2024 Annual Water Quality Report, Leachate Control System Performance Evaluation Report, and Monthly Inspection Reports

Cargill Sweeteners - North America - CCR Landfill
Solid Waste Permit No. 62-SDP-04-89C

Prepared for:

Cargill Corn Milling, Inc.

SCS ENGINEERS

27224433.00 | November 2024

1690 All-State Court, Suite 100
West Des Moines, Iowa 50265
515-631-6160

CERTIFICATION

Prepared by: _____ Date: 11/25/2024

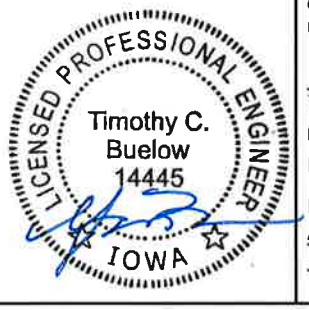
Typed: Kevin Jensen

Reviewed by: _____ Date: 11/25/2024

Typed: Timothy C. Buelow, P.E.

Certification page (103.1(4)"e")

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: 11/25/2024

Timothy C. Buelow, P.E.

License No. 14445

My license renewal date is December 31, 2025.

Pages or sheets covered by this seal:

All except Appendix B-1.

EXECUTIVE SUMMARY

ES.1 PERIOD OF REPORT COVERAGE

SCS Engineers (SCS), on behalf of Cargill Corn Milling, Inc. and with assistance from HR Green and their selected contractors, has completed the required groundwater sampling and analysis of the Cargill Sweeteners North America Coal Combustion Residue (CCR) Landfill (Landfill). HR Green and their selected contractors completed the groundwater sample collection, laboratory analyses, and statistical evaluation of the data. SCS utilized this information to prepare this Annual Water Quality Report (AWQR). The purpose of this AWQR is to document and statistically evaluate the groundwater sampling results since the 2023 AWQR up to and including the 2024 annual sampling event. This AWQR was prepared in accordance with the requirements of Iowa Administrative Code (IAC) 567-103, the site 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: Justification for the statistical methodology to be used in future reports in included in Section 5.3. A description of the proposed statistical methodology to be used in future reports is included in Appendix G.
- 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, Closure Permit
- Types of waste previously accepted: Coal Combustion Residue (CCR) and Gypsum Waste
- Applicable IAC rules: 567-103

ES.4 COMMENTS

The following summarizes points of special emphasis:

As discussed in Section 5.3, intrawell statistical analyses appear appropriate for groundwater data at the Landfill. Geochemical parameter sampling will also be added to the 2025 sampling program to allow for further characterization and interpretation of groundwater quality influences at the Landfill.

Table of Contents

Section Page

Certification i
Executive Summary ii
ES.1 Period of Report Coverage ii
ES.2 Report Priority ii
ES.3 Site Status and Applicable Rules ii
ES.4 Comments ii
1.0 Acronyms/Abbreviations 1
2.0 Site Background 2
2.1 Site Location 2
2.2 Facility 2
2.3 Geology of the Site 2
2.4 Hydrology of the Site 5
3.0 Figures Discussion 7
3.1 Figure 1 – Approved Monitoring Network 7
3.2 Figure 2 – Groundwater Contours 7
4.0 QA/QC Summary 8
4.1 April 17, 2024 (2024 Annual Sampling Event) 8
5.0 Data Evaluation 9
5.1 Data Evaluation 9
5.2 Trending in Monitoring Wells 9
5.3 Statistical Methodology Justification 9
6.0 Recommendations 11
6.1 Site Impact on Groundwater 11
6.2 Proposed Monitoring 11
6.3 Proposed Monitoring Well Changes 11

Tables

Table 1	Monitoring Program Summary
Table 2	Monitoring Program Implementation Schedule
Table 4	Monitoring Well Performance and Maintenance Summary
Table 5	Background and GWPS Summary
Table 6	Summary of Well/Detected Constituent Pairs with No Immediately Preceding Prediction Limit Exceedances
Table 7	Summary Table of Ongoing and Newly Identified Prediction Limit Exceedances
Table 8	Summary of Groundwater Chemistry (The Summary of Groundwater Chemistry is Located in Appendix C)
Table 9	Historical Prediction Limit and Action Level Exceedances
Table 10	Groundwater Quality Assessment Plan Trend Analysis

Figures

Figure 1	Approved Monitoring Network
Figure 2	Groundwater Contours

Appendices

Appendix A	Field Sampling Forms
Appendix B-1	Laboratory Analytical Data Sheets
Appendix B-2	Data Validation
Appendix C	Summary of Groundwater Chemistry
Appendix D	Statistical Report
Appendix E	Mann-Kendall Trends
Appendix F	Statistical Methodology Justification Supporting Documents
Appendix G	Proposed Statistical Methodology for Intrawell Prediction Limits
Appendix H	2024 Leachate Control System Performance Evaluation Report
Appendix I	Monthly Post-Closure Landfill Inspection Reports

1.0 ACRONYMS/ABBREVIATIONS

AL = Action Level
CCV = Continuing Calibration Verification
CL = Control Limit - Mean plus Two Standard Deviations (+/- for pH)
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

2.0 SITE BACKGROUND

2.1 SITE LOCATION

The Cargill Sweeteners North America Coal Combustion Residue CCR Landfill (Landfill) is depicted on Figure 1, Approved Monitoring Network. The Landfill property is located approximately 6.5 miles northwest of the City of Eddyville, Iowa. The legal description is as follows: SW ¼, NE ¼, and NW¼, SE¼, Section 30, Township 74 North, Range 16 West, Mahaska County, Iowa.

2.2 FACILITY

The site was originally the location of an open pit coal mine, operated by a previous owner. The east walls of the pit are shale bedrock, and spoils are deposited along the west side. An abandoned underground coal tunnel-mine is also located on the property.

Landfilling of CCR and gypsum waste was initiated in 1990 at two separate locations at the site; the North Landfill (CCR) and the South Landfill (Gypsum) units. It should be noted that lime sludge was also deposited in the North Landfill and CCR was also deposited in the South Landfill. The two landfill units were initially regulated under separate permits. Disposal operations in the South Landfill and North Landfill were discontinued in 1991 and 2000, respectively. Landfill cover was then applied and both units were maintained under interim status. The South Landfill unit was reopened and accepted CCR from January 2014 through January 2017. Closure of both landfill units was completed in early 2024 and a closure permit was issued by DNR on July 12, 2024.

2.3 GEOLOGY OF THE SITE

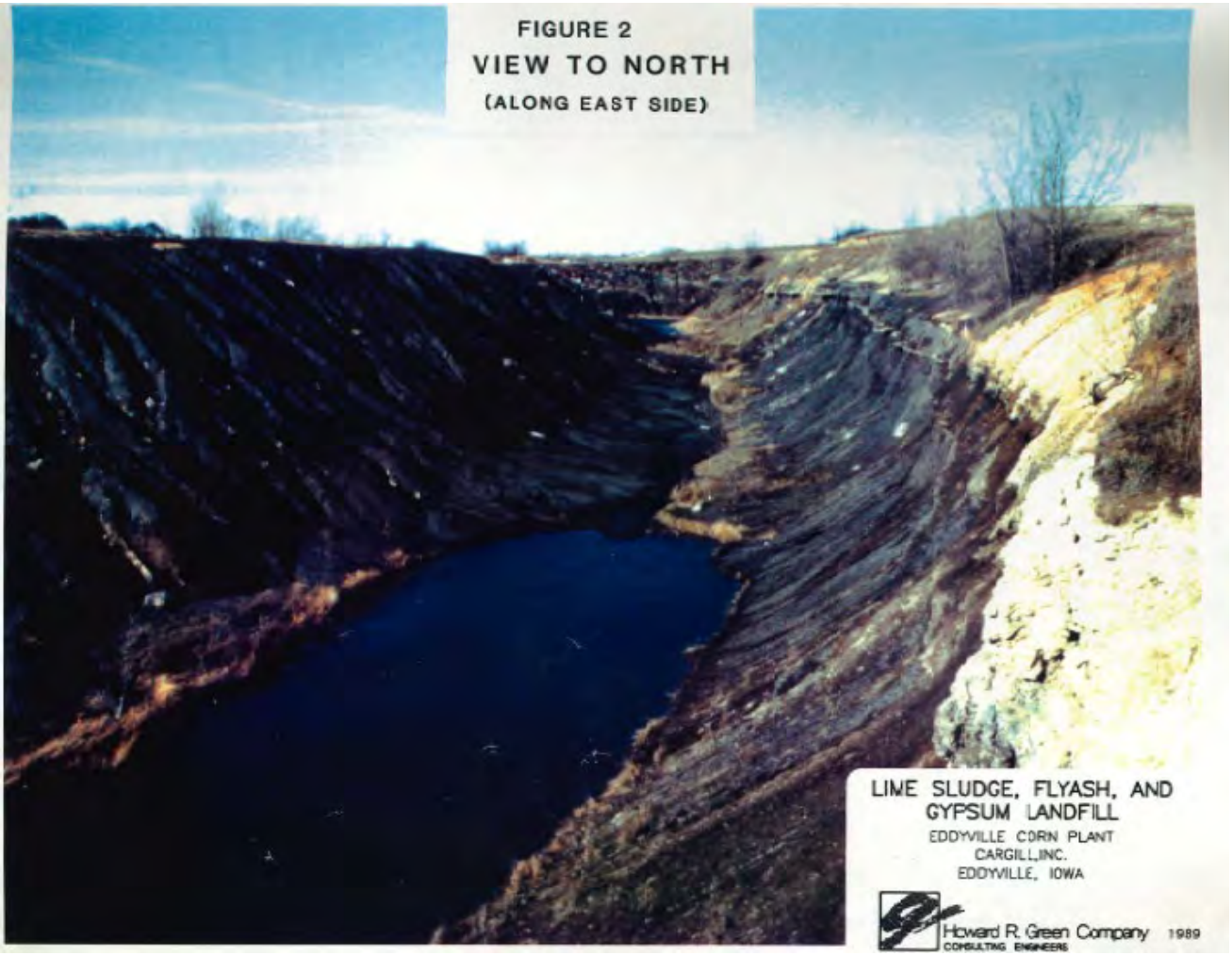
The following information pertaining to this section was obtained from the *Hydrogeologic Investigation Report* prepared by H. R. Green Company, October 1989:

> *The upland divides are covered by a soil derived from thick loess. (Ladoga Silt Loam). This loess thins on the upper sideslopes (Clinton Silt Loam), grading into a shale-derived soil (Gosport Silt Loam) on the lower sideslopes, with alluvium-derived soils (Humeston Silt Loam) in the bottoms. This is a typical soil association for steep hillsides eroded into shale with only a minor glacial till component between the loess cap and shale bedrock.*
>
> *Numerous roadcuts and strip mines in the area indicate that the total Pleistocene cover of unconsolidated sediment is quite thin and that the ridge and valley topography of much of the area is generally a reflection of the configuration of the bedrock surface.*
>
> *The uppermost bedrock of the area is Pennsylvanian Age – Cherokee Group cyclothemic deposits which includes shales, siltstones, sandstones, coals and sometimes thin limestone. Because of the repetitive nature of the cyclothems, the internal stratigraphy of the Cherokee Group is still largely unresolved. However, because the site is near the eastern edge of the Cherokee subcrop and the regional dip is toward the southwest, the site is probably in the lower part of the Cherokee package. Exposures in the mine headwall show the upper bedrock to be predominantly a dense organic rich black shale; overlain by a thin sandstone and multicolored shales; and underlain by a coal seam. A geologic profile of the easte*

side of the headwall exposure is illustrated on Figure 9, as exposed in the foreground of Figure 2 (photograph).

