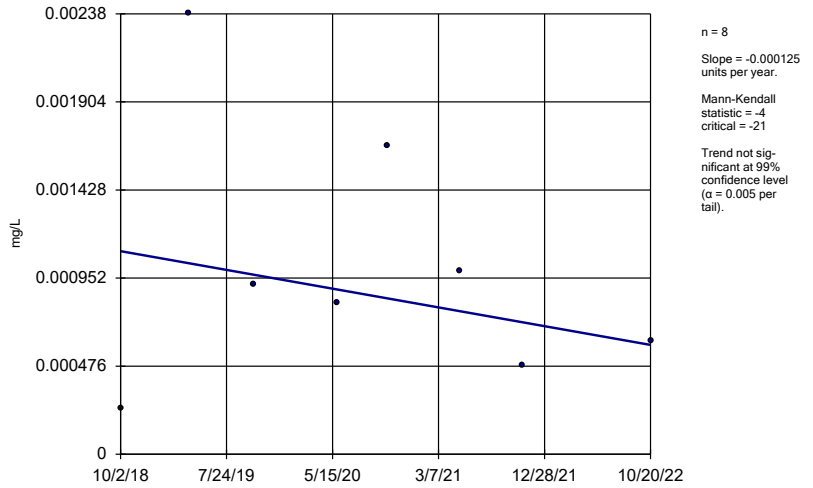


Constituent: Cadmium Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-5



Constituent: Cadmium Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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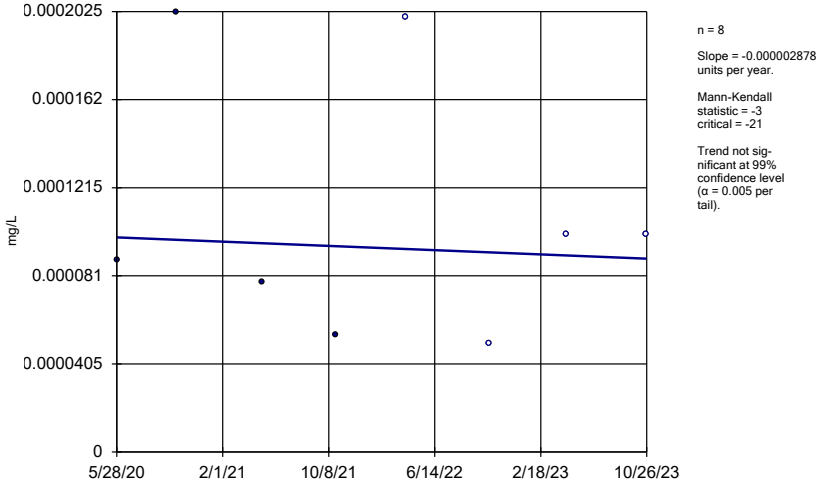
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-6 (bg)



Constituent: Cadmium Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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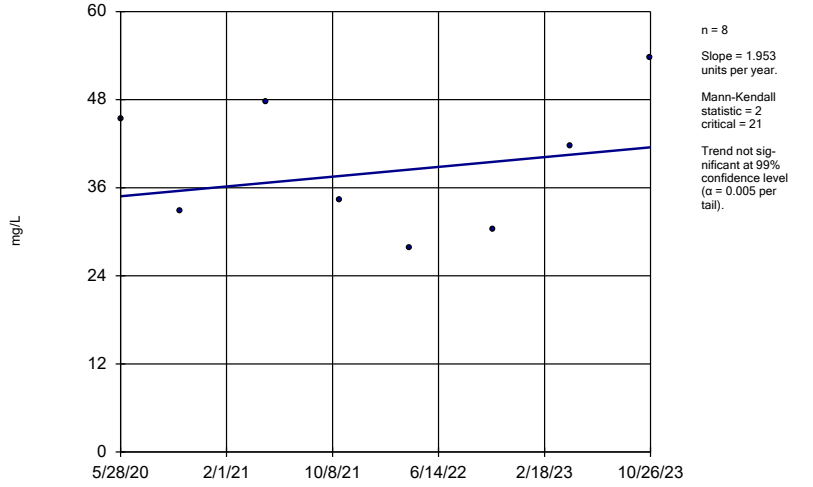
Sen's Slope Estimator

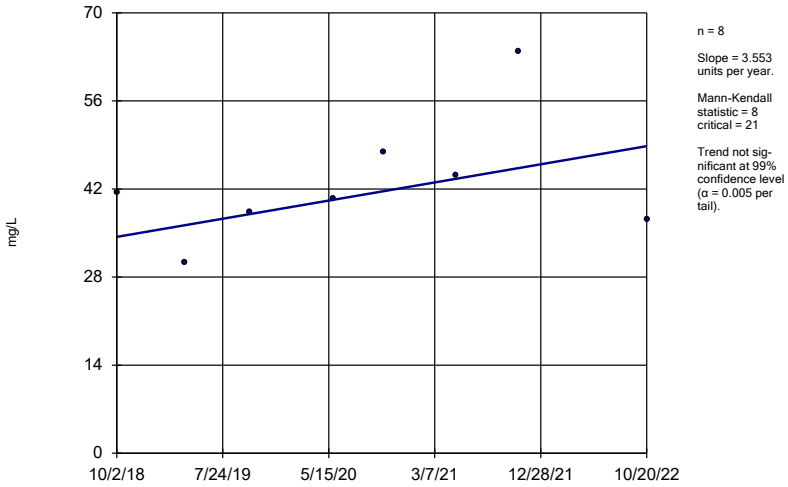
MW-1R



Constituent: Chemical Oxygen Demand Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKend
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

MW-3



Constituent: Chemical Oxygen Demand Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKend
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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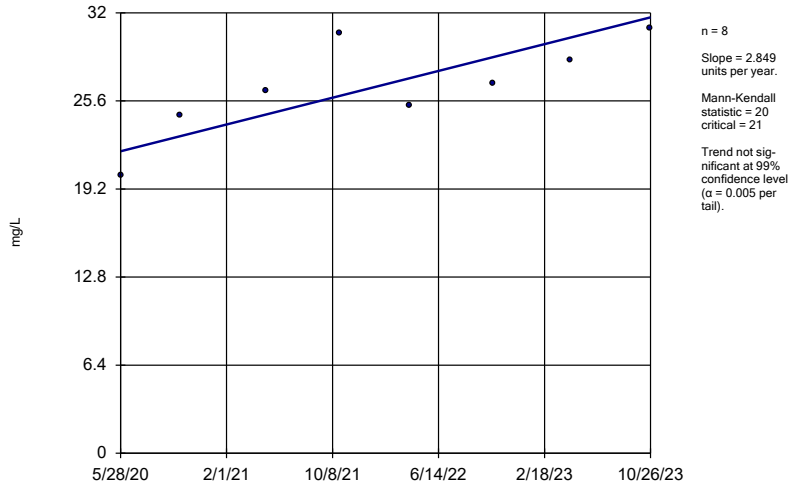
Sen's Slope Estimator

MW-4 (bg)

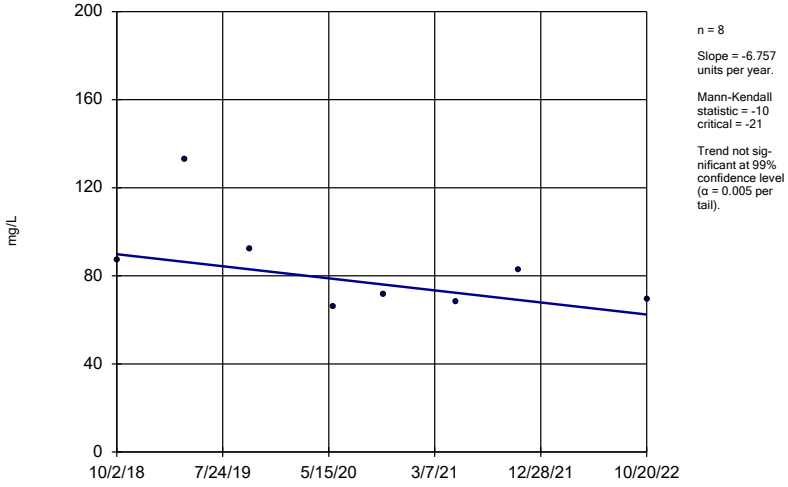


Constituent: Chemical Oxygen Demand Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKend
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-5



Constituent: Chemical Oxygen Demand Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKend
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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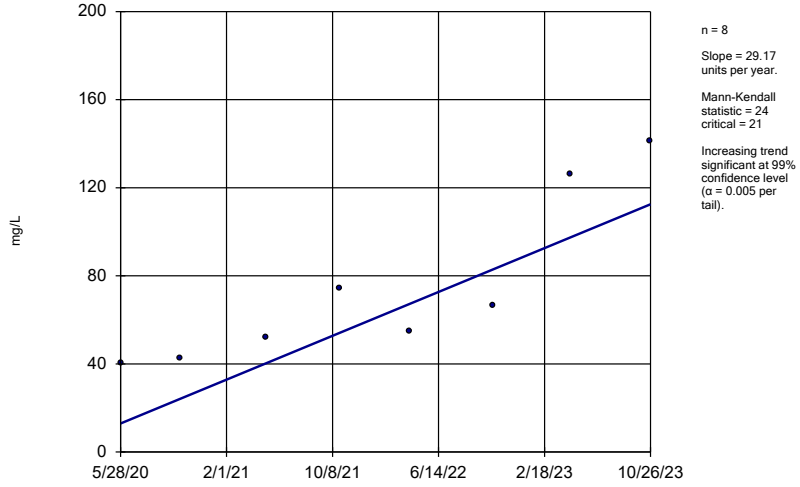
Sen's Slope Estimator

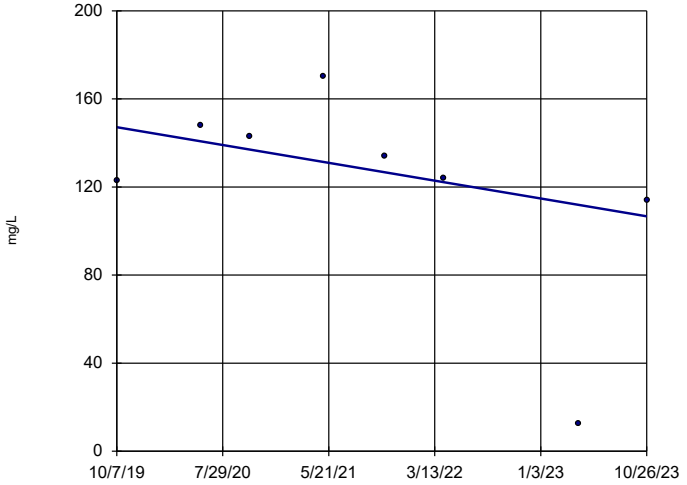
MW-6 (bg)



Constituent: Chemical Oxygen Demand Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKend
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

MW-7R2 (bg)



n = 8

Slope = -9.98 units per year.