The Mississippian Aquifer is the first bedrock aquifer beneath the site (Horick and Steinhilber, 1973). In this area, the aquifer is approximately 400 feet thick, dominated by limestone and dolomite lithologies and containing minor siltstone, shale and traces of gypsum. The top of the aquifer, below the Cargill site, is contoured at 600 feet elevation. Our soil boring indicate that the mining operation extended to an elevation of about 710 feet elevation on the west side of the property (details to follow), providing about 110 feet of Pennsylvanian Aquitard between the bottom of the strip mine and the top of the Mississippian Aquifer.

Copies of Figures 2 and 9 referenced above are included below.



For explanation, the headwall is shown on the right side of the photograph and mine spoils are shown on the left side of the photograph.

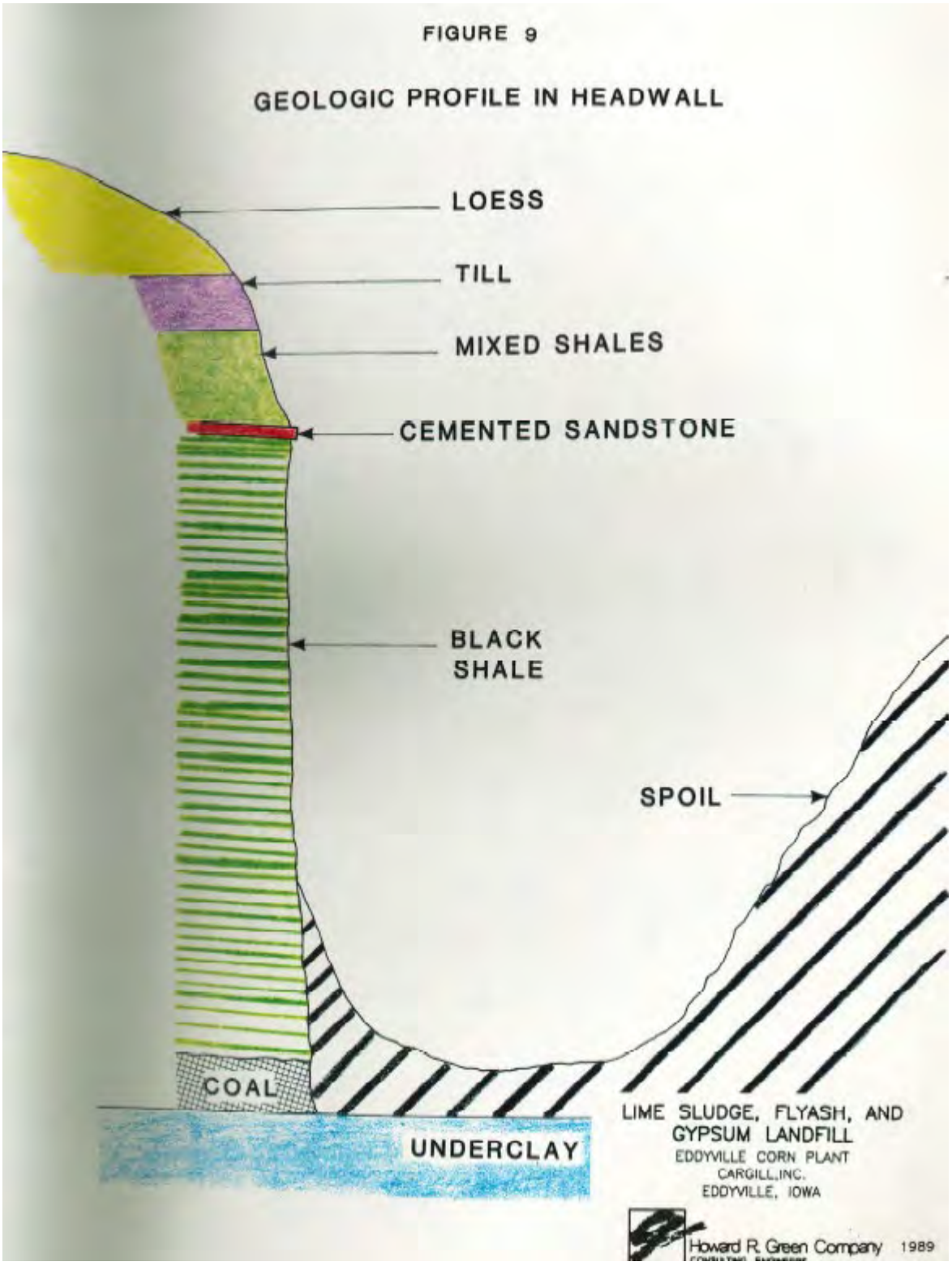


FIGURE 9
GEOLOGIC PROFILE IN HEADWALL
LOESS
TILL
MIXED SHALES
CEMENTED SANDSTONE
BLACK SHALE
SPOIL
COAL
UNDERCLAY
LIME SLUDGE, FLYASH, AND GYPSUM LANDFILL
EDDYVILLE CORN PLANT
CARGILL, INC.
EDDYVILLE, IOWA
Howard R. Green Company 1989

The following additional information was obtained from the *CCR Waste Disposal Area Supplemental Sampling Work Plan Gypsum/Fly Ash Landfill* prepared by Howard R. Green Company, March 29, 2007.

> *The two Cargill landfills areas under consideration in this Work Plan were constructed within an area formerly occupied by an abandoned tunnel/strip mine site. Tunnel mining (Thompson Mine) was being practiced on this site in the 1930s, and continued until at least 1942. Historical records are unclear, but it is known strip mining (currently known as the McGlothlen Abandoned Mine Land by the Iowa Department of Agriculture and Land Stewardship (IDALS) occurred subsequent to the demise of the tunnel mines, likely from the mid-1950s to the mid-1970s. As strip mining progressed across the site from west to east, the high-wall (bedrock outcrop) was exposed along the easterly boundary of the two landfill areas. The high-wall was left exposed along the easterly boundary of what is the current fly ash cell, and at the old tunnel mine areas easterly of what is the former gypsum fill cell. As strip mining progressed, shale-derived mine spoils were chaotically pushed westward, behind the active mining operation. These spoils remain today within the landfill areas, and forma ridge along the westerly edge of the landfill cells.*

2.4 HYDROLOGY OF THE SITE

The following information pertaining to this section was obtained from the *Hydrogeologic Investigation Report* prepared by H. R. Green Company, October 1989:

> *In this shallow upland system, the groundwater flow directions are clearly patterned after the surface water drainage. Since the excavation of the strip mine, which created free drainage to the headwall cuts, the shallow groundwater divide beneath the ridge crest has probably shifted a few tens of feet to the east and south. A few damp spots could be found along the basal loess outcrops in the east highwall in November, 1988. In wet years these would be expected to expand laterally and become an extensive damp zone, evaporating slow groundwater discharge.*
>
> *Groundwater piezometry for the Cargill site, for early 1989, is illustrated on Figure 36. Data is combined from monitoring wells plus available ponds and seeps. Note that the gradients are very steep across the property, indicating low permeability materials. The steepest gradients are near the northeast edge, where the upper geologic units have been completely stripped away in the highwall. This forms an exceedingly "impermeable" boundary because groundwater flow evaporates at the face of the highwall and cannot continue to flow at the upper levels. However, the gradient and minor flow continues down and northwestward through the shales below. The gradient is more gentle through the spoil area in the north-central part of the site because the spoils are made from crushed shale and are somewhat more permeable. The most gentle gradients are in the southeast corner of the property where still more permeable loess ($k \sim 10^{-4}$ cm/sec) permits more rapid lateral flow of groundwater. Overall, the shallow groundwater flow system is still northwestward toward the valley of Little Bluff Creek.*

The following information pertaining to this section was obtained from the CCR Landfill 2023 Annual Water Quality Report prepared by HR Green, Inc., November 30, 2023.

The groundwater flow directions at the site reflect surface topography. Overall, the shallow groundwater flow system is west-northwest toward the valley of Little Bluff Creek, which is likely unchanged from the pre-mining times. Excavation of the strip mine created free drainage of the high wall cuts resulting in a shifting of the shallow groundwater divide beneath the ridge crest toward the east and south, though this shift has been somewhat mitigated by subsequent filling.

The following information pertaining to this section was obtained from the *CCR Waste Disposal Area Supplemental Sampling Work Plan Gypsum/Fly Ash Landfill* prepared by Howard R. Green Company, March 29, 2007.

The Mississippian Aquifer is the first bedrock aquifer occurring beneath the Pennsylvanian formation. The potentiometric surface of this aquifer indicates a strong upward hydraulic gradient, which serves as added protection to the aquifer below. The aquifer is separated from the surficial deposits in most places by an aquiclude of Pennsylvanian shales.

3.0 FIGURES DISCUSSION

The following figures are attached.

3.1 FIGURE 1 – APPROVED MONITORING NETWORK

The Landfill property and hydrological monitoring system plan (HMSP) network is depicted in **Figure 1**. **Figure 1** indicates the locations of each monitoring well.

3.2 FIGURE 2 – GROUNDWATER CONTOURS

A groundwater contour map based on water levels measured in the monitoring wells during the April 2024 groundwater sampling event is included as **Figure 2**. **Figure 2** indicates a generally southerly flow direction through the North Fill Area and a generally southwesterly flow direction through the South Fill Area.

4.0 QA/QC SUMMARY

Date indicates the date(s) of sampling.

4.1 APRIL 17, 2024 (2024 ANNUAL SAMPLING EVENT)

Based on the QA review, no samples were rejected as unusable due to QC failures. In general, the quality of the analytical data for this reporting period does not appear to have been compromised by analytical irregularities and results affected by QC anomalies are qualified with the appropriate data flags, which are listed in the laboratory report in Appendix B-1. Data validation documentation can be found in Appendix B-2.

5.0 DATA EVALUATION

Statistical analyses in accordance with the requirements of IAC 567-103, the closure permit, and subsequent permit amendments and correspondence were conducted for the groundwater analytical data collected during the 2024 annual sampling event. The statistical evaluation conducted by Groundwater Stats Consulting for samples collected during the 2024 annual sampling event is located in **Appendix D** of this report.

5.1 DATA EVALUATION

Groundwater monitoring for the Landfill consists of samples from two upgradient monitoring wells located on the northeast and southwest corners of the Landfill property and from six downgradient monitoring wells, four located south of the North Landfill Unit and two located south of the South Landfill Unit. Monitoring for the landfill also consists of samples collected from groundwater underdrains, one for the North Landfill Unit (Fly Ash North #002) and one for the South Landfill Unit (Gypsum West #005).

There were six intrawell prediction limit exceedances detected based on 2024 sampling results as listed in **Table 1**. Half of the prediction limit exceedances detected based on 2024 sampling results were attributed to monitoring well MW-9.

Based on a review of concentrations listed in the Summary of Groundwater Chemistry in **Appendix C**, exceedances of action or advisory levels were largely associated with cobalt, lithium, and manganese as listed in **Table 9**. Manganese and lithium have generally exceeded the regulatory action or advisory levels established for this Landfill at most monitoring wells since sampling for these constituents began, including upgradient monitoring well MW-26 for both constituents and upgradient monitoring well MW-6 for lithium. Cobalt has generally exceeded the regulatory action or advisory levels established for this Landfill at most monitoring wells associated with the North Landfill Unit since sampling for these constituents began, including upgradient monitoring well MW-26.

5.2 TRENDING IN MONITORING WELLS

Mann Kendall trend analysis conducted at a 99% confidence level (α=0.01) for the groundwater monitoring wells indicated no statistically significant trends were present in the data sets during this reporting period. The trend analysis is included in **Appendix E**.

5.3 STATISTICAL METHODOLOGY JUSTIFICATION

As discussed in the call with DNR on October 3, 2024, intrawell statistical evaluations are believed to be appropriate for this site due to the extent of mining operations and wide distribution of mine spoils at the site. With the exception of upgradient monitoring well MW-6, all site monitoring wells are believed to be located in areas of previous mining and/or mining spoil deposits as evidenced by the pictures and figures contained in the Hydrogeologic Investigation Report prepared by H. R. Green Company, dated October 1989. The presence of mine spoils is also supported by the boring logs. The relevant figures from this report can be found in **Appendix F** to this report. Based on this information, interwell statistical comparisons of concentrations in downgradient monitoring wells located in areas of previous mining and/or mining spoil deposits to the concentrations at upgradient monitoring well MW-6, which is located in undisturbed loess, are not directly comparable.

Geochemical analysis of the available water quality indicators shows that concentrations of the water quality indicators at the site prior to establishment of the landfill were already highly variable across the site. A Schoeller graph of the available geochemical indicators sampled from site borings in 1989 is included in **Appendix F – All 1989 Sample Points** which shows the variability in groundwater concentrations of the geochemical indicators across the site.

The Landfill underdrains drain groundwater beneath the Landfill units and direct it to the outlets on the south side of the Landfill property. The areas of groundwater drainage beneath the Landfill units are all located in areas of previous mining activity and/or mining spoil deposits. As stated previously, interwell statistical comparisons of groundwater concentrations in areas of previous mining activity and/or mining spoil deposits to groundwater concentrations at upgradient monitoring well MW-6, which is located in undisturbed loess, are not directly comparable. Groundwater underdrain discharge statistical comparisons to groundwater monitoring well samples are also generally not directly comparable due to the difference in sample type and sample collection methodology. When comparing geochemical indicators in the underdrains to the mined area prior to establishment of the landfill (88-MW-13 (89)) and upgradient monitoring well MW-26 which is located in areas of mine spoil deposits, similar geochemical profiles emerge as shown in **Appendix F – Background/Groundwater Underdrains.** This data suggests that the character of the groundwater quality in the groundwater underdrains may be more related to past mining activities than the Landfill. Further and complete geochemical analysis of the underdrains, groundwater monitoring wells, and leachate from each Landfill unit is recommended in 2025. The following geochemical parameters will be added to the sitewide sampling list for 2025 which is recommended to occur in spring 2025: Bicarbonate, Carbonate, Calcium, Magnesium, Potassium, Chloride, Sodium, and Sulfate.

Comparisons of geochemical parameters and intrawell prediction limits are believed to be better methods for determining whether a release from the Landfill units is occurring at this site. The 2025 AWQR will contain geochemical analysis and intrawell prediction limits of the site monitoring wells and groundwater underdrains. Additionally, at least one leachate sample from each Landfill unit will be collected in 2025 and analyzed for the eight geochemical parameters to provide an end member signature for leachate. The proposed statistical methodology for intrawell comparisons is included in **Appendix G.**

6.0 RECOMMENDATIONS

6.1 SITE IMPACT ON GROUNDWATER

Based on the monitoring results and the previous discussion, it appears that past mining activities pre-dating Landfill development have had a significant influence on the character of groundwater at the site. Future geochemical and statistical analysis will be conducted to better determine the source of groundwater quality impact at the site.

6.2 PROPOSED MONITORING

The groundwater monitoring program is summarized in Table 1. No changes to the HMSP monitoring program are recommended at this time with the exception of adding geochemical parameters listed in Section 5.3 to the sitewide parameter list for the 2025 sampling event. It is recommended that sampling continue for calendar year 2025 as summarized in Table 2.

6.3 PROPOSED MONITORING WELL CHANGES

Monitoring well performance is summarized in Table 4. No proposed changes to the existing monitoring wells are recommended at this time.

Tables

1 Monitoring Program Summary
2 Monitoring Program Implementation Schedule
4 Monitoring Well Performance and Maintenance Summary
5 Background and GWPS Summary
6 Summary of Well/Detected Constituent Pairs with No Immediately Preceding Control Limit Exceedances
7 Summary Table of Ongoing and Newly Identified Control Limit Exceedances
8 Summary of Groundwater Chemistry (The Summary of Groundwater Chemistry is Located in Appendix C)
9 Historical Control and Action Level Exceedances

Table 1
Monitoring Program Summary
2024 Annual Water Quality Report
Cargill CCR Landfill
Permit No. 62-SDP-04-89C

Monitoring Well	Formation	Current Monitoring Program	Change for Next Sampling Event	Prediction Limit Exceedances	Total Number of Samples in Each Monitoring Program Since January 1, 2016		
					Routine	Supplemental	Remedial Action
MW-6 (u)	Weathered Till	Background	None		9	-	-
MW-8	Weathered Till	Detection	None		9	-	-
MW-9	Weathered Till	Detection	None	Iron, Manganese, Zinc	9	-	-
MW-10	Mine Spoil	Detection	None	Chloride	9	-	-
MW-11	Mine Spoil	Detection	None	Zinc	9	-	-
MW-12R	Mine Spoil	Detection	None		8	-	-
MW-13R	Mine Spoil	Detection	None	Chloride	9	-	-
MW-26 (u)	Mine Spoil	Background	None		9	-	-
Other							
Fly Ash North #002	Groundwater Drain Line	Detection	None		9	-	-
Gypsum West #005	Groundwater Drain Line	Detection	None		9	-	-
Tunnel Mine #004	Tunnel Mine Drainage	Detection	None		5	-	-

Notes: None.

Table 2
Monitoring Program Implementation Schedule
2024 Annual Water Quality Report
Cargill CCR Landfill
Permit No. 62-SDP-04-89C

Monitoring Well	Recent Sampling Dates and Constituents	Upcoming Sampling Dates and Constituents
	4/17/2024	Spring 2025
MW-6 (u)	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids, Geochemical Parameters
MW-8	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids, Geochemical Parameters
MW-9	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids, Geochemical Parameters
MW-26 (u)	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids, Geochemical Parameters
MW-10	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids, Geochemical Parameters
MW-11	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids, Geochemical Parameters
MW-12R	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids, Geochemical Parameters
MW-13R	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids, Geochemical Parameters
Fly Ash North #002 Underdrain	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids, Geochemical Parameters
Gypsum West #005 Underdrain	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids, Geochemical Parameters
North Fill Area Leachate (MH #8)	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids	Total Suspended Solids, Total Dissolved Solids, Geochemical Parameters
South Fill Area Leachate (MH#5)		Total Suspended Solids, Total Dissolved Solids, Geochemical Parameters
Tunnel Mine #004	None - Dry	Chloride, Fluoride, Sulfate, Arsenic, Barium, Beryllium, Boron, Calcium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Selenium, Zinc, Total Suspended Solids, Total Dissolved Solids, Geochemical Parameters

Notes: Geochemical Parameters: Bicarbonate, Carbonate, Calcium, Magnesium, Potassium, Chloride, Sodium, and Sulfate.

Table 4
Monitoring Well Performance and Maintenance Summary
2024 Annual Water Quality Report
Cargill CCR Landfill
Permit No. 62-SDP-04-89C

Well	Top of Casing	Top of Screen	Total Depth	Description	Date of Measurements	Maximum Depth
					4/17/2024	Discrepancy (ft)
MW-6	810.52	743.10	77.4	Groundwater Level (ft)	43.37	-1.0
				Groundwater Elevation (Ft MSL)	767.15	
				Measured Well Depth (ft)	78.4	
				Submerged screen	Y	
MW-8	808.01	758.10	60.0	Groundwater Level (ft)	41.86	-0.2
				Groundwater Elevation (Ft MSL)	766.15	
				Measured Well Depth (ft)	60.2	
				Submerged screen	Y	
MW-9	748.75	723.10	35.6	Groundwater Level (ft)	21.46	0.0
				Groundwater Elevation (Ft MSL)	727.29	
				Measured Well Depth (ft)	35.6	
				Submerged screen	Y	
MW-10	771.49	735.20	43.3	Groundwater Level (ft)	33.77	-3.5
				Groundwater Elevation (Ft MSL)	737.72	
				Measured Well Depth (ft)	46.8	
				Submerged screen	Y	
MW-11	755.25	738.43	32.3	Groundwater Level (ft)	23.18	-1.8
				Groundwater Elevation (Ft MSL)	732.07	
				Measured Well Depth (ft)	34.1	
				Submerged screen	N	
MW-12R	811.53	741.42	76.7	Groundwater Level (ft)	65.43	-2.0
				Groundwater Elevation (Ft MSL)	746.10	
				Measured Well Depth (ft)	78.7	
				Submerged screen	Y	
MW-13R	812.54	747.34	74.0	Groundwater Level (ft)	57.73	-3.8
				Groundwater Elevation (Ft MSL)	754.81	
				Measured Well Depth (ft)	77.9	
				Submerged screen	Y	
MW-26	749.20	732.30	26.9	Groundwater Level (ft)	20.50	-0.1
				Groundwater Elevation (Ft MSL)	728.70	
				Measured Well Depth (ft)	27.0	
				Submerged screen	N	

Comments:

1) Measured well depths were less than 1.0 foot shallower than the installed depths where measured; however, several monitoring wells have consistently measured more than 1.0 feet deeper than the installed depth. It is likely either the well construction information was recorded incorrectly or the wells were extended post-installation and the extensions were not recorded.

Table 5
Background and GWPS Summary
2024 Annual Water Quality Report
Cargill CCR Landfill
Permit No. 62-SDP-04-89C

Note: Background datasets for intrawell statistical analyses are provided in Appendix D, Attachment C.

Comments:

1) **Water quality results and effectiveness of the statistical data evaluation criteria**: Statistical evaluations consist of intrawell prediction limits.
2) **Changes to the previous statistical method during reporting period:** None.

Table 6

Summary of Well/Detected Constituent Pairs With No Immediately Preceding Prediction Limit Exceedances

2024 Annual Water Quality Report

Cargill CCR Landfill

Permit No. 62-SDP-04-89C

Well	Constituent	Units	Result	Background Standard
MW-9	Iron	mg/L	0.296	0.175
	Manganese	mg/L	0.233	0.01
	Zinc	mg/L	0.0232	0.02
MW-10	Chloride	mg/L	6.76	5.18
MW-11	Zinc	mg/L	0.235	0.0566
MW-13R	Chloride	mg/L	28	24.53

Note: Table includes prediction limit exceedances identified during the 2024 sampling event that were not identified as prediction limit exceedances in the previous year.

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 prediction limits:** None.

Table 7
2024 Prediction Limit Exceedances
2024 Annual Water Quality Report
Cargill CCR Landfill
Permit No. 62-SDP-04-89C

Key

Denotes ongoing prediction limit exceedances that were identified as prediction limit exceedances during this reporting period and the previous reporting period at least once during each reporting period.

Denotes newly identified prediction limit exceedances in the 2024 reporting period. Newly identified is defined as occuring at least once in the current reporting period but not in the immediately preceeding reporting period.

Well	Constituent	Units	Result	Background Standard	Action Level/ Statewide Standard
MW-9	Iron	mg/L	0.296	0.175	-
	Manganese	mg/L	0.233	0.01	0.3
	Zinc	mg/L	0.0232	0.02	2.0
MW-10	Chloride	mg/L	6.76	5.18	-
MW-11	Zinc	mg/L	0.235	0.0566	2.0
MW-13R	Chloride	mg/L	28	24.53	-

Notes: None.

Comments:

1) **Problems with the current HMSP network:** None.
2) **Proposed remedies:** None.
3) **Alternative constituent or sample frequency changes:** None.
4) **Plume delineation strategies:** Not Applicable.
5) **Property owner notifications:** Not applicable.