Mann-Kendall statistic = -12 critical = -21

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

Constituent: Chemical Oxygen Demand Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKend

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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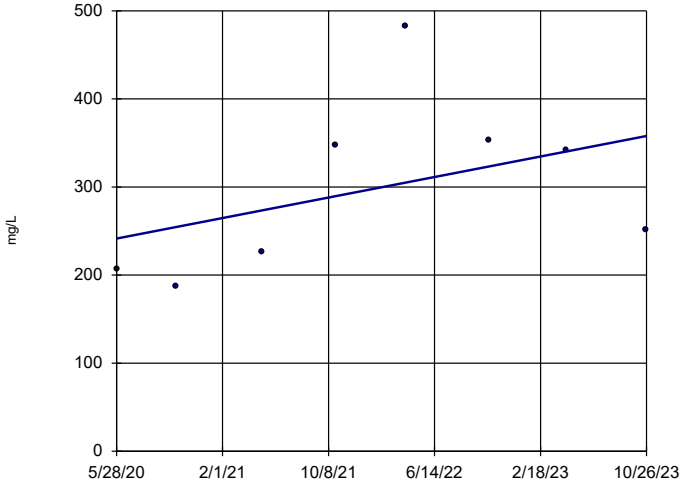
Sen's Slope Estimator

MW-1R



n = 8

Slope = 34.13 units per year.

Mann-Kendall statistic = 10 critical = 21

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

Constituent: Chloride Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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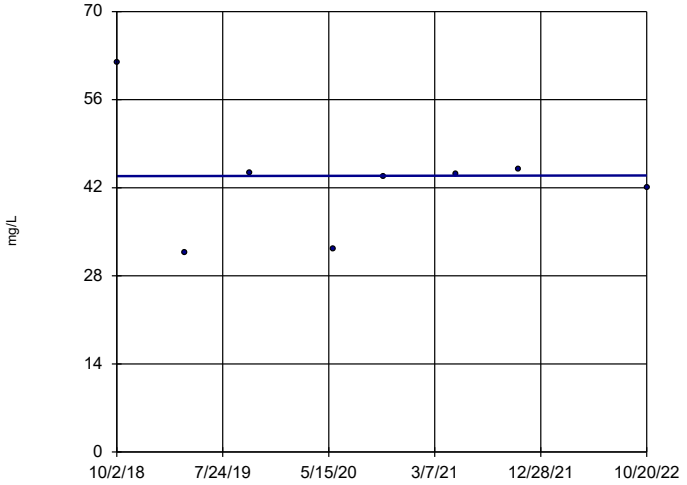
Sen's Slope Estimator

MW-3



n = 8

Slope = 0.02661 units per year.

Mann-Kendall statistic = 0 critical = 21

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

Constituent: Chloride Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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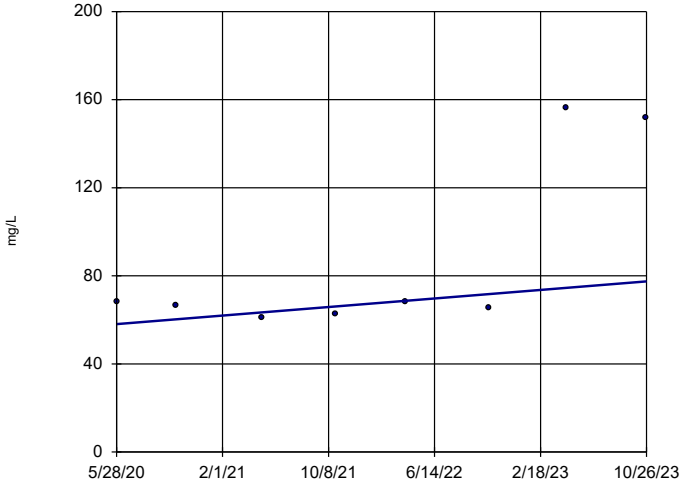
Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = 5.682 units per year.

Mann-Kendall statistic = 8 critical = 21

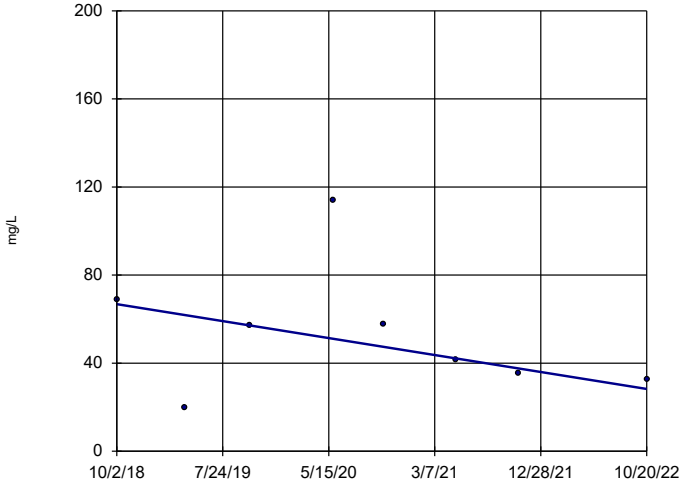
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

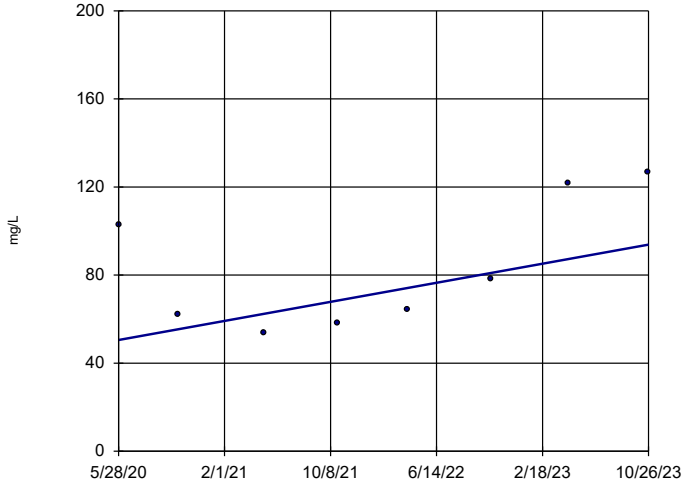
MW-5



Constituent: Chloride Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

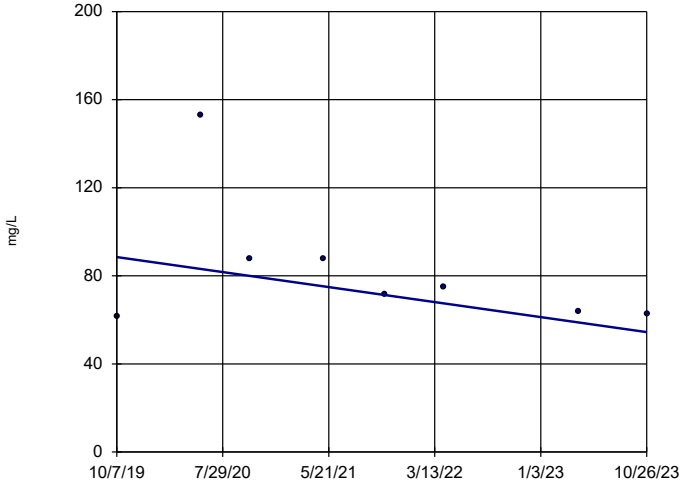
MW-6 (bg)



Constituent: Chloride Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

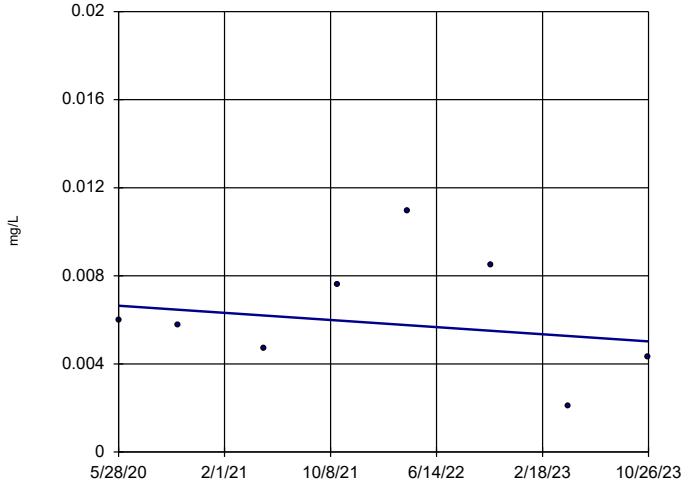
MW-7R2 (bg)



Constituent: Chloride Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

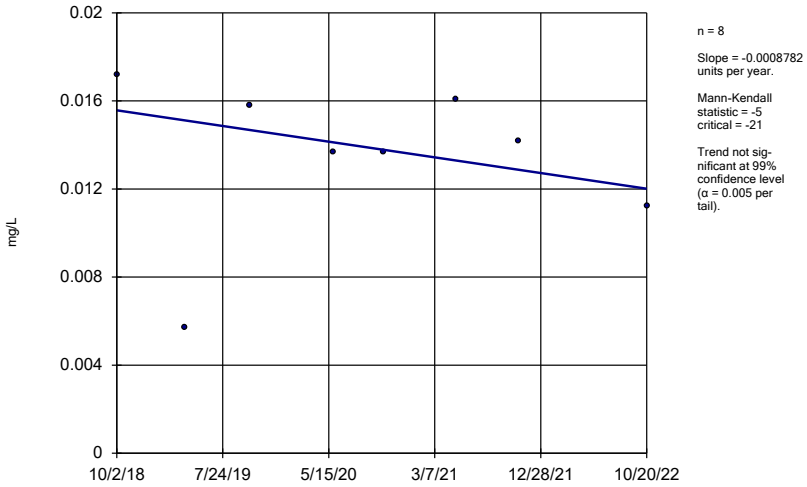
MW-1R



Constituent: Cobalt Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

MW-3



n = 8

Slope = -0.0008782 units per year.

Mann-Kendall statistic = -5
critical = -21

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

Constituent: Cobalt Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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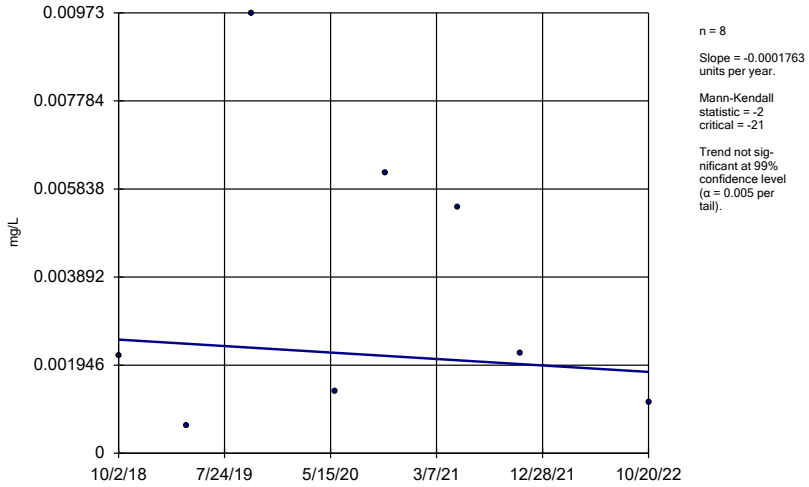
Sen's Slope Estimator

MW-5



n = 8

Slope = -0.0001763 units per year.

Mann-Kendall statistic = -2
critical = -21

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

Constituent: Cobalt Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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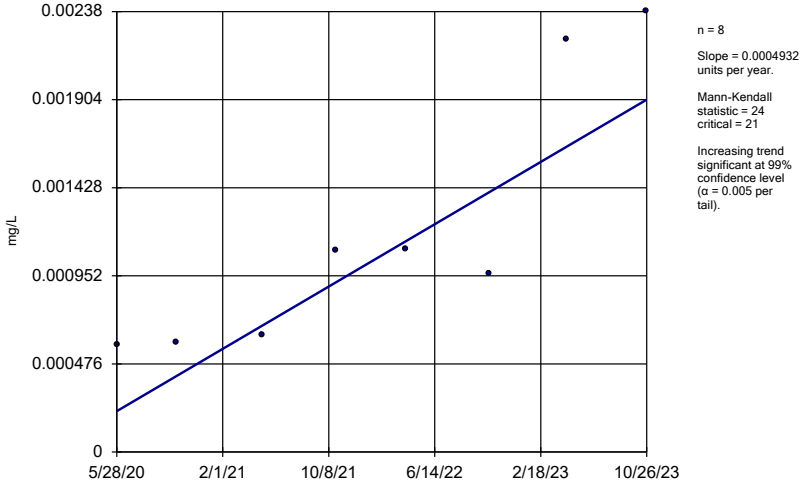
Sen's Slope Estimator

MW-6 (bg)



n = 8

Slope = 0.0004932 units per year.

Mann-Kendall statistic = 24
critical = 21

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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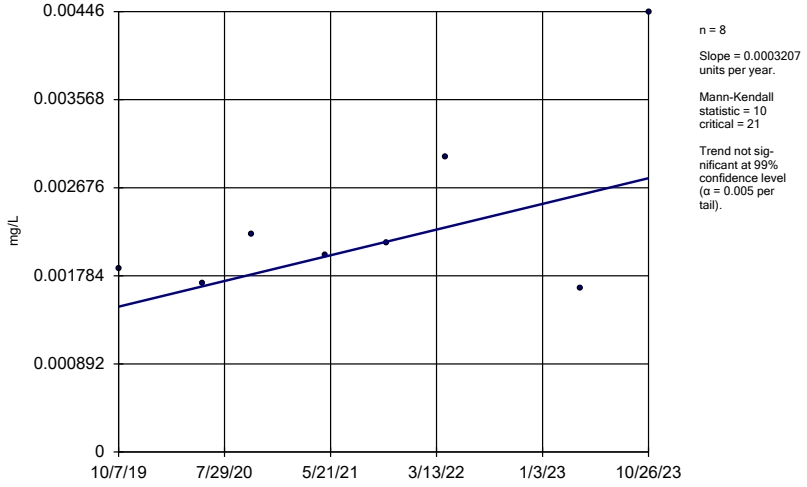
Sen's Slope Estimator

MW-7R2 (bg)



n = 8

Slope = 0.0003207 units per year.

Mann-Kendall statistic = 10
critical = 21

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

Constituent: Cobalt Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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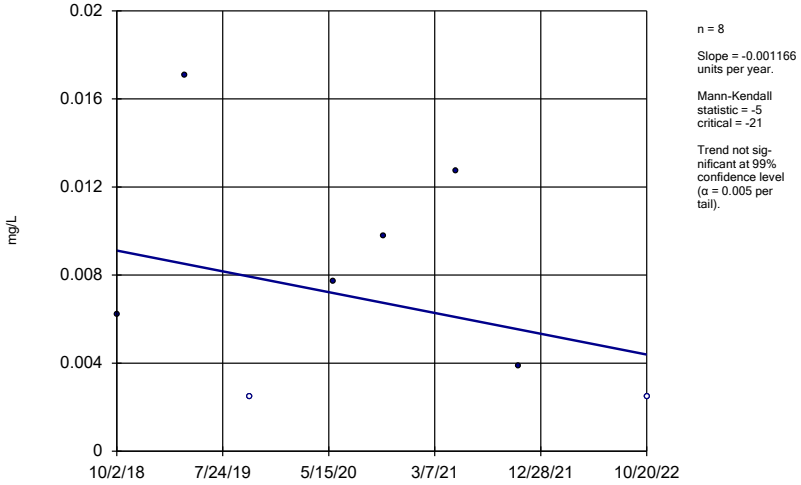
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-5



n = 8

Slope = -0.001166 units per year.

Mann-Kendall statistic = -5
critical = -21

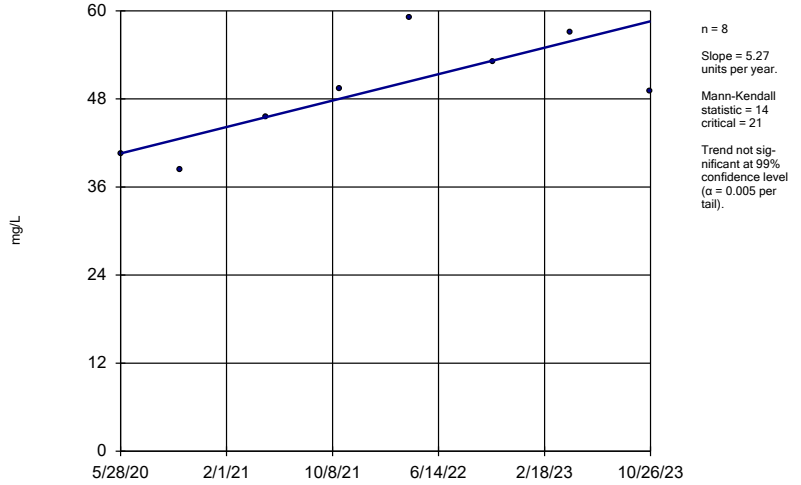
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Copper Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-1R



n = 8

Slope = 5.27 units per year.

Mann-Kendall statistic = 14
critical = 21

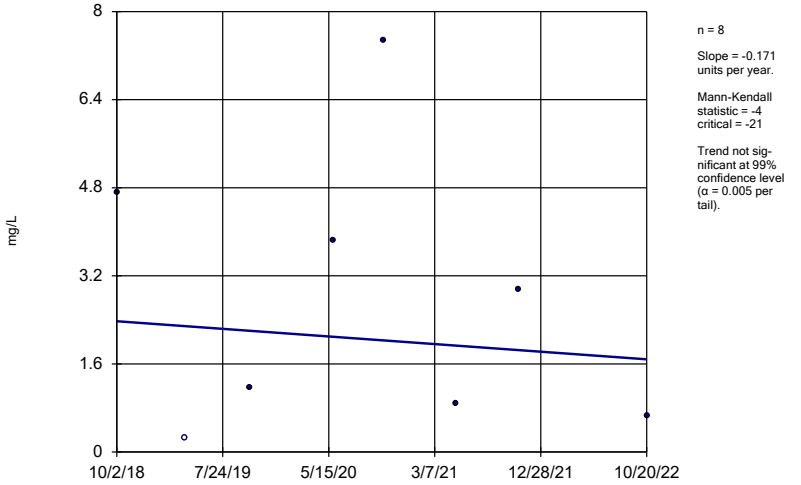
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron, Dissolved Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-3



n = 8

Slope = -0.171 units per year.

Mann-Kendall statistic = -4
critical = -21

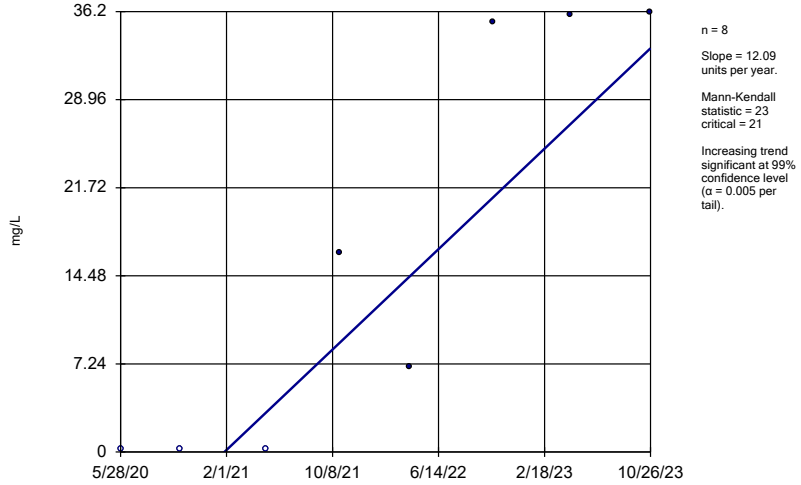
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron, Dissolved Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = 12.09 units per year.

Mann-Kendall statistic = 23
critical = 21

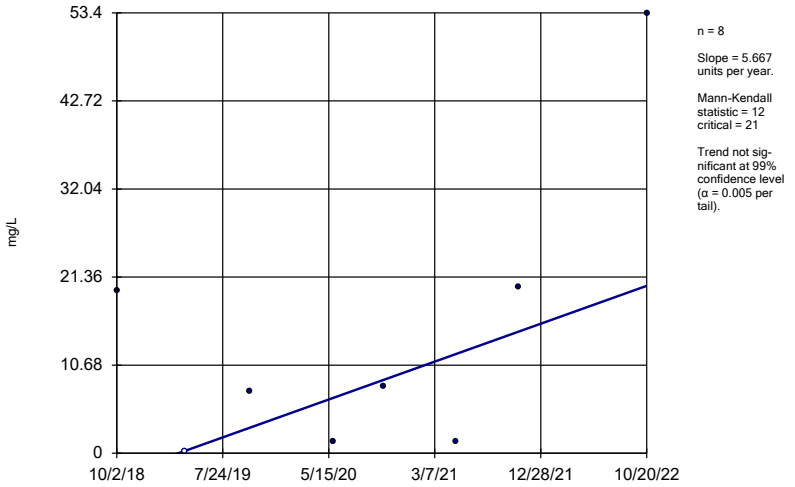
Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron, Dissolved Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-5

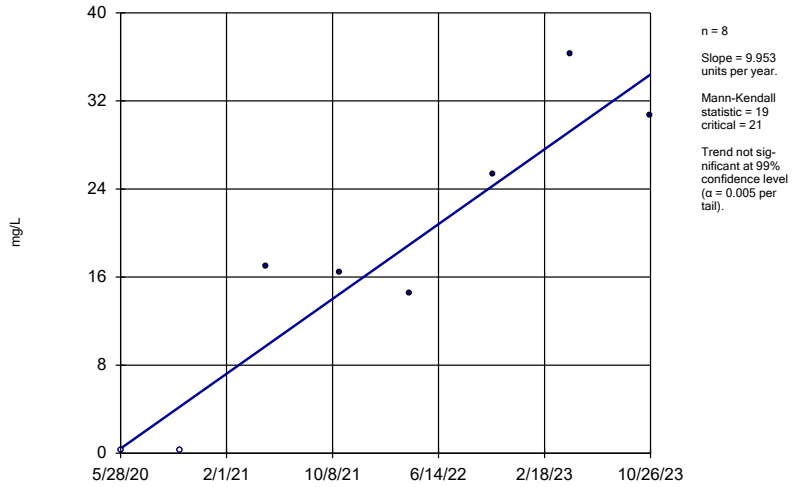


Constituent: Iron, Dissolved Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-6 (bg)