Table 8
Summary of Groundwater Chemistry
2024 Annual Water Quality Report
Cargill CCR Landfill
Permit No. 62-SDP-04-89C

The Summary of Groundwater Chemistry is located in Appendix C.

Table 9
2024 Prediction Limit & Action Level Exceedances
2024 Annual Water Quality Report
Cargill CCR Landfill
Permit No. 62-SDP-04-89C

Key

	Prediction/Control Limit Exceedance
X	Action Level Exceedance

Well	Constituent	2021	2022	2023	2024
MW-6 (u)	Lithium			X	X
MW-8	Lithium			X	X
	Magnesium				
	Zinc				
MW-9	Lithium			X	X
	Iron				
	Magnesium				
	Manganese			X	
	Sulfate				
	Zinc				
MW-10	Arsenic				
	Chloride				
	Cobalt	X	X	X	X
	Iron				
	Lithium			X	X
	Magnesium				
	Manganese	X	X	X	X
	Sulfate				
MW-11	Arsenic				
	Barium				
	Chloride				
	Cobalt	X	X	X	X
	Iron				
	Lithium			X	X
	Magnesium				
	Manganese	X	X	X	X
	pH				
	Sulfate				
	Zinc				
MW-12R	Chloride				
	Cobalt	X	X	X	X
	Iron				
	Lithium			X	X
	Magnesium				
	Managnese	X	X	X	X
	Sulfate				
MW-13R	Arsenic				
	Chloride				
	Cobalt	X	X	X	X
	Iron				
	Lithium			X	X
	Lead				
	Magnesium				
	Manganese	X	X	X	X
	pH				
	Sulfate				
	Zinc				
MW-26 (u)	Cobalt			X	X
	Lithium			X	
	Magnesium				
	Manganese	X	X	X	X
	pH				
	Sulfate				
#002 - Fly Ash North Underdrain	Cobalt			X	X
	Iron				
	Lithium			X	X
	Magnesium				
	Manganese	X	X	X	X
	Sulfate				
#005 - Gypsum West Underdrain	Cobalt			X	X
	Iron				
	Lithium			X	X
	Magnesium				
	Manganese	X	X	X	X
	Sulfate				
#004 - Tunnel Mine	Iron		NS	NS	NS
	Magnesium		NS	NS	NS
	Manganese	X	NS	NS	NS
	Sulfate		NS	NS	NS

NS - Not Sampled

Comments: 1) Statistical analyis for prediction limits began in 2023. Control limit exceedances shown for 2021 and 2022.

Figures

1 Approved Monitoring Network
2 Groundwater Contours

Approved Monitoring Network

Figure 1

Legend

- Monitoring Well
- Groundwater Underdrain
- Mine Drainage Manhole
- Mine Drainage Outlet
- Approximate Location of Groundwater Underdrain Pipe
- Approximate Location of Mine Drainage Line
- Office Structure
- Approximate Location of Fence
- Approximate Location of Waste Boundary
- Approximate Location of Property Boundary

Cargill CCR Landfill
Eddyville, IA
Project No: 27224433.00
Drawing Date: November 2024

N E S W

0 145 290 580 Feet

SCS ENGINEERS
environmental consultants and contractors

Esri, CGIAR, USGS, Esri, TomTom, Garmin, Foursquare, FAO, METI/NASA, USGS, Esri, HERE, Garmin, iPC, USDA NAIP, Iowa State University GIS Facility

Path: C:\Users\lmadison\OneDrive - SCS Engineers\Desktop\GIS\Mans\Cargill - Eddyville\2024 AWOR\Cargill-2024-AWOR.aprx
User: lmadison
Date Saved: 10/31/2024 10:57 AM

Groundwater Contours

Figure 2

Legend

- Aproximate Groundwater Contours Based on Field Maesurments Taken April 17, 2024
- Monitoring Well
- Approximate Location of Fence
- Approximate Location of Waste Boundary
- Approximate Location of Property Boundary
- Office Structure

Cargill CCR Landfill
Eddyville, IA
Project No: 27224433.00
Drawing Date: November 2024

N E S W

0 145 290 580 Feet

SCS ENGINEERS
environmental consultants and contractors

Esri, CGIAR, USGS, Esri, TomTom, Garmin, Foursquare, FAO, METI/NASA, USGS, USDA NAIP, Iowa State University GIS Facility

Path: C:\Users\lmadison\OneDrive - SCS Engineers\Desktop\GIS\Mans\Cargill - Eddyville\2024 AWOR\Cargill-2024-AWOR.aprx
User: lmadison
Date Saved: 10/31/2024 10:57 AM

Appendix A

Field Sampling Forms

GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cargill Sweeteners - North America CCR Landfill **Permit No.** 62 - SDP - 04 - 89P

Monitoring Well/Piezometer No. MW - 06

Upgradient X **Downgradient**

Name of person sampling Randy Gavin and Tyler Merritt

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? (please check) [X] **Yes** [ ] **No**

If no, explain

Standing Water or Litter? (please check) [ ] **Yes** [X] **No**

If yes, explain

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)

Elevation:

Top of inner well casing 810.52 **Ground Elevation** - - - -

Depth of Well 78.40 **Inside Casing Diameter** (in inches) 2.00

Equipment Used Solinst 101 P7 Water Level Meter

Groundwater Level (± 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	4/18/2024 8:45	43.37	767.15
***After Purging**	- - - -	- - - -	- - - -
***Before Purging**	4/18/2024 8:45	43.37	767.15

*C. WELL PURGING

Quantity of Water Removed from Well (gallons) - - - -

No. of Well Volumes (based on current water level) - - - -

Was well pumped/bailed dry? No

Equipment used:

Bailer type Discreet Interval Poly Bailer **Dedicated Bailer?** No

Pump type **Dedicated Pump?**

If not dedicated, method of cleaning Disposable

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

*D. FIELD MEASUREMENT

Weather Conditions Light rain, 47°F, NE wind @ 10-20 mph, 30.1" Hg

Field Measurements (after stabilization):

Temperature 11.45 **Units** °C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

pH 7.16

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Specific Conductance 1,246.3 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Comments

No purge protocol.

Certification

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature Randy Gavin **Date** 4/19/2024

Telephone 563-852-5105 **Fax** **Email** oatech@netins.net

NOTE: Attach Laboratory Report and 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cargill Sweeteners - North America CCR Landfill **Permit No.** 62 - SDP - 04 - 89P

Monitoring Well/Piezometer No. MW - 08

Upgradient **Downgradient** X

Name of person sampling Randy Gavin and Tyler Merritt

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? (please check) [X] **Yes** [ ] **No**

If no, explain

Standing Water or Litter? (please check) [ ] **Yes** [X] **No**

If yes, explain

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)

Elevation:

Top of inner well casing 808.01 **Ground Elevation** - - - -

Depth of Well 60.22 **Inside Casing Diameter** (in inches) 2.00

Equipment Used Solinst 101 P7 Water Level Meter

Groundwater Level (± 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	4/18/2024 9:10	41.86	766.15
***After Purging**	- - - -	- - - -	- - - -
***Before Purging**	4/18/2024 9:10	41.86	766.15

*C. WELL PURGING

Quantity of Water Removed from Well (gallons) - - - -

No. of Well Volumes (based on current water level) - - - -

Was well pumped/bailed dry? No

Equipment used:

Bailer type Discreet Interval Poly Bailer **Dedicated Bailer?** No

Pump type **Dedicated Pump?**

If not dedicated, method of cleaning Disposable

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

*D. FIELD MEASUREMENT

Weather Conditions Light rain, 47°F, NE wind @ 10-20 mph, 30.1" Hg

Field Measurements (after stabilization):

Temperature 11.73 **Units** °C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

pH 6.99

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Specific Conductance 1,130.9 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Comments

No purge protocol.

Certification

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature Randy Gavin **Date** 4/19/2024

Telephone 563-852-5105 **Fax** **Email** oatech@netins.net

NOTE: Attach Laboratory Report and 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cargill Sweeteners - North America CCR Landfill **Permit No.** 62 - SDP - 04 - 89P

Monitoring Well/Piezometer No. MW - 09

Upgradient **Downgradient** X

Name of person sampling Randy Gavin and Tyler Merritt

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? (please check) [X] **Yes** [ ] **No**

If no, explain

Standing Water or Litter? (please check) [ ] **Yes** [X] **No**

If yes, explain

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)

Elevation:

Top of inner well casing 748.75 **Ground Elevation** - - - -

Depth of Well 35.60 **Inside Casing Diameter** (in inches) 2.00

Equipment Used Solinst 101 P7 Water Level Meter

Groundwater Level (± 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	4/18/2024 9:40	21.46	727.29
***After Purging**	- - - -	- - - -	- - - -
***Before Purging**	4/18/2024 9:40	21.46	727.29

*C. WELL PURGING

Quantity of Water Removed from Well (gallons) - - - -

No. of Well Volumes (based on current water level) - - - -

Was well pumped/bailed dry? No

Equipment used:

Bailer type Discreet Interval Poly Bailer **Dedicated Bailer?** No

Pump type **Dedicated Pump?**

If not dedicated, method of cleaning Disposable

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

*D. FIELD MEASUREMENT

Weather Conditions Light rain, 47°F, NE wind @ 10-20 mph, 30.1" Hg

Field Measurements (after stabilization):

Temperature 12.20 **Units** °C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

pH 6.92

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Specific Conductance 2,363.1 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Comments

No purge protocol.

Certification

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature Randy Gavin **Date** 4/18/2024

Telephone 563-852-5105 **Fax** **Email** oatech@netins.net

NOTE: Attach Laboratory Report and 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cargill Sweeteners - North America CCR Landfill **Permit No.** 62 - SDP - 04 - 89P

Monitoring Well/Piezometer No. MW - 10

Upgradient **Downgradient** X

Name of person sampling Randy Gavin and Tyler Merritt

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? (please check) [X] **Yes** [ ] **No**

If no, explain

Standing Water or Litter? (please check) [ ] **Yes** [X] **No**

If yes, explain

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)

Elevation:

Top of inner well casing 771.49 **Ground Elevation** - - - -

Depth of Well 46.80 **Inside Casing Diameter** (in inches) 2.00

Equipment Used Solinst 101 P7 Water Level Meter

Groundwater Level (± 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	4/17/2024 16:20	33.77	737.72
***After Purging**	4/17/2024 16:39	33.66	737.83
***Before Purging**	4/17/2024 16:39	33.66	737.83

*C. WELL PURGING

Quantity of Water Removed from Well (gallons) 0.59

No. of Well Volumes (based on current water level) 0.28

Was well pumped/bailed dry? No

Equipment used:

Bailer type **Dedicated Bailer?**

Pump type QED Sample Pro Bladder Pump **Dedicated Pump?** No

If not dedicated, method of cleaning Liquinox detergent scrub, then a triple deionized water rinse

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

*D. FIELD MEASUREMENT

Weather Conditions Partly cloudy, 63°F, WNW wind @ 15-25 mph, 29.9" Hg

Field Measurements (after stabilization):

Temperature 18.26 **Units** °C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

pH 6.50

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Specific Conductance 2,801.3 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Comments

Low flow protocol.

Certification

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature Randy Gavin **Date** 4/19/2024

Telephone 563-852-5105 **Fax** **Email** oatech@netins.net

NOTE: Attach Laboratory Report and 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cargill Sweeteners - North America CCR Landfill **Permit No.** 62 - SDP - 04 - 89P

Monitoring Well/Piezometer No. MW - 11

Upgradient **Downgradient** X

Name of person sampling Randy Gavin and Tyler Merritt

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? (please check) [X] **Yes** [ ] **No**

If no, explain

Standing Water or Litter? (please check) [X] **Yes** [ ] **No**

If yes, explain The well will be extended and regraded for better drainage.