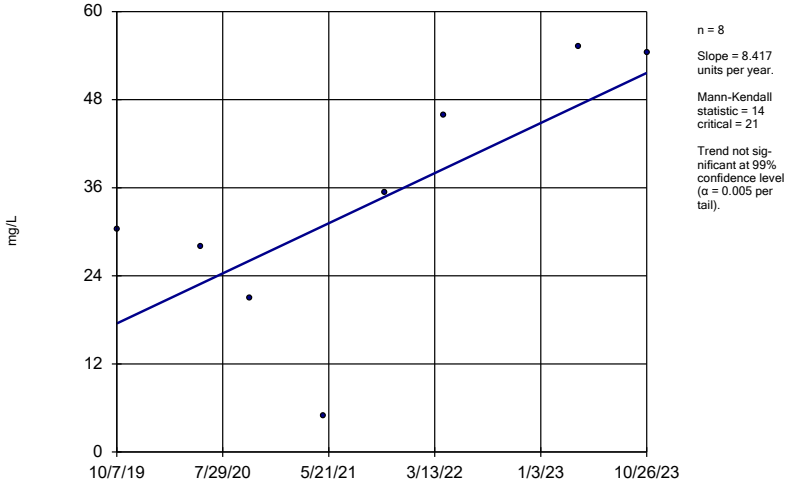


Constituent: Iron, Dissolved Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-7R2 (bg)

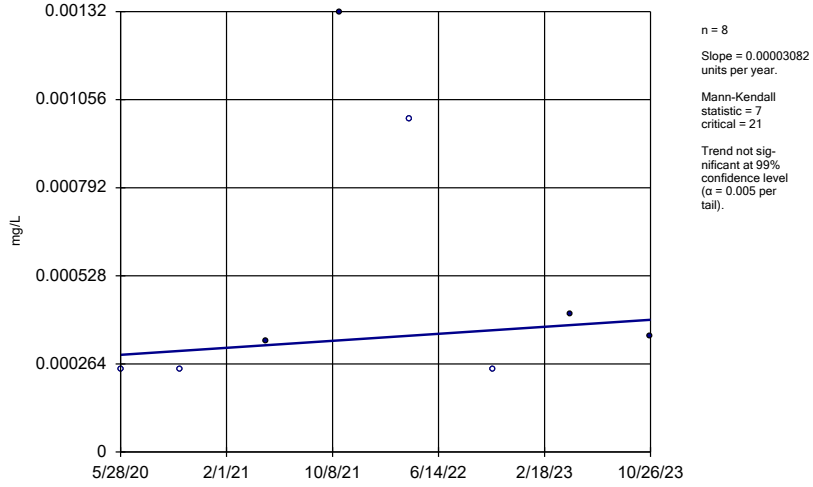


Constituent: Iron, Dissolved Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-1R

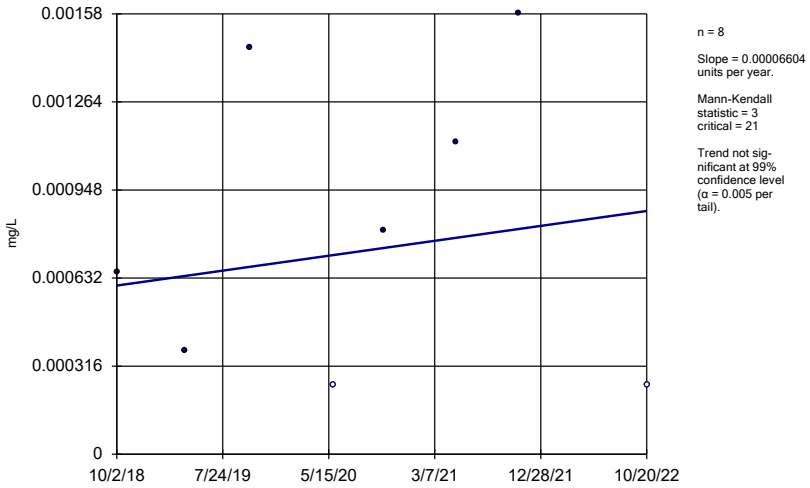


Constituent: Lead Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-3



n = 8

Slope = 0.00006604 units per year.

Mann-Kendall statistic = 3
critical = 21

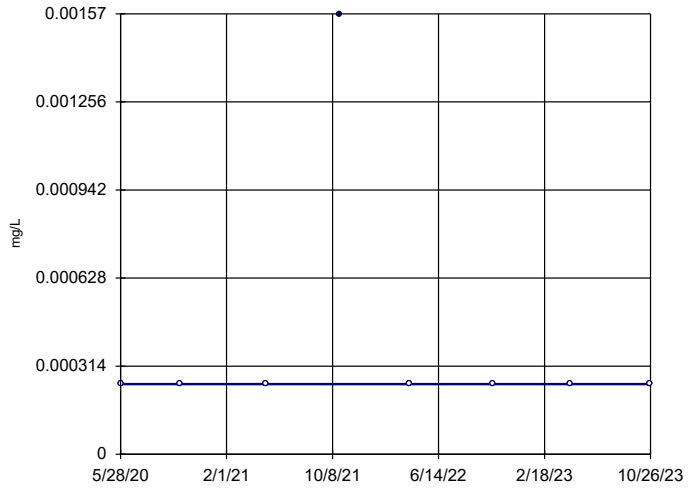
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Lead Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = -1
critical = -21

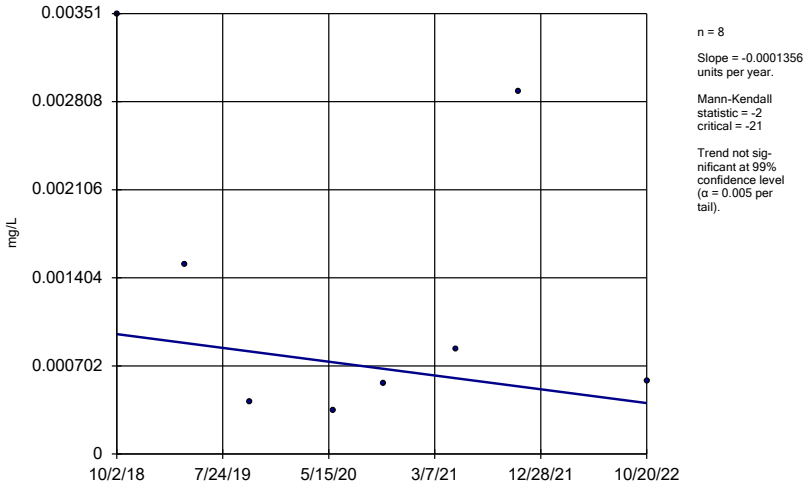
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Lead Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-5



n = 8

Slope = -0.0001356 units per year.

Mann-Kendall statistic = -2
critical = -21

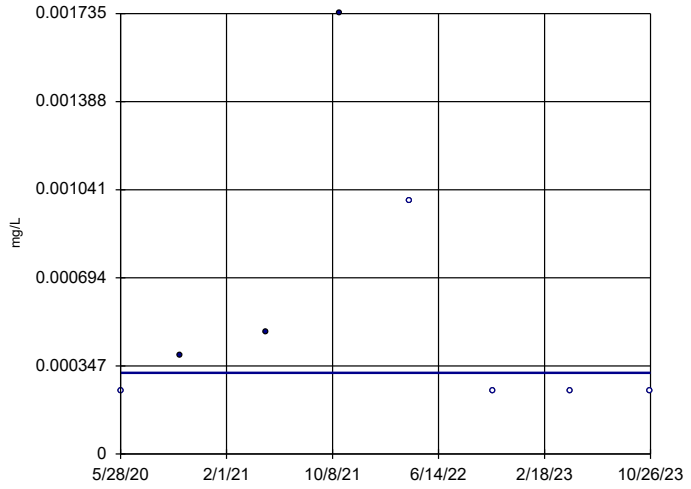
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Lead Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-6 (bg)



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = -4
critical = -21

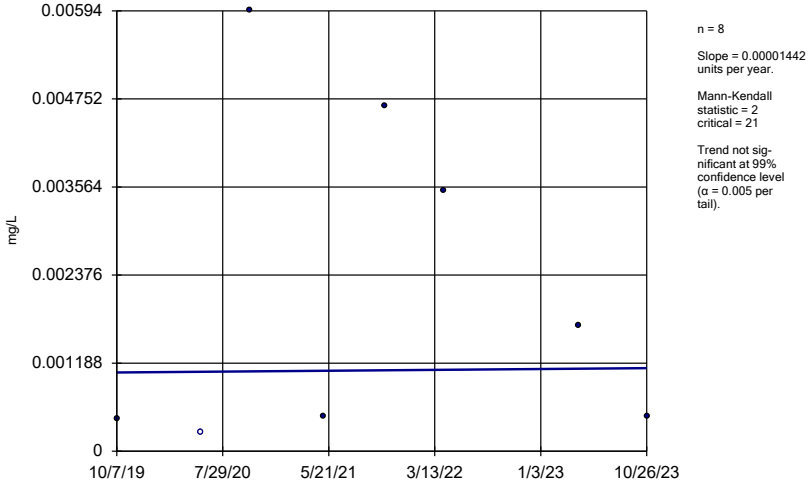
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Lead Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-7R2 (bg)