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)

Elevation:

Top of inner well casing 755.25 **Ground Elevation** - - - -

Depth of Well 34.12 **Inside Casing Diameter** (in inches) 2.00

Equipment Used Solinst 101 P7 Water Level Meter

Groundwater Level (± 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	4/17/2024 14:55	23.18	732.07
***After Purging**	4/17/2024 15:41	25.96	729.29
***Before Purging**	4/17/2024 15:41	25.96	729.29

*C. WELL PURGING

Quantity of Water Removed from Well (gallons) 1.19

No. of Well Volumes (based on current water level) 0.67

Was well pumped/bailed dry? No

Equipment used:

Bailer type **Dedicated Bailer?**

Pump type Geotech Geopump Peristaltic Pump **Dedicated Pump?** No

If not dedicated, method of cleaning Triple deionized water rinse

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

*D. FIELD MEASUREMENT

Weather Conditions Partly cloudy, 63°F, WNW wind @ 15-25 mph, 29.9" Hg

Field Measurements (after stabilization):

Temperature 16.90 **Units** °C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

pH 6.30

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Specific Conductance 2,093.4 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Comments

Low flow protocol.

Certification

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature Randy Gavin **Date** 4/19/2024

Telephone 563-852-5105 **Fax** **Email** oatech@netins.net

NOTE: Attach Laboratory Report and 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cargill Sweeteners - North America CCR Landfill **Permit No.** 62 - SDP - 04 - 89P

Monitoring Well/Piezometer No. MW - 12R

Upgradient **Downgradient** X

Name of person sampling Randy Gavin and Tyler Merritt

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? (please check) [X] **Yes** [ ] **No**

If no, explain

Standing Water or Litter? (please check) [ ] **Yes** [X] **No**

If yes, explain

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)

Elevation:

Top of inner well casing 811.53 **Ground Elevation** - - - -

Depth of Well 78.70 **Inside Casing Diameter** (in inches) 2.00

Equipment Used Solinst 101 P7 Water Level Meter

Groundwater Level (± 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	4/17/2024 17:12	65.43	746.10
***After Purging**	4/17/2024 17:33	65.69	745.84
***Before Purging**	4/17/2024 17:33	65.69	745.84

*C. WELL PURGING

Quantity of Water Removed from Well (gallons) 0.63

No. of Well Volumes (based on current water level) 0.29

Was well pumped/bailed dry? No

Equipment used:

Bailer type **Dedicated Bailer?**

Pump type QED Sample Pro Bladder Pump **Dedicated Pump?** No

If not dedicated, method of cleaning Liquinox detergent scrub, then a triple deionized water rinse

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

*D. FIELD MEASUREMENT

Weather Conditions Partly cloudy, 63°F, WNW wind @ 15-25 mph, 29.9" Hg

Field Measurements (after stabilization):

Temperature 16.42 **Units** °C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

pH 6.38

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Specific Conductance 3,836.7 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Comments

Low flow protocol.

Certification

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature Randy Gavin **Date** 4/19/2024

Telephone 563-852-5105 **Fax** **Email** oatech@netins.net

NOTE: Attach Laboratory Report and 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cargill Sweeteners - North America CCR Landfill **Permit No.** 62 - SDP - 04 - 89P

Monitoring Well/Piezometer No. MW - 13R

Upgradient **Downgradient** X

Name of person sampling Randy Gavin and Tyler Merritt

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? (please check) [X] **Yes** [ ] **No**

If no, explain

Standing Water or Litter? (please check) [ ] **Yes** [X] **No**

If yes, explain

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)

Elevation:

Top of inner well casing 812.54 **Ground Elevation** - - - -

Depth of Well 77.85 **Inside Casing Diameter** (in inches) 2.00

Equipment Used Solinst 101 P7 Water Level Meter

Groundwater Level (± 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	4/18/2024 9:55	57.73	754.81
***After Purging**	- - - -	- - - -	- - - -
***Before Purging**	4/18/2024 9:55	57.73	754.81

*C. WELL PURGING

Quantity of Water Removed from Well (gallons) - - - -

No. of Well Volumes (based on current water level) - - - -

Was well pumped/bailed dry? No

Equipment used:

Bailer type Discreet Interval Poly Bailer **Dedicated Bailer?** No

Pump type **Dedicated Pump?**

If not dedicated, method of cleaning Disposable

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

***D. FIELD MEASUREMENT**

Weather Conditions Light rain, 47°F, NE wind @ 10-20 mph, 30.1" Hg

Field Measurements (after stabilization):

Temperature 12.57 **Units** °C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

pH 6.46

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Specific Conductance 4,088.9 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Comments

No purge protocol.

Certification

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature Randy Gavin **Date** 4/19/2024

Telephone 563-852-5105 **Fax** **Email** oatech@netins.net

NOTE: Attach Laboratory Report and 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cargill Sweeteners - North America CCR Landfill **Permit No.** 62 - SDP - 04 - 89P

Monitoring Well/Piezometer No. MW - 26

Upgradient **Downgradient** X

Name of person sampling Randy Gavin and Tyler Merritt

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? (please check) [X] **Yes** [ ] **No**

If no, explain

Standing Water or Litter? (please check) [ ] **Yes** [X] **No**

If yes, explain

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)

Elevation:

Top of inner well casing 749.20 **Ground Elevation** - - - -

Depth of Well 27.00 **Inside Casing Diameter** (in inches) 2.00

Equipment Used Solinst 101 P7 Water Level Meter

Groundwater Level (± 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	4/17/2024 14:07	20.50	728.70
***After Purging**	4/17/2024 14:31	21.02	728.18
***Before Purging**	4/17/2024 14:31	21.02	728.18

*C. WELL PURGING

Quantity of Water Removed from Well (gallons) 0.76

No. of Well Volumes (based on current water level) 0.72

Was well pumped/bailed dry? No

Equipment used:

Bailer type **Dedicated Bailer?**

Pump type Geotech Geopump Peristaltic Pump **Dedicated Pump?** No

If not dedicated, method of cleaning Triple deionized water rinse

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

*D. FIELD MEASUREMENT

Weather Conditions Partly cloudy, 63°F, WNW wind @ 15-25 mph, 29.9" Hg

Field Measurements (after stabilization):

Temperature 14.29 **Units** °C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

pH 5.09

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Specific Conductance 2,388.6 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Comments

Low flow protocol.

Certification

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature Randy Gavin **Date** 4/19/2024

Telephone 563-852-5105 **Fax** **Email** oatech@netins.net

NOTE: Attach Laboratory Report and 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

SURFACE WATER SAMPLING FORM

Site Name: Cargill Sweeteners - North America CCR Landfill
Permit No.: 62 - SDP - 04 - 89P
Surface Monitoring Point No.: Gypsum West 005
Date/Time: 4/18/24 9:25
Name of person filling out form: Randy Gavin & Tyler Merritt

A. TYPE OF MONITORING POINT

- ☐ Stream
- ☐ Road Ditch
- ☐ Drainage Ditch
- ☒ Open Tile
- ☐ Tile with Riser
- ☐ Other (describe)

B. PURPOSE OF MONITORING POINT

- ☐ Upstream
- ☐ Within Landfill
- ☒ Downstream
- ☐ Other (describe)

C. MONITORING POINT CONDITIONS

General description/condition of monitoring point The point is located near the West fence where the natural drainage exits the property, downstream from the landfill.

Was monitoring point dry? No **Too little water to sample?** No

Was water flowing? ☒ YES ☐ NO

If yes, estimate quantity 325 mL/min **If yes, estimate depth**

Was water discolored? ☐ YES ☒ NO

If yes, describe

Does water have odor? ☐ YES ☒ NO

If yes, describe

Was ground discolored? ☒ YES ☐ NO

If yes, describe Red, rust color

Litter present? ☐ YES ☒ NO

If yes, describe

D. FIELD MEASUREMENT

Weather Conditions Partly cloudy, 63°F, WNW wind @ 15-25 mph, 29.9" Hg

Field Measurements (after stabilization):

Temperature 12.00 **Units** °C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

pH 6.39 **Equipment Used** In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Specific Conditions 3478.8 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

Comments

CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature Randy Gavin Digitally signed by Randy Gavin Date: 2023.09.18 10:08:24 -05'00' **Date** 4/19/24

Telephone 563 852 5105 **Fax** **Email** oatech@netins.net

NOTE: Attach 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

SURFACE WATER SAMPLING FORM

Site Name: Cargill Sweeteners - North America CCR Landfill
Permit No.: 62 - SDP - 04 - 89P
Surface Monitoring Point No.: Fly Ash North 002
Date/Time: 4/17/24 18:00
Name of person filling out form: Randy Gavin & Tyler Merritt

A. TYPE OF MONITORING POINT

- ☐ Stream
- ☐ Road Ditch
- ☐ Drainage Ditch
- ☐ Open Tile
- ☐ Tile with Riser
- ☒ Other (describe) Manhole

B. PURPOSE OF MONITORING POINT

- ☐ Upstream
- ☐ Within Landfill
- ☒ Downstream
- ☐ Other (describe)

C. MONITORING POINT CONDITIONS

General description/condition of monitoring point The point is located between monitoring wells MW-10 and MW-11, downstream from the landfill.

Was monitoring point dry? No **Too little water to sample?** No

Was water flowing? ☐ YES ☒ NO

If yes, estimate quantity _____ **If yes, estimate depth** _____

Was water discolored? ☐ YES ☒ NO

If yes, describe _____

Does water have odor? ☐ YES ☒ NO

If yes, describe _____

Was ground discolored? ☐ YES ☒ NO

If yes, describe _____

Litter present? ☐ YES ☒ NO

If yes, describe _____

D. FIELD MEASUREMENT

Weather Conditions Partly cloudy, 63°F, WNW wind @ 15-25 mph, 29.9" Hg

Field Measurements (after stabilization):

Temperature 21.19 **Units** °C

Equipment Used Horiba U-50 Series Multiparameter Water Quality Meter

pH 6.66 **Equipment Used** Horiba U-50 Series Multiparameter Water Quality Meter

Specific Conditions 3580.8 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

Comments

Sample obtained through manhole.

CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature Randy Gavin Digitally signed by Randy Gavin Date: 2023.09.18 09:56:21 -05'00' **Date** 4/19/24

Telephone 563 852 5105 **Fax** _____ **Email** oatech@netins.net

NOTE: Attach 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

Appendix B-1

Laboratory Analytical Data Sheets

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Rose Amundson
HR Green, Inc
PO BOX 9009
Cedar Rapids, Iowa 52409

Generated 4/25/2024 10:39:15 AM

JOB DESCRIPTION

Cargill Landfill - 718160J09-0685

JOB NUMBER

310-279297-1

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

Generated
4/25/2024 10:39:15 AM

Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

Table of Contents

Cover Page 1
Table of Contents 3
Case Narrative 4
Sample Summary 5
Detection Summary 6
Client Sample Results 10
Definitions 20
QC Sample Results 21
QC Association 26
Chronicle 29
Certification Summary 33
Method Summary 34
Chain of Custody 35
Receipt Checklists 39

Job ID: 310-279297-1 — Eurofins Cedar Falls

Job Narrative
310-279297-1

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 4/18/2024 1:30 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 -0.1°C and 0.4°C.

HPLC/IC
Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: MW-06 (310-279297-1), MW-08 (310-279297-2), MW-09 (310-279297-3), MW-10 (310-279297-4), MW-11 (310-279297-5), MW-12R (310-279297-6), MW-13R (310-279297-7), MW-26 (310-279297-8), Fly Ash North 002 (310-279297-9) and Gypsom West 005 (310-279297-10). Elevated reporting limits (RLs) are provided.