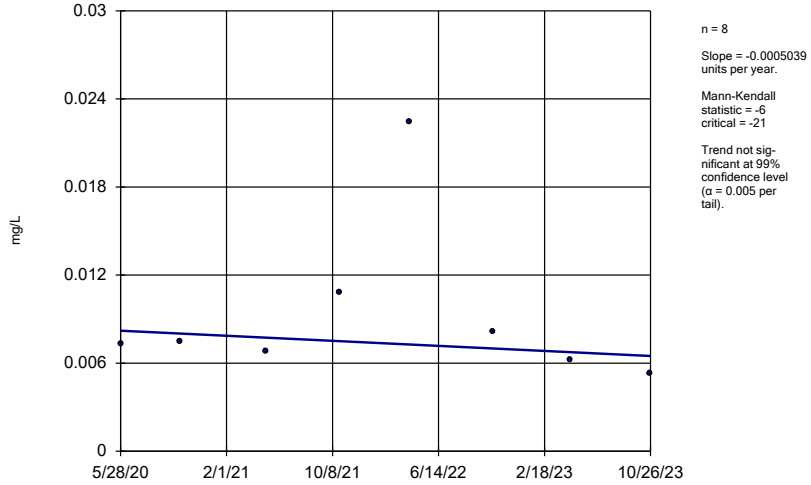


Constituent: Lead Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-1R

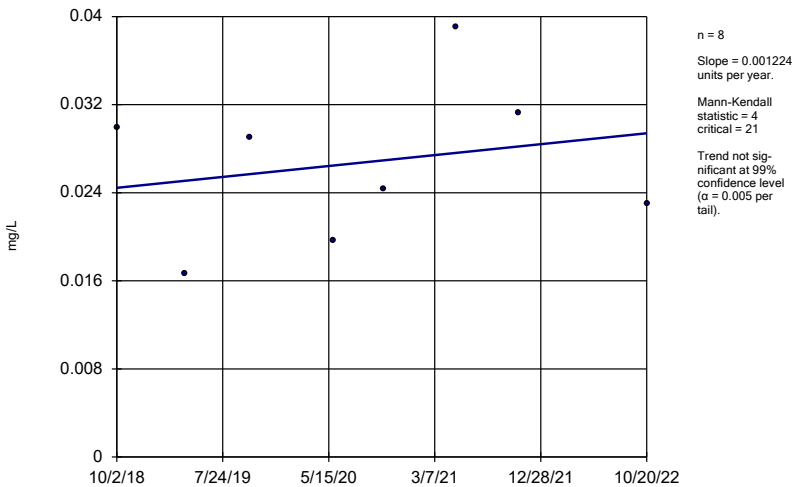


Constituent: Nickel Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-3

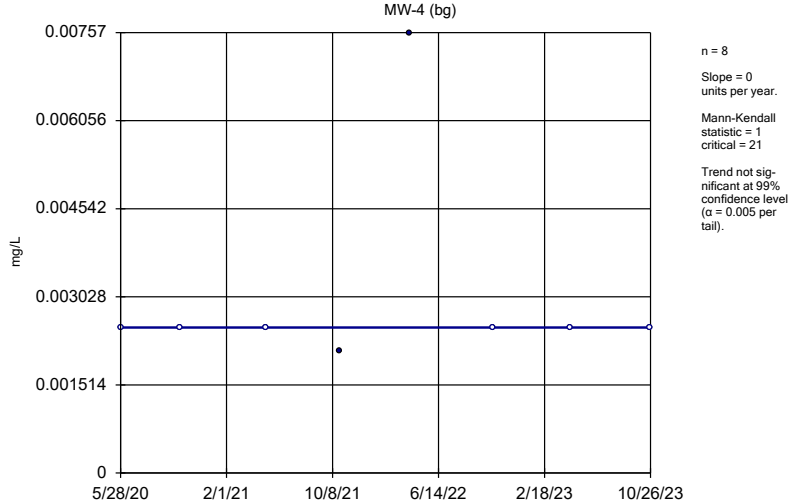


Constituent: Nickel Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-4 (bg)

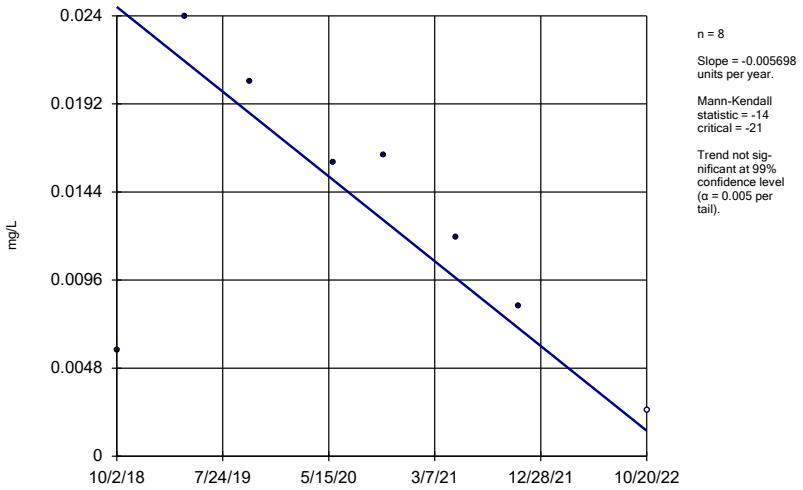


Constituent: Nickel Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-5

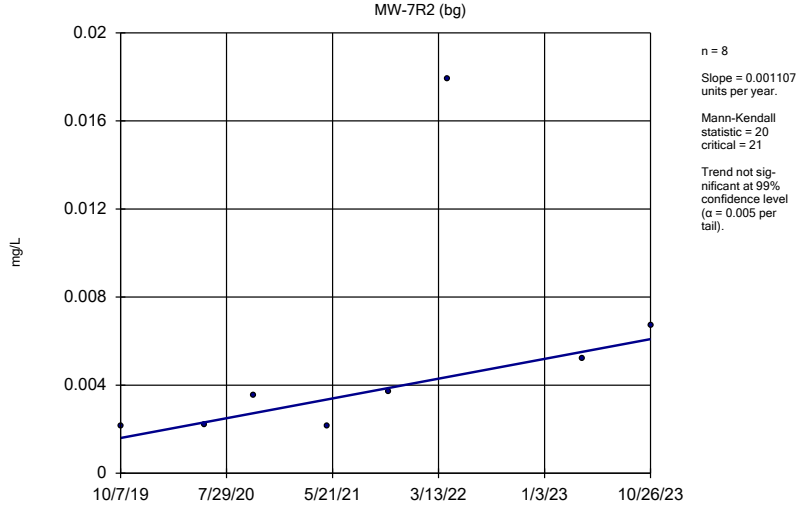


Constituent: Nickel Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-7R2 (bg)

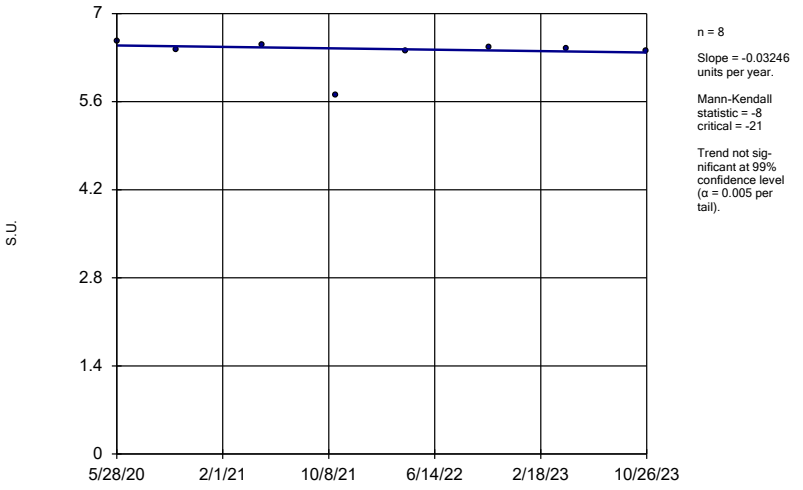


Constituent: Nickel Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-1R

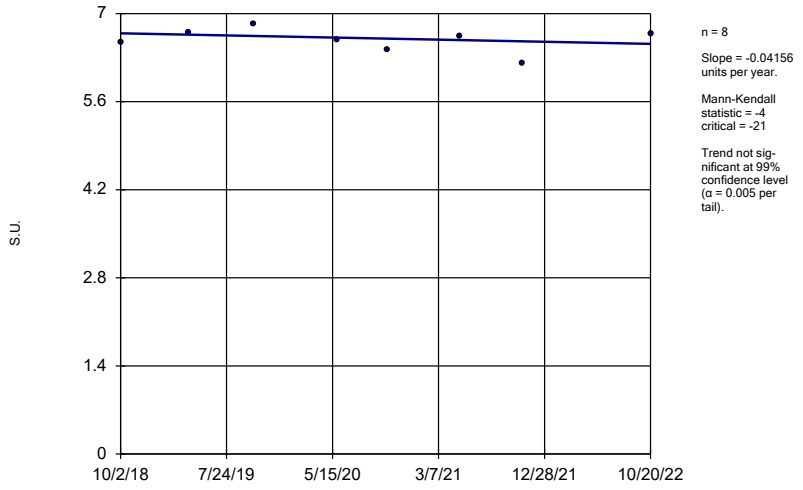


Constituent: pH Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

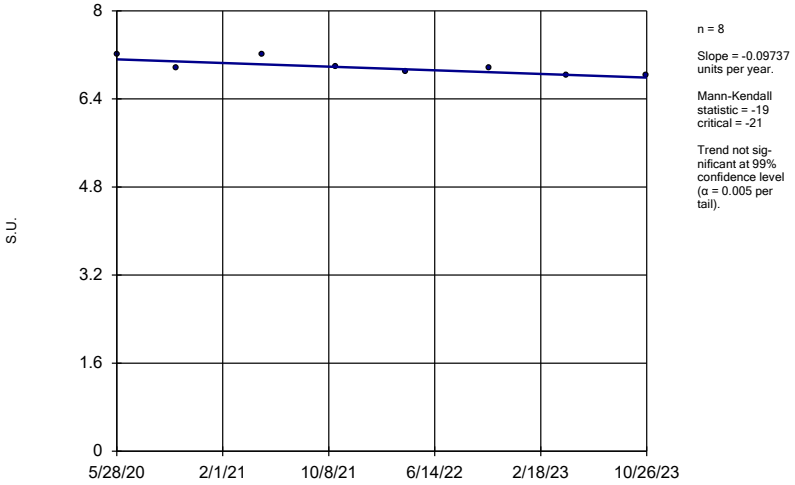
MW-3



Constituent: pH Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = -0.09737 units per year.

Mann-Kendall statistic = -19
critical = -21

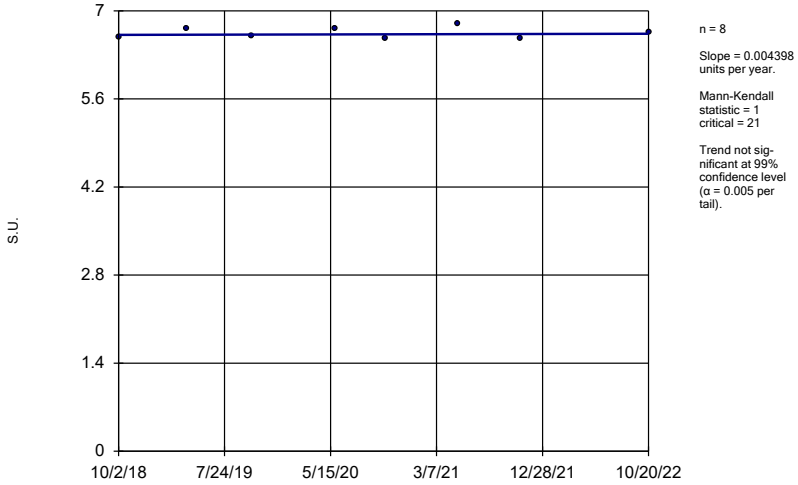
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-5



n = 8

Slope = 0.004398 units per year.

Mann-Kendall statistic = 1
critical = 21

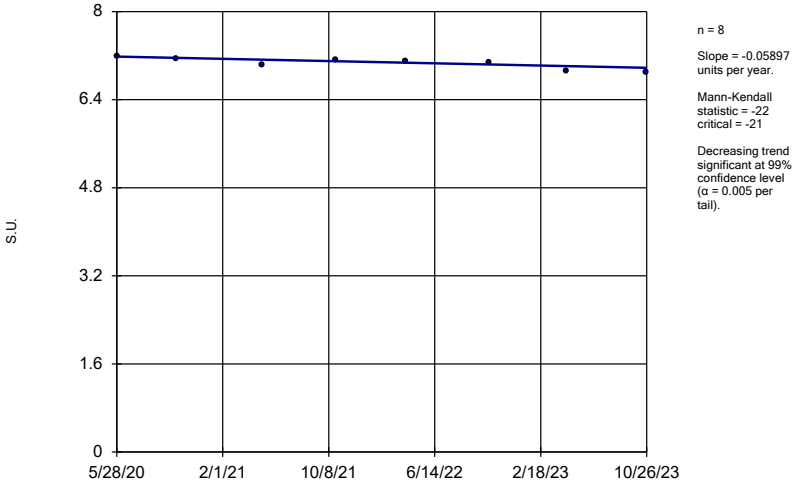
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-6 (bg)



n = 8

Slope = -0.05897 units per year.

Mann-Kendall statistic = -22
critical = -21

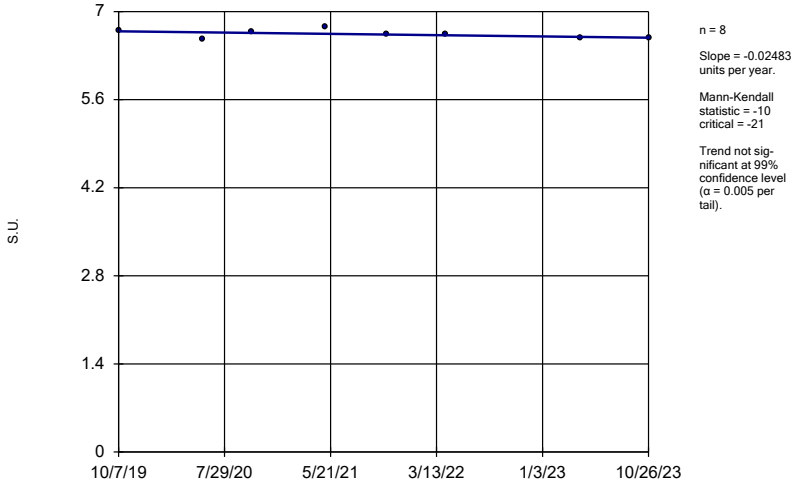
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-7R2 (bg)



n = 8

Slope = -0.02483 units per year.

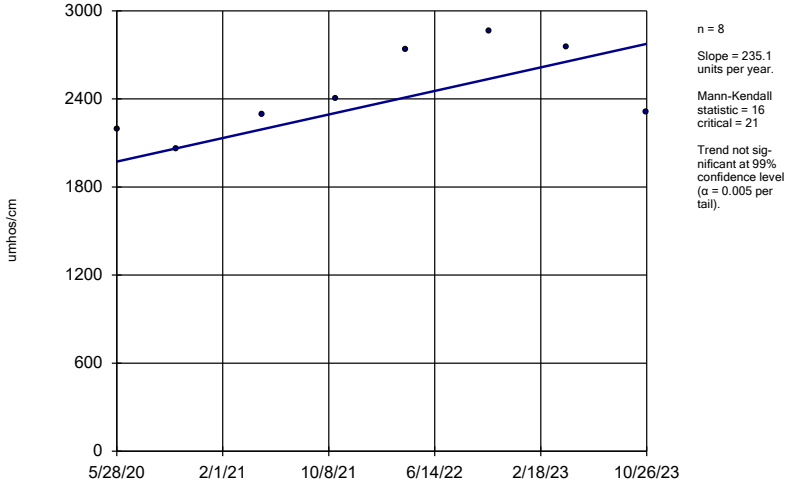
Mann-Kendall statistic = -10
critical = -21

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

Constituent: pH Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

MW-1R



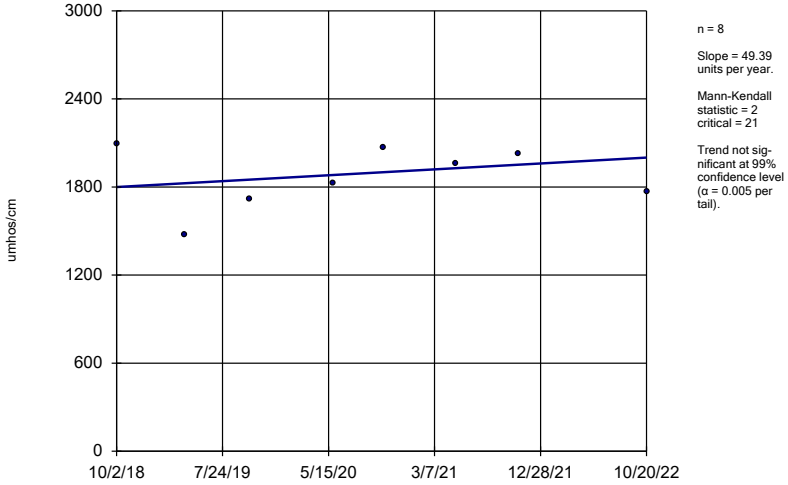
Constituent: Specific Conductance Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-3



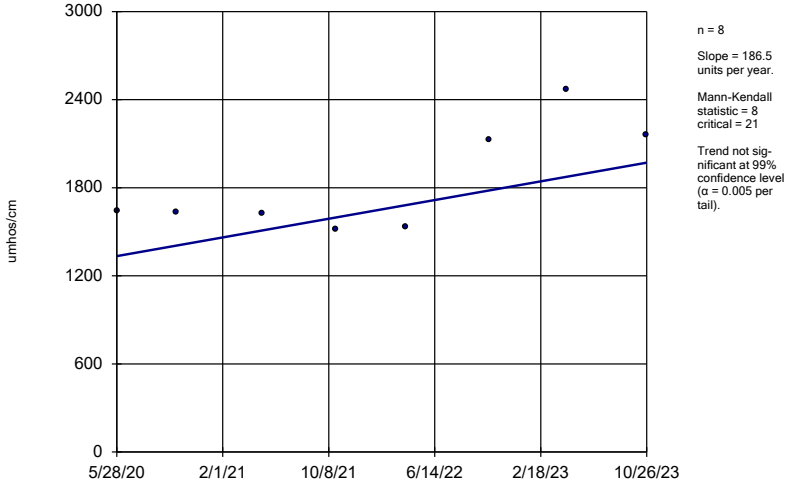
Constituent: Specific Conductance Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-4 (bg)



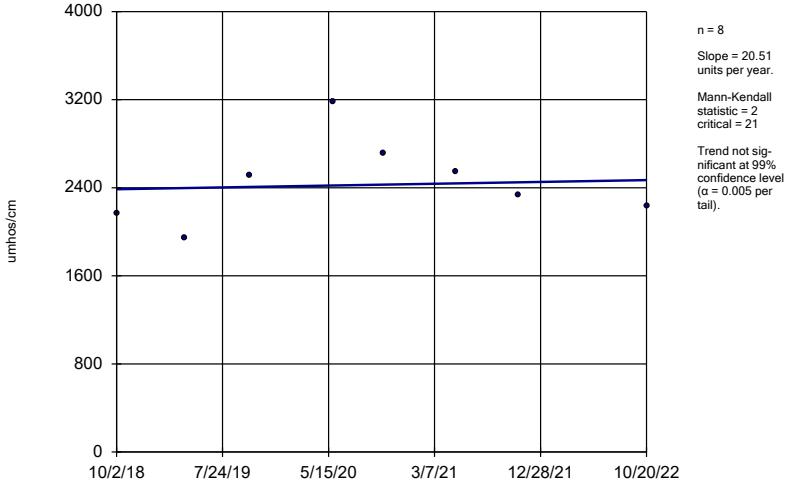
Constituent: Specific Conductance Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-5

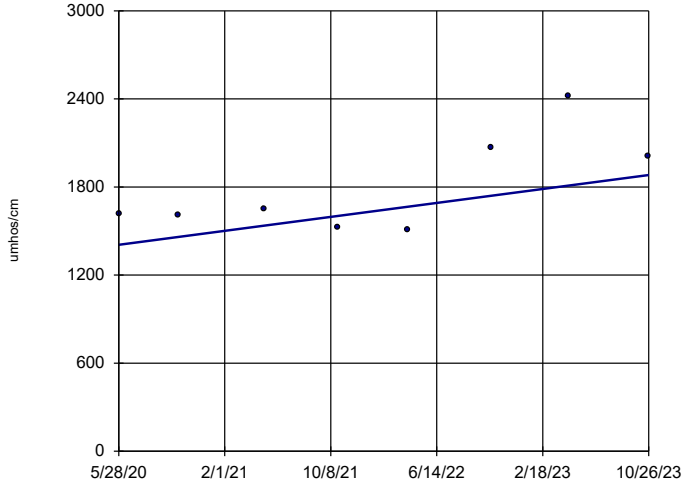


Constituent: Specific Conductance Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

MW-6 (bg)



n = 8

Slope = 139.1 units per year.

Mann-Kendall statistic = 8
critical = 21

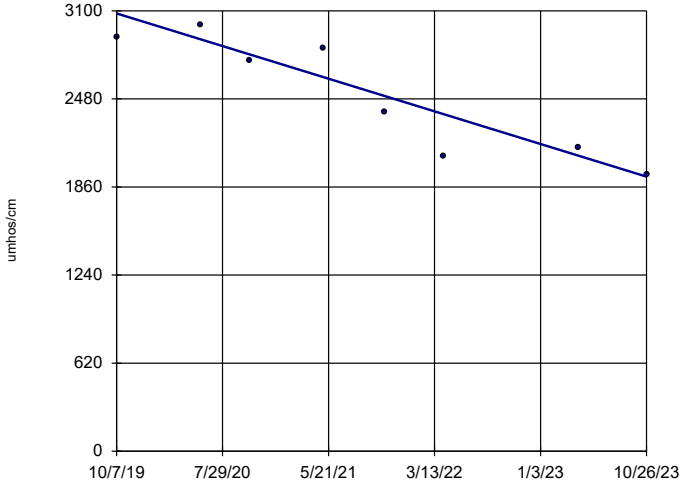
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Specific Conductance Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

MW-7R2 (bg)



n = 8

Slope = -283.3 units per year.

Mann-Kendall statistic = -22
critical = -21

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

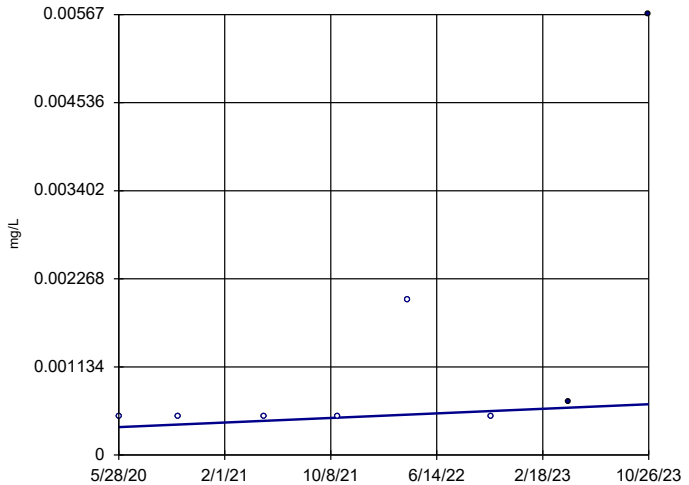
Constituent: Specific Conductance Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-1R



n = 8

Slope = 0.00008592 units per year.