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

Metals
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: HR Green, Inc
Job ID: 310-279297-1
Project/Site: Cargill Landfill - 718160J09-0685

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-279297-1	MW-06	Water	04/18/24 08:45	04/18/24 13:30
310-279297-2	MW-08	Water	04/18/24 09:10	04/18/24 13:30
310-279297-3	MW-09	Water	04/18/24 09:40	04/18/24 13:30
310-279297-4	MW-10	Water	04/17/24 16:40	04/18/24 13:30
310-279297-5	MW-11	Water	04/17/24 15:45	04/18/24 13:30
310-279297-6	MW-12R	Water	04/17/24 17:35	04/18/24 13:30
310-279297-7	MW-13R	Water	04/18/24 09:55	04/18/24 13:30
310-279297-8	MW-26	Water	04/17/24 14:35	04/18/24 13:30
310-279297-9	Fly Ash North 002	Water	04/17/24 18:00	04/18/24 13:30
310-279297-10	Gypsom West 005	Water	04/18/24 09:25	04/18/24 13:30

Detection Summary

Client: HR Green, Inc
Job ID: 310-279297-1
Project/Site: Cargill Landfill - 718160J09-0685

Client Sample ID: MW-06 — Lab Sample ID: 310-279297-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	368		5.00		mg/L	5		9056A	Total/NA
Barium	0.0239		0.00200		mg/L	1		6020B	Total/NA
Magnesium	21.9		0.500		mg/L	1		6020B	Total/NA
Manganese	0.0122		0.0100		mg/L	1		6020B	Total/NA
Boron	0.368		0.100		mg/L	1		6020B	Total/NA
Calcium	83.7		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0538		0.0100		mg/L	1		6020B	Total/NA
pH	7.52	HF	1.00		SU	1		9040C	Total/NA
Total Suspended Solids	2.5		1.9		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	774		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-08 — Lab Sample ID: 310-279297-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	187		5.00		mg/L	5		9056A	Total/NA
Barium	0.0272		0.00200		mg/L	1		6020B	Total/NA
Magnesium	43.5		0.500		mg/L	1		6020B	Total/NA
Boron	0.315		0.100		mg/L	1		6020B	Total/NA
Calcium	129		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0908		0.0100		mg/L	1		6020B	Total/NA
pH	7.16	HF	1.00		SU	1		9040C	Total/NA
Total Suspended Solids	5.1		1.9		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	624		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-09 — Lab Sample ID: 310-279297-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1190		50.0		mg/L	50		9056A	Total/NA
Barium	0.0311		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.000904		0.000500		mg/L	1		6020B	Total/NA
Iron	0.296		0.100		mg/L	1		6020B	Total/NA
Magnesium	71.3		0.500		mg/L	1		6020B	Total/NA
Manganese	0.233		0.0100		mg/L	1		6020B	Total/NA
Boron	0.966		0.100		mg/L	1		6020B	Total/NA
Zinc	0.0232		0.0200		mg/L	1		6020B	Total/NA
Calcium	370		0.500		mg/L	1		6020B	Total/NA
Lithium	0.119		0.0100		mg/L	1		6020B	Total/NA
pH	7.60	HF	1.00		SU	1		9040C	Total/NA
Total Suspended Solids	8.3		1.9		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	1830		250		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-10 — Lab Sample ID: 310-279297-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.76		5.00		mg/L	5		9056A	Total/NA
Sulfate	1800		50.0		mg/L	50		9056A	Total/NA
Arsenic	0.00322		0.00200		mg/L	1		6020B	Total/NA
Barium	0.0148		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.0189		0.000500		mg/L	1		6020B	Total/NA
Iron	5.83		0.100		mg/L	1		6020B	Total/NA
Magnesium	186		2.00		mg/L	4		6020B	Total/NA
Manganese	6.86		0.0100		mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: HR Green, Inc
Project/Site: Cargill Landfill - 718160J09-0685

Job ID: 310-279297-1

Client Sample ID: MW-10 (Continued) — Lab Sample ID: 310-279297-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.602		0.400		mg/L	4		6020B	Total/NA
Calcium	593		2.00		mg/L	4		6020B	Total/NA
Lithium	0.152		0.0400		mg/L	4		6020B	Total/NA
pH	6.64	HF	1.00		SU	1		9040C	Total/NA
Total Suspended Solids	20.7		5.0		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	2840		250		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-11 — Lab Sample ID: 310-279297-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.56		5.00		mg/L	5		9056A	Total/NA
Sulfate	751		50.0		mg/L	50		9056A	Total/NA
Barium	0.0306		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.0441		0.000500		mg/L	1		6020B	Total/NA
Iron	16.9		0.100		mg/L	1		6020B	Total/NA
Magnesium	109		2.00		mg/L	4		6020B	Total/NA
Manganese	7.17		0.0100		mg/L	1		6020B	Total/NA
Boron	0.459		0.400		mg/L	4		6020B	Total/NA
Zinc	0.235		0.0200		mg/L	1		6020B	Total/NA
Calcium	401		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0529		0.0400		mg/L	4		6020B	Total/NA
pH	6.41	HF	1.00		SU	1		9040C	Total/NA
Total Suspended Solids	49.0		15.0		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	1780		250		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-12R — Lab Sample ID: 310-279297-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.57		5.00		mg/L	5		9056A	Total/NA
Sulfate	2200		50.0		mg/L	50		9056A	Total/NA
Barium	0.0153		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.00340		0.000500		mg/L	1		6020B	Total/NA
Iron	3.60		0.100		mg/L	1		6020B	Total/NA
Magnesium	194		2.00		mg/L	4		6020B	Total/NA
Manganese	0.771		0.0100		mg/L	1		6020B	Total/NA
Boron	1.40		0.400		mg/L	4		6020B	Total/NA
Calcium	547		2.00		mg/L	4		6020B	Total/NA
Lithium	0.300		0.0400		mg/L	4		6020B	Total/NA
pH	6.49	HF	1.00		SU	1		9040C	Total/NA
Total Suspended Solids	3.0		1.9		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	4160		250		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-13R — Lab Sample ID: 310-279297-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	28.0		5.00		mg/L	5		9056A	Total/NA
Sulfate	2380		50.0		mg/L	50		9056A	Total/NA
Barium	0.0202		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.0322		0.000500		mg/L	1		6020B	Total/NA
Iron	1.05		0.100		mg/L	1		6020B	Total/NA
Magnesium	294		2.00		mg/L	4		6020B	Total/NA
Manganese	8.50		0.0100		mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-13R (Continued) — Lab Sample ID: 310-279297-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.735		0.400		mg/L	4		6020B	Total/NA
Zinc	0.0233		0.0200		mg/L	1		6020B	Total/NA
Calcium	558		2.00		mg/L	4		6020B	Total/NA
Lithium	0.266		0.0400		mg/L	4		6020B	Total/NA
pH	6.60	HF	1.00		SU	1		9040C	Total/NA
Total Suspended Solids	18.6		3.0		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	3630		250		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-26 — Lab Sample ID: 310-279297-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	2240		50.0		mg/L	50		9056A	Total/NA
Barium	0.0107		0.00200		mg/L	1		6020B	Total/NA
Beryllium	0.00132		0.00100		mg/L	1		6020B	Total/NA
Cobalt	0.0572		0.000500		mg/L	1		6020B	Total/NA
Iron	0.111		0.100		mg/L	1		6020B	Total/NA
Magnesium	307		3.50		mg/L	7		6020B	Total/NA
Manganese	38.8		0.0700		mg/L	7		6020B	Total/NA
Zinc	0.250		0.0200		mg/L	1		6020B	Total/NA
Calcium	437		0.500		mg/L	1		6020B	Total/NA
pH	5.21	HF	1.00		SU	1		9040C	Total/NA
Total Dissolved Solids	3080		250		mg/L	1		SM 2540C	Total/NA

Client Sample ID: Fly Ash North 002 — Lab Sample ID: 310-279297-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.52		5.00		mg/L	5		9056A	Total/NA
Sulfate	2320		50.0		mg/L	50		9056A	Total/NA
Barium	0.0166		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.0114		0.000500		mg/L	1		6020B	Total/NA
Iron	5.84		0.100		mg/L	1		6020B	Total/NA
Magnesium	344		2.00		mg/L	4		6020B	Total/NA
Manganese	2.92		0.0100		mg/L	1		6020B	Total/NA
Boron	1.06		0.400		mg/L	4		6020B	Total/NA
Calcium	585		2.00		mg/L	4		6020B	Total/NA
Lithium	0.264		0.0400		mg/L	4		6020B	Total/NA
pH	6.81	HF	1.00		SU	1		9040C	Total/NA
Total Dissolved Solids	3700		250		mg/L	1		SM 2540C	Total/NA

Client Sample ID: Gypsom West 005 — Lab Sample ID: 310-279297-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.72		5.00		mg/L	5		9056A	Total/NA
Fluoride	1.23		1.00		mg/L	5		9056A	Total/NA
Sulfate	2140		50.0		mg/L	50		9056A	Total/NA
Arsenic	0.00503		0.00200		mg/L	1		6020B	Total/NA
Barium	0.0108		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.0638		0.000500		mg/L	1		6020B	Total/NA
Iron	77.1		0.100		mg/L	1		6020B	Total/NA
Magnesium	249		2.00		mg/L	4		6020B	Total/NA
Manganese	15.0		0.0400		mg/L	4		6020B	Total/NA
Boron	0.968		0.400		mg/L	4		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: Gypsom West 005 (Continued)
Lab Sample ID: 310-279297-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Zinc	0.107		0.0200		mg/L	1		6020B	Total/NA
Calcium	613		2.00		mg/L	4		6020B	Total/NA
Lithium	0.218		0.0400		mg/L	4		6020B	Total/NA
pH	6.60	HF	1.00		SU	1		9040C	Total/NA
Total Suspended Solids	46.7		5.0		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	3140		250		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client: HR Green, Inc
Job ID: 310-279297-1
Project/Site: Cargill Landfill - 718160J09-0685

Client Sample ID: MW-06
Lab Sample ID: 310-279297-1
Date Collected: 04/18/24 08:45
Matrix: Water
Date Received: 04/18/24 13:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			04/23/24 21:21	5
Fluoride	<1.00		1.00		mg/L			04/23/24 21:21	5
Sulfate	**368**		5.00		mg/L			04/23/24 21:21	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 20:32	1
Barium	**0.0239**		0.00200		mg/L		04/19/24 09:00	04/22/24 20:32	1
Beryllium	<0.00100		0.00100		mg/L		04/19/24 09:00	04/22/24 20:32	1
Cobalt	<0.000500		0.000500		mg/L		04/19/24 09:00	04/22/24 20:32	1
Copper	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 20:32	1
Iron	<0.100		0.100		mg/L		04/19/24 09:00	04/22/24 20:32	1
Lead	<0.000500		0.000500		mg/L		04/19/24 09:00	04/22/24 20:32	1
Magnesium	**21.9**		0.500		mg/L		04/19/24 09:00	04/22/24 20:32	1
Manganese	**0.0122**		0.0100		mg/L		04/19/24 09:00	04/22/24 20:32	1
Selenium	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 20:32	1
Boron	**0.368**		0.100		mg/L		04/19/24 09:00	04/24/24 14:39	1
Zinc	<0.0200		0.0200		mg/L		04/19/24 09:00	04/22/24 20:32	1
Calcium	**83.7**		0.500		mg/L		04/19/24 09:00	04/22/24 20:32	1
Lithium	**0.0538**		0.0100		mg/L		04/19/24 09:00	04/23/24 20:25	1
Molybdenum	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 20:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.5**		1.9		mg/L			04/18/24 19:12	1
Total Dissolved Solids (SM 2540C)	**774**		50.0		mg/L			04/19/24 15:44	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**7.52**	**HF**	1.00		SU			04/18/24 15:26	1