Mann-Kendall statistic = 14
critical = 21

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

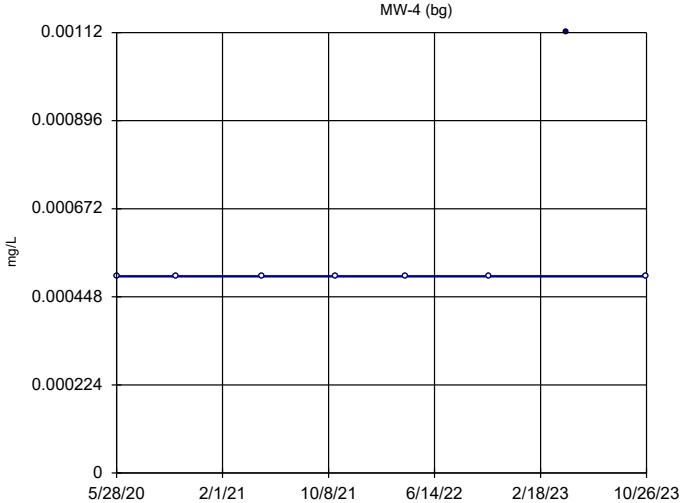
Constituent: Thallium Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 5
critical = 21

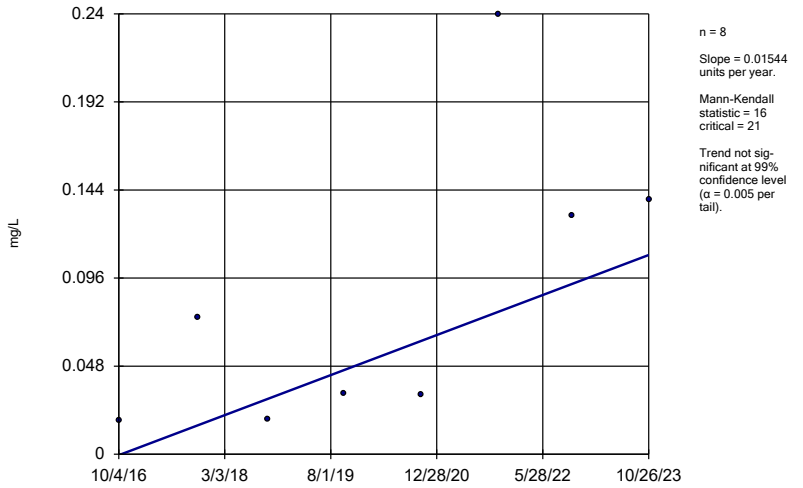
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Thallium Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

MW-1R



n = 8

Slope = 0.01544 units per year.

Mann-Kendall statistic = 16
critical = 21

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

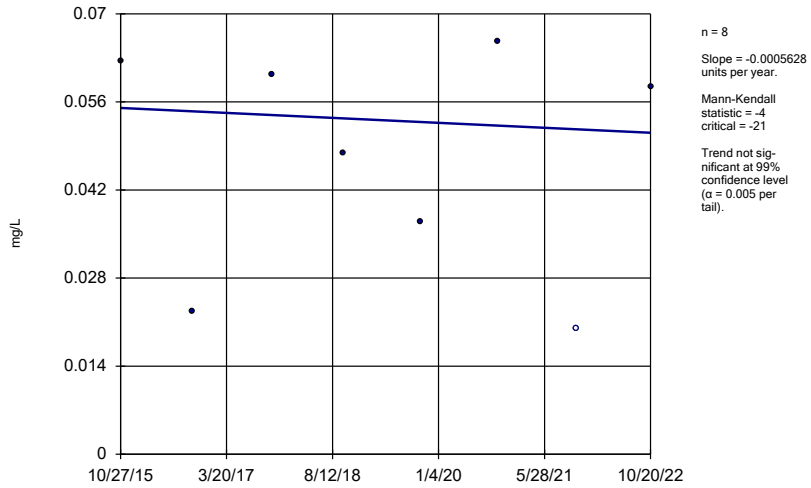
Constituent: Total Organic Halogens Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-3



n = 8

Slope = -0.0005628 units per year.

Mann-Kendall statistic = -4
critical = -21

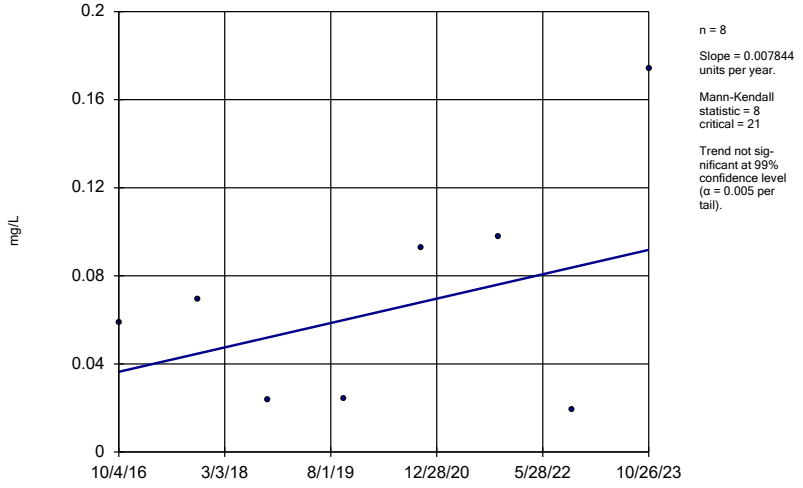
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Organic Halogens Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = 0.007844 units per year.

Mann-Kendall statistic = 8
critical = 21

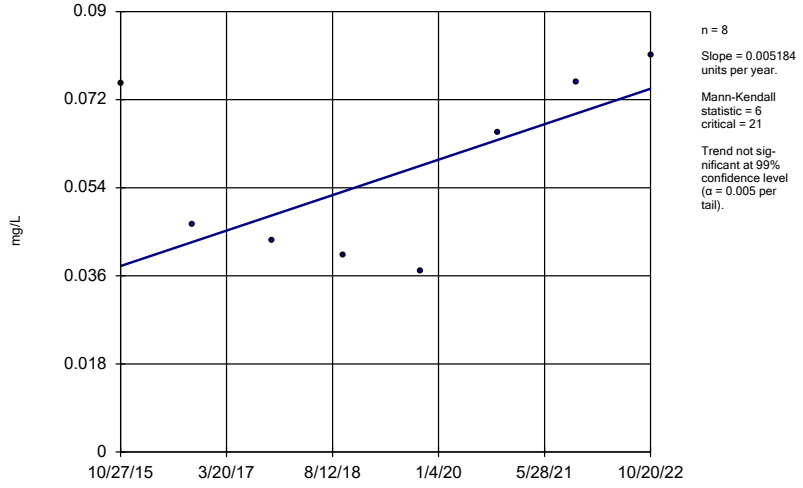
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Organic Halogens Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

MW-5



n = 8

Slope = 0.005184 units per year.

Mann-Kendall statistic = 6
critical = 21

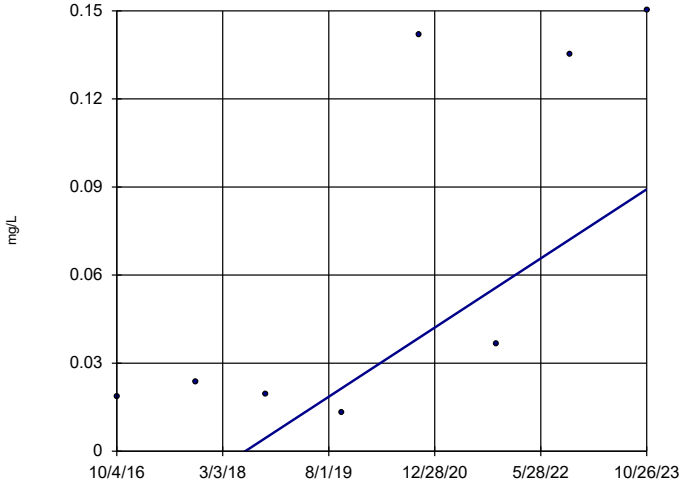
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Organic Halogens Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall

Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sen's Slope Estimator

MW-6 (bg)



n = 8

Slope = 0.01667 units per year.

Mann-Kendall statistic = 16
critical = 21

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

Constituent: Total Organic Halogens Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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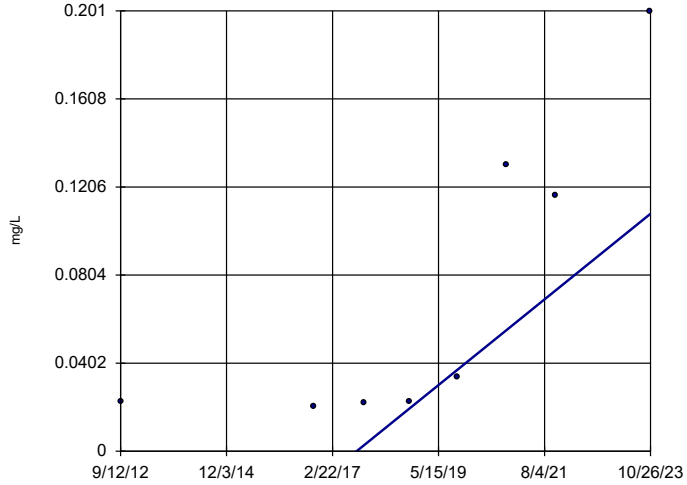
Sen's Slope Estimator

MW-7R2 (bg)



n = 8

Slope = 0.01756 units per year.

Mann-Kendall statistic = 22
critical = 21

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Organic Halogens Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

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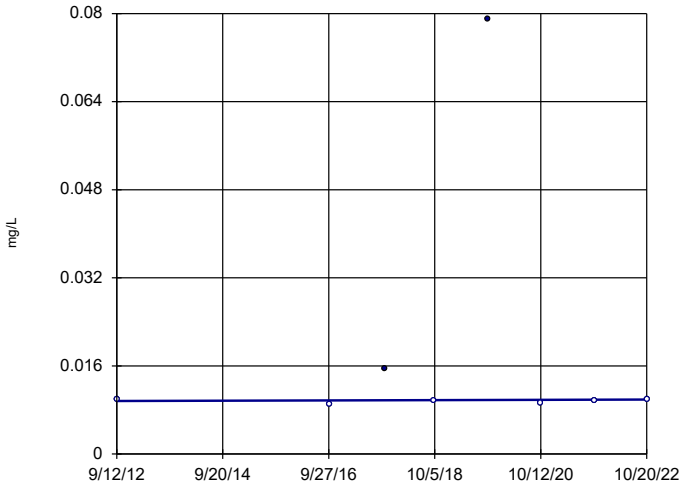
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-1R



n = 8

Slope = 0.00002481 units per year.