Client: HR Green, Inc
Job ID: 310-279297-1
Project/Site: Cargill Landfill - 718160J09-0685

Client Sample ID: MW-08
Lab Sample ID: 310-279297-2
Date Collected: 04/18/24 09:10
Matrix: Water
Date Received: 04/18/24 13:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			04/23/24 21:33	5
Fluoride	<1.00		1.00		mg/L			04/23/24 21:33	5
Sulfate	**187**		5.00		mg/L			04/23/24 21:33	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 20:51	1
Barium	**0.0272**		0.00200		mg/L		04/19/24 09:00	04/22/24 20:51	1
Beryllium	<0.00100		0.00100		mg/L		04/19/24 09:00	04/22/24 20:51	1
Cobalt	<0.000500		0.000500		mg/L		04/19/24 09:00	04/22/24 20:51	1
Copper	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 20:51	1
Iron	<0.100		0.100		mg/L		04/19/24 09:00	04/22/24 20:51	1
Lead	<0.000500		0.000500		mg/L		04/19/24 09:00	04/22/24 20:51	1
Magnesium	**43.5**		0.500		mg/L		04/19/24 09:00	04/22/24 20:51	1
Manganese	<0.0100		0.0100		mg/L		04/19/24 09:00	04/22/24 20:51	1
Selenium	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 20:51	1
Boron	**0.315**		0.100		mg/L		04/19/24 09:00	04/24/24 14:56	1
Zinc	<0.0200		0.0200		mg/L		04/19/24 09:00	04/22/24 20:51	1
Calcium	**129**		0.500		mg/L		04/19/24 09:00	04/22/24 20:51	1
Lithium	**0.0908**		0.0100		mg/L		04/19/24 09:00	04/23/24 20:42	1
Molybdenum	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 20:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**5.1**		1.9		mg/L			04/18/24 19:12	1
Total Dissolved Solids (SM 2540C)	**624**		50.0		mg/L			04/19/24 15:44	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**7.16**	**HF**	1.00		SU			04/18/24 15:20	1

Client: HR Green, Inc
Job ID: 310-279297-1
Project/Site: Cargill Landfill - 718160J09-0685

Client Sample ID: MW-09
Lab Sample ID: 310-279297-3

Date Collected: 04/18/24 09:40
Matrix: Water

Date Received: 04/18/24 13:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			04/23/24 21:45	5
Fluoride	<1.00		1.00		mg/L			04/23/24 21:45	5
Sulfate	**1190**		50.0		mg/L			04/24/24 09:12	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 20:53	1
Barium	**0.0311**		0.00200		mg/L		04/19/24 09:00	04/22/24 20:53	1
Beryllium	<0.00100		0.00100		mg/L		04/19/24 09:00	04/22/24 20:53	1
Cobalt	**0.000904**		0.000500		mg/L		04/19/24 09:00	04/22/24 20:53	1
Copper	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 20:53	1
Iron	**0.296**		0.100		mg/L		04/19/24 09:00	04/22/24 20:53	1
Lead	<0.000500		0.000500		mg/L		04/19/24 09:00	04/22/24 20:53	1
Magnesium	**71.3**		0.500		mg/L		04/19/24 09:00	04/22/24 20:53	1
Manganese	**0.233**		0.0100		mg/L		04/19/24 09:00	04/22/24 20:53	1
Selenium	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 20:53	1
Boron	**0.966**		0.100		mg/L		04/19/24 09:00	04/24/24 14:59	1
Zinc	**0.0232**		0.0200		mg/L		04/19/24 09:00	04/22/24 20:53	1
Calcium	**370**		0.500		mg/L		04/19/24 09:00	04/22/24 20:53	1
Lithium	**0.119**		0.0100		mg/L		04/19/24 09:00	04/23/24 20:45	1
Molybdenum	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 20:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**8.3**		1.9		mg/L			04/18/24 19:12	1
Total Dissolved Solids (SM 2540C)	**1830**		250		mg/L			04/19/24 15:44	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**7.60**	**HF**	1.00		SU			04/18/24 15:24	1

Client: HR Green, Inc
Job ID: 310-279297-1
Project/Site: Cargill Landfill - 718160J09-0685

Client Sample ID: MW-10
Lab Sample ID: 310-279297-4

Date Collected: 04/17/24 16:40
Matrix: Water
Date Received: 04/18/24 13:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6.76**		5.00		mg/L			04/23/24 21:58	5
Fluoride	<1.00		1.00		mg/L			04/23/24 21:58	5
Sulfate	**1800**		50.0		mg/L			04/24/24 09:24	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00322**		0.00200		mg/L		04/19/24 09:00	04/22/24 20:56	1
Barium	**0.0148**		0.00200		mg/L		04/19/24 09:00	04/22/24 20:56	1
Beryllium	<0.00100		0.00100		mg/L		04/19/24 09:00	04/22/24 20:56	1
Cobalt	**0.0189**		0.000500		mg/L		04/19/24 09:00	04/22/24 20:56	1
Copper	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 20:56	1
Iron	**5.83**		0.100		mg/L		04/19/24 09:00	04/22/24 20:56	1
Lead	<0.000500		0.000500		mg/L		04/19/24 09:00	04/22/24 20:56	1
Magnesium	**186**		2.00		mg/L		04/19/24 09:00	04/23/24 20:49	4
Manganese	**6.86**		0.0100		mg/L		04/19/24 09:00	04/22/24 20:56	1
Selenium	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 20:56	1
Boron	**0.602**		0.400		mg/L		04/19/24 09:00	04/24/24 15:17	4
Zinc	<0.0200		0.0200		mg/L		04/19/24 09:00	04/22/24 20:56	1
Calcium	**593**		2.00		mg/L		04/19/24 09:00	04/23/24 20:49	4
Lithium	**0.152**		0.0400		mg/L		04/19/24 09:00	04/23/24 20:49	4
Molybdenum	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 20:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**20.7**		5.0		mg/L			04/18/24 19:12	1
Total Dissolved Solids (SM 2540C)	**2840**		250		mg/L			04/19/24 15:37	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**6.64**	**HF**	1.00		SU			04/18/24 15:25	1

Client: HR Green, Inc
Job ID: 310-279297-1
Project/Site: Cargill Landfill - 718160J09-0685

Client Sample ID: MW-11
Lab Sample ID: 310-279297-5

Date Collected: 04/17/24 15:45
Matrix: Water

Date Received: 04/18/24 13:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6.56**		5.00		mg/L			04/23/24 22:34	5
Fluoride	<1.00		1.00		mg/L			04/23/24 22:34	5
Sulfate	**751**		50.0		mg/L			04/24/24 09:36	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 20:58	1
Barium	**0.0306**		0.00200		mg/L		04/19/24 09:00	04/22/24 20:58	1
Beryllium	<0.00100		0.00100		mg/L		04/19/24 09:00	04/22/24 20:58	1
Cobalt	**0.0441**		0.000500		mg/L		04/19/24 09:00	04/22/24 20:58	1
Copper	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 20:58	1
Iron	**16.9**		0.100		mg/L		04/19/24 09:00	04/22/24 20:58	1
Lead	<0.000500		0.000500		mg/L		04/19/24 09:00	04/22/24 20:58	1
Magnesium	**109**		2.00		mg/L		04/19/24 09:00	04/23/24 21:06	4
Manganese	**7.17**		0.0100		mg/L		04/19/24 09:00	04/22/24 20:58	1
Selenium	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 20:58	1
Boron	**0.459**		0.400		mg/L		04/19/24 09:00	04/23/24 21:06	4
Zinc	**0.235**		0.0200		mg/L		04/19/24 09:00	04/22/24 20:58	1
Calcium	**401**		0.500		mg/L		04/19/24 09:00	04/22/24 20:58	1
Lithium	**0.0529**		0.0400		mg/L		04/19/24 09:00	04/23/24 21:06	4
Molybdenum	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 20:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**49.0**		15.0		mg/L			04/23/24 13:03	1
Total Dissolved Solids (SM 2540C)	**1780**		250		mg/L			04/19/24 15:37	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**6.41**	**HF**	1.00		SU			04/18/24 15:23	1

Client: HR Green, Inc
Job ID: 310-279297-1
Project/Site: Cargill Landfill - 718160J09-0685

Client Sample ID: MW-12R
Lab Sample ID: 310-279297-6

Date Collected: 04/17/24 17:35
Matrix: Water

Date Received: 04/18/24 13:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.57**		5.00		mg/L			04/23/24 22:46	5
Fluoride	<1.00		1.00		mg/L			04/23/24 22:46	5
Sulfate	**2200**		50.0		mg/L			04/24/24 09:48	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 21:00	1
Barium	**0.0153**		0.00200		mg/L		04/19/24 09:00	04/22/24 21:00	1
Beryllium	<0.00100		0.00100		mg/L		04/19/24 09:00	04/22/24 21:00	1
Cobalt	**0.00340**		0.000500		mg/L		04/19/24 09:00	04/22/24 21:00	1
Copper	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 21:00	1
Iron	**3.60**		0.100		mg/L		04/19/24 09:00	04/22/24 21:00	1
Lead	<0.000500		0.000500		mg/L		04/19/24 09:00	04/22/24 21:00	1
Magnesium	**194**		2.00		mg/L		04/19/24 09:00	04/23/24 21:09	4
Manganese	**0.771**		0.0100		mg/L		04/19/24 09:00	04/22/24 21:00	1
Selenium	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 21:00	1
Boron	**1.40**		0.400		mg/L		04/19/24 09:00	04/23/24 21:09	4
Zinc	<0.0200		0.0200		mg/L		04/19/24 09:00	04/22/24 21:00	1
Calcium	**547**		2.00		mg/L		04/19/24 09:00	04/23/24 21:09	4
Lithium	**0.300**		0.0400		mg/L		04/19/24 09:00	04/23/24 21:09	4
Molybdenum	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 21:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**3.0**		1.9		mg/L			04/18/24 19:12	1
Total Dissolved Solids (SM 2540C)	**4160**		250		mg/L			04/19/24 15:37	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**6.49**	**HF**	1.00		SU			04/18/24 15:22	1

Client: HR Green, Inc
Job ID: 310-279297-1
Project/Site: Cargill Landfill - 718160J09-0685

Client Sample ID: MW-13R
Lab Sample ID: 310-279297-7

Date Collected: 04/18/24 09:55
Matrix: Water
Date Received: 04/18/24 13:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**28.0**		5.00		mg/L			04/23/24 22:58	5
Fluoride	<1.00		1.00		mg/L			04/23/24 22:58	5
Sulfate	**2380**		50.0		mg/L			04/24/24 10:00	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 21:02	1
Barium	**0.0202**		0.00200		mg/L		04/19/24 09:00	04/22/24 21:02	1
Beryllium	<0.00100		0.00100		mg/L		04/19/24 09:00	04/22/24 21:02	1
Cobalt	**0.0322**		0.000500		mg/L		04/19/24 09:00	04/22/24 21:02	1
Copper	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 21:02	1
Iron	**1.05**		0.100		mg/L		04/19/24 09:00	04/22/24 21:02	1
Lead	<0.000500		0.000500		mg/L		04/19/24 09:00	04/22/24 21:02	1
Magnesium	**294**		2.00		mg/L		04/19/24 09:00	04/23/24 21:13	4
Manganese	**8.50**		0.0100		mg/L		04/19/24 09:00	04/22/24 21:02	1
Selenium	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 21:02	1
Boron	**0.735**		0.400		mg/L		04/19/24 09:00	04/23/24 21:13	4
Zinc	**0.0233**		0.0200		mg/L		04/19/24 09:00	04/22/24 21:02	1
Calcium	**558**		2.00		mg/L		04/19/24 09:00	04/23/24 21:13	4
Lithium	**0.266**		0.0400		mg/L		04/19/24 09:00	04/23/24 21:13	4
Molybdenum	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 21:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**18.6**		3.0		mg/L			04/18/24 19:12	1
Total Dissolved Solids (SM 2540C)	**3630**		250		mg/L			04/19/24 15:44	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**6.60**	**HF**	1.00		SU			04/18/24 15:27	1