Mann-Kendall statistic = 2
critical = 21

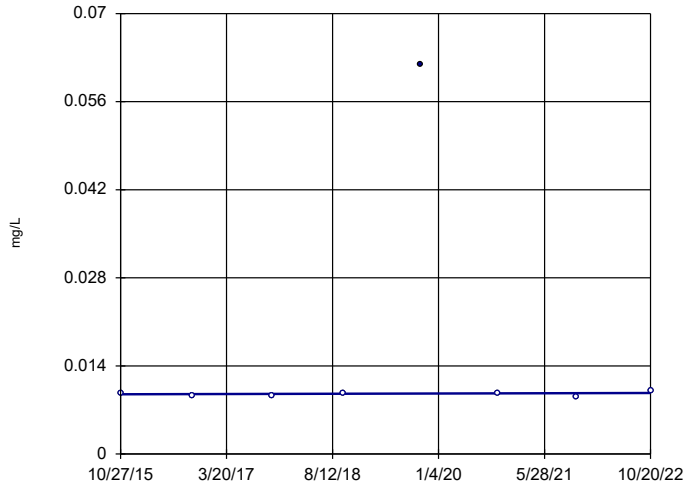
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Phenols Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-3



n = 8

Slope = 0.00002863 units per year.

Mann-Kendall statistic = 4
critical = 21

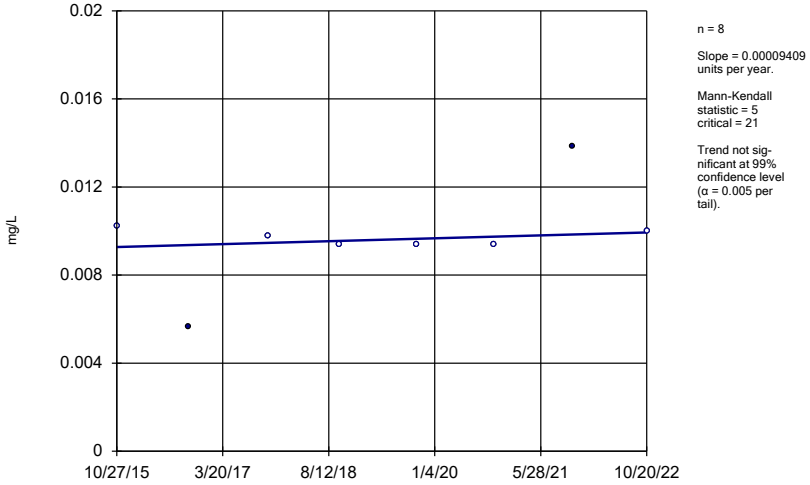
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Phenols Analysis Run 11/13/2023 4:42 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-6 (bg)



n = 8

Slope = 0.00009409 units per year.

Mann-Kendall statistic = 5
critical = 21

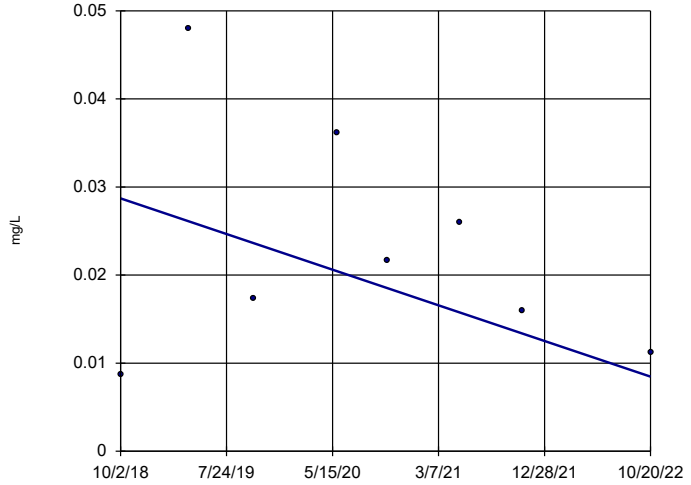
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Phenols Analysis Run 11/13/2023 4:43 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-3



n = 8

Slope = -0.004993 units per year.

Mann-Kendall statistic = -6
critical = -21

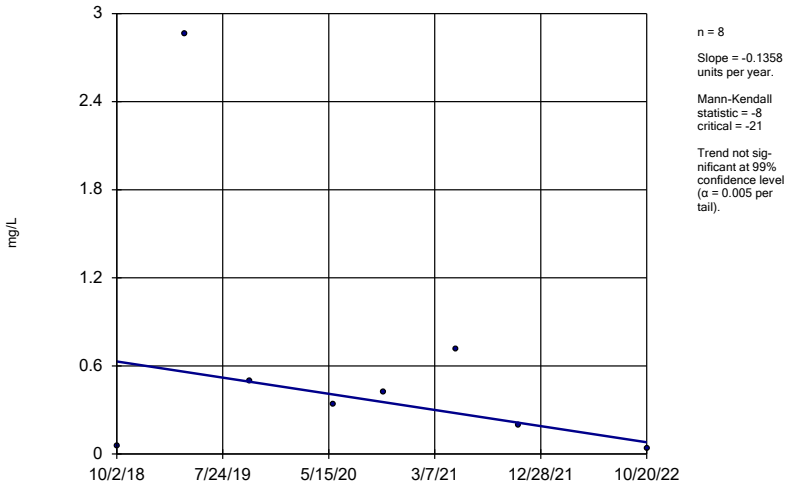
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Zinc Analysis Run 11/13/2023 4:43 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-5



n = 8

Slope = -0.1358 units per year.

Mann-Kendall statistic = -8
critical = -21

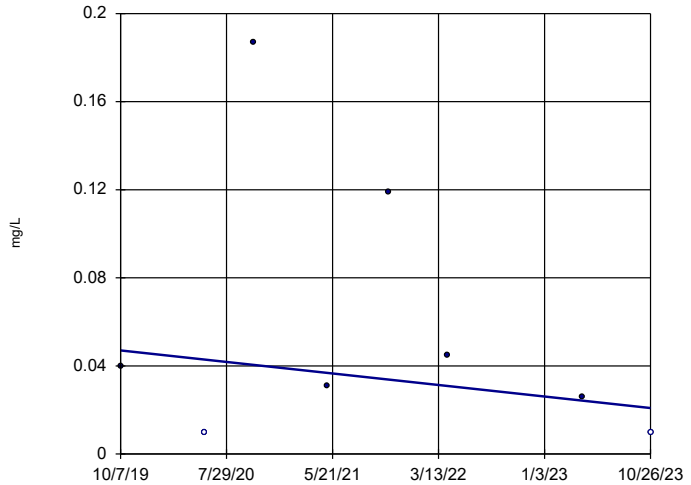
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Zinc Analysis Run 11/13/2023 4:43 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Sanitas™ v.10.0.08 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-7R2 (bg)



n = 8

Slope = -0.006451 units per year.

Mann-Kendall statistic = -7
critical = -21

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

Constituent: Zinc Analysis Run 11/13/2023 4:43 PM View: 2023AWQR - MannKendall
Anderson Excavating Landfill Client: SCS Engineers Data: ANDEX-CL Sanitas-AM

Appendix E

Mann-Kendall Output

Monitoring Well	Constituent Name	Calculated Statistic		
		Decreasing Trend	Stable Trend	Increasing Trend
MW-1R	Ammonia as N		-2	
	Arsenic		0	
	Barium		-8	
	Chemical Oxygen Demand		2	
	Chloride		10	
	Cobalt		-4	
	Iron, Dissolved			14
	Lead		7	
	Nickel		-6	
	pH		-8	
	Specific Conductance			16
	Thallium			14
	Total Organic Halogens			16
	Total Phenols		2	
MW-3	Ammonia as N		6	
	Arsenic		4	
	Barium		12	
	Cadmium		-8	
	Chemical Oxygen Demand		8	
	Chloride		0	
	Cobalt		-5	
	Iron, Dissolved		-4	
	Lead		3	
	Nickel		4	
	pH		-4	
	Specific Conductance		2	
	Total Organic Halogens		-4	
	Total Phenols		4	
	Zinc		-6	
MW-4	Ammonia as N			23
	Arsenic			20
	Barium			26
	Chemical Oxygen Demand			20
	Chloride		8	
	Iron, Dissolved			23
	Lead		-1	
	Nickel		1	
	pH	-19		
	Specific Conductance		8	
	Thallium		5	
	Total Organic Halogens		8	
MW-5	Ammonia as N		2	
	Antimony		-12	
	Arsenic		10	
	Barium		0	
	Cadmium		-4	
	Chemical Oxygen Demand		-10	
	Chloride		-10	
	Cobalt		-2	
	Copper		-5	
	Iron, Dissolved		12	
	Lead		-2	
	Nickel	-14		
	pH		1	
	Specific Conductance		2	
	Total Organic Halogens		6	
	Zinc		-8	

Monitoring Well	Constituent Name	Calculated Statistic		
		Decreasing Trend	Stable Trend	Increasing Trend
MW-6	Ammonia as N			18
	Arsenic			18
	Barium			16
	Cadmium		-3	
	Chemical Oxygen Demand			24
	Chloride			14
	Cobalt			24
	Iron, Dissolved			19
	Lead		-4	
	pH	-22		
	Specific Conductance		8	
	Total Organic Halogens			16
	Total Phenols		5	
MW-7R2	Ammonia as N	-13		
	Antimony		10	
	Arsenic			22
	Barium		-12	
	Chemical Oxygen Demand		-12	
	Chloride		-10	
	Cobalt		10	
	Iron, Dissolved			14
	Lead		2	
	Nickel			20
	pH		-10	
	Specific Conductance	-22		
	Total Organic Halogens			22
	Zinc		-7	

Appendix F

2023 Landfill Gas Annual Report

Gas Monitoring Summary
2023 Gas Monitoring Report
Carter Lake C&D Landfill
Permit No. 78-SDP-02-80C

Monitoring Points				Methane Results (% LEL)							
Name		Type	Description	2/21/2023	S (Y/N)	4/19/2023	S (Y/N)	7/25/2023	S (Y/N)	10/26/2023	S (Y/N)
#1	Northeast Corner	Outdoor	Northeast corner of site.	0%		0%		0%		0%	
#2	Southeast Corner	Outdoor	Southeast corner of site.	0%		0%		0%		0%	
#3	Southwest Corner	Outdoor	Southwest corner of site.	0%		0%		0%		0%	
#4	Northwest Corner	Outdoor	Northwest corner of site.	0%		0%		0%		0%	
#5	Center	Outdoor	Center of property.	0%		0%		0%		0%	

S(Y/N) - Was screen submerged, yes or no.

Point Number	Location
#1	NE Corner
#2	SE Corner
#3	SW Corner
#4	NW Corner
#5	Center of Site

Figure 1

Methane Monitoring Network

Legend

- Methane Monitoring Points
- Monitoring Well
- Approximate Property Boundary

Anderson Excavating Carter Lake Landfill
Carter Lake, Iowa
Project No: 27223229.00
Drawing Date: November 2023

N
W
E
S

0 65 130 260
Feet

SCS ENGINEERS
environmental consultants and contractors