Client: HR Green, Inc
Job ID: 310-279297-1
Project/Site: Cargill Landfill - 718160J09-0685

Client Sample ID: MW-26
Lab Sample ID: 310-279297-8

Date Collected: 04/17/24 14:35
Matrix: Water

Date Received: 04/18/24 13:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			04/23/24 23:10	5
Fluoride	<1.00		1.00		mg/L			04/23/24 23:10	5
Sulfate	**2240**		50.0		mg/L			04/24/24 10:12	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 21:13	1
Barium	**0.0107**		0.00200		mg/L		04/19/24 09:00	04/22/24 21:13	1
Beryllium	**0.00132**		0.00100		mg/L		04/19/24 09:00	04/22/24 21:13	1
Cobalt	**0.0572**		0.000500		mg/L		04/19/24 09:00	04/22/24 21:13	1
Copper	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 21:13	1
Iron	**0.111**		0.100		mg/L		04/19/24 09:00	04/22/24 21:13	1
Lead	<0.000500		0.000500		mg/L		04/19/24 09:00	04/22/24 21:13	1
Magnesium	**307**		3.50		mg/L		04/19/24 09:00	04/23/24 21:16	7
Manganese	**38.8**		0.0700		mg/L		04/19/24 09:00	04/23/24 21:16	7
Selenium	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 21:13	1
Boron	<0.700		0.700		mg/L		04/19/24 09:00	04/23/24 21:16	7
Zinc	**0.250**		0.0200		mg/L		04/19/24 09:00	04/22/24 21:13	1
Calcium	**437**		0.500		mg/L		04/19/24 09:00	04/22/24 21:13	1
Lithium	<0.0700		0.0700		mg/L		04/19/24 09:00	04/23/24 21:16	7
Molybdenum	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 21:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.9		1.9		mg/L			04/18/24 19:12	1
Total Dissolved Solids (SM 2540C)	**3080**		250		mg/L			04/19/24 15:44	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**5.21**	**HF**	1.00		SU			04/18/24 15:28	1

Client: HR Green, Inc
Job ID: 310-279297-1
Project/Site: Cargill Landfill - 718160J09-0685

Client Sample ID: Fly Ash North 002

Lab Sample ID: 310-279297-9

Date Collected: 04/17/24 18:00

Matrix: Water

Date Received: 04/18/24 13:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.52**		5.00		mg/L			04/23/24 23:22	5
Fluoride	<1.00		1.00		mg/L			04/23/24 23:22	5
Sulfate	**2320**		50.0		mg/L			04/24/24 10:24	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 21:15	1
Barium	**0.0166**		0.00200		mg/L		04/19/24 09:00	04/22/24 21:15	1
Beryllium	<0.00100		0.00100		mg/L		04/19/24 09:00	04/22/24 21:15	1
Cobalt	**0.0114**		0.000500		mg/L		04/19/24 09:00	04/22/24 21:15	1
Copper	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 21:15	1
Iron	**5.84**		0.100		mg/L		04/19/24 09:00	04/22/24 21:15	1
Lead	<0.000500		0.000500		mg/L		04/19/24 09:00	04/22/24 21:15	1
Magnesium	**344**		2.00		mg/L		04/19/24 09:00	04/23/24 21:20	4
Manganese	**2.92**		0.0100		mg/L		04/19/24 09:00	04/22/24 21:15	1
Selenium	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 21:15	1
Boron	**1.06**		0.400		mg/L		04/19/24 09:00	04/23/24 21:20	4
Zinc	<0.0200		0.0200		mg/L		04/19/24 09:00	04/22/24 21:15	1
Calcium	**585**		2.00		mg/L		04/19/24 09:00	04/23/24 21:20	4
Lithium	**0.264**		0.0400		mg/L		04/19/24 09:00	04/23/24 21:20	4
Molybdenum	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 21:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<5.0		5.0		mg/L			04/18/24 19:12	1
Total Dissolved Solids (SM 2540C)	**3700**		250		mg/L			04/19/24 15:44	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**6.81**	**HF**	1.00		SU			04/18/24 15:29	1

Client: HR Green, Inc
Job ID: 310-279297-1
Project/Site: Cargill Landfill - 718160J09-0685

Client Sample ID: Gypsom West 005
Lab Sample ID: 310-279297-10
Date Collected: 04/18/24 09:25
Matrix: Water
Date Received: 04/18/24 13:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.72		5.00		mg/L			04/23/24 23:24	5
Fluoride	1.23		1.00		mg/L			04/23/24 23:24	5
Sulfate	2140		50.0		mg/L			04/24/24 10:36	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00503		0.00200		mg/L		04/19/24 09:00	04/22/24 21:18	1
Barium	0.0108		0.00200		mg/L		04/19/24 09:00	04/22/24 21:18	1
Beryllium	<0.00100		0.00100		mg/L		04/19/24 09:00	04/22/24 21:18	1
Cobalt	0.0638		0.000500		mg/L		04/19/24 09:00	04/22/24 21:18	1
Copper	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 21:18	1
Iron	77.1		0.100		mg/L		04/19/24 09:00	04/22/24 21:18	1
Lead	<0.000500		0.000500		mg/L		04/19/24 09:00	04/22/24 21:18	1
Magnesium	249		2.00		mg/L		04/19/24 09:00	04/23/24 21:23	4
Manganese	15.0		0.0400		mg/L		04/19/24 09:00	04/23/24 21:23	4
Selenium	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 21:18	1
Boron	0.968		0.400		mg/L		04/19/24 09:00	04/23/24 21:23	4
Zinc	0.107		0.0200		mg/L		04/19/24 09:00	04/22/24 21:18	1
Calcium	613		2.00		mg/L		04/19/24 09:00	04/23/24 21:23	4
Lithium	0.218		0.0400		mg/L		04/19/24 09:00	04/23/24 21:23	4
Molybdenum	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 21:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	46.7		5.0		mg/L			04/23/24 15:48	1
Total Dissolved Solids (SM 2540C)	3140		250		mg/L			04/19/24 15:44	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	6.60	HF	1.00		SU			04/18/24 15:30	1

Definitions/Glossary

Client: HR Green, Inc
Job ID: 310-279297-1
Project/Site: Cargill Landfill - 718160J09-0685

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.

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

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 310-419730/3
Matrix: Water
Analysis Batch: 419730

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		mg/L			04/23/24 18:32	1
Fluoride	<0.200		0.200		mg/L			04/23/24 18:32	1
Sulfate	<1.00		1.00		mg/L			04/23/24 18:32	1

Lab Sample ID: LCS 310-419730/4
Matrix: Water
Analysis Batch: 419730

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	10.53		mg/L		105	90 - 110
Fluoride	2.00	2.181		mg/L		109	90 - 110
Sulfate	10.0	10.56		mg/L		106	90 - 110

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-419187/1-A
Matrix: Water
Analysis Batch: 419536

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 419187

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 20:27	1
Barium	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 20:27	1
Beryllium	<0.00100		0.00100		mg/L		04/19/24 09:00	04/22/24 20:27	1
Cobalt	<0.000500		0.000500		mg/L		04/19/24 09:00	04/22/24 20:27	1
Copper	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 20:27	1
Iron	<0.100		0.100		mg/L		04/19/24 09:00	04/22/24 20:27	1
Lead	<0.000500		0.000500		mg/L		04/19/24 09:00	04/22/24 20:27	1
Magnesium	<0.500		0.500		mg/L		04/19/24 09:00	04/22/24 20:27	1
Manganese	<0.0100		0.0100		mg/L		04/19/24 09:00	04/22/24 20:27	1
Selenium	<0.00500		0.00500		mg/L		04/19/24 09:00	04/22/24 20:27	1
Zinc	<0.0200		0.0200		mg/L		04/19/24 09:00	04/22/24 20:27	1
Calcium	<0.500		0.500		mg/L		04/19/24 09:00	04/22/24 20:27	1
Molybdenum	<0.00200		0.00200		mg/L		04/19/24 09:00	04/22/24 20:27	1

Lab Sample ID: MB 310-419187/1-A
Matrix: Water
Analysis Batch: 419652

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 419187

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.100		0.100		mg/L		04/19/24 09:00	04/23/24 20:19	1
Lithium	<0.0100		0.0100		mg/L		04/19/24 09:00	04/23/24 20:19	1

Lab Sample ID: LCS 310-419187/2-A
Matrix: Water
Analysis Batch: 419536

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 419187

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.2048		mg/L		102	80 - 120
Barium	0.100	0.1037		mg/L		104	80 - 120
Beryllium	0.100	0.1037		mg/L		104	80 - 120

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

Lab Sample ID: LCS 310-419187/2-A
Matrix: Water
Analysis Batch: 419536

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 419187

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cobalt	0.100	0.1124		mg/L		112	80 - 120
Copper	0.200	0.2074		mg/L		104	80 - 120
Iron	0.200	0.2189		mg/L		109	80 - 120
Lead	0.200	0.2136		mg/L		107	80 - 120
Magnesium	2.00	2.253		mg/L		113	80 - 120
Manganese	0.100	0.1005		mg/L		100	80 - 120
Selenium	0.400	0.3925		mg/L		98	80 - 120
Zinc	0.200	0.1901		mg/L		95	80 - 120
Calcium	2.00	1.949		mg/L		97	80 - 120
Molybdenum	0.200	0.2043		mg/L		102	80 - 120

Lab Sample ID: LCS 310-419187/2-A
Matrix: Water
Analysis Batch: 419652

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 419187

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	0.200	0.2409		mg/L		120	80 - 120
Lithium	0.200	0.2089		mg/L		104	80 - 120

Lab Sample ID: 310-279297-1 MS
Matrix: Water
Analysis Batch: 419536

Client Sample ID: MW-06
Prep Type: Total/NA
Prep Batch: 419187

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	<0.00200		0.200	0.2127		mg/L		106	75 - 125
Barium	0.0239		0.100	0.1319		mg/L		108	75 - 125
Beryllium	<0.00100		0.100	0.1110		mg/L		111	75 - 125
Cobalt	<0.000500		0.100	0.1092		mg/L		109	75 - 125
Copper	<0.00500		0.200	0.2035		mg/L		102	75 - 125
Iron	<0.100		0.200	0.2429		mg/L		121	75 - 125
Lead	<0.000500		0.200	0.2075		mg/L		104	75 - 125
Magnesium	21.9		2.00	24.05	4	mg/L		107	75 - 125
Manganese	0.0122		0.100	0.1117		mg/L		99	75 - 125
Selenium	<0.00500		0.400	0.4186		mg/L		105	75 - 125
Zinc	<0.0200		0.200	0.1907		mg/L		95	75 - 125
Calcium	83.7		2.00	84.53	4	mg/L		41	75 - 125
Molybdenum	<0.00200		0.200	0.2141		mg/L		107	75 - 125

Lab Sample ID: 310-279297-1 MS
Matrix: Water
Analysis Batch: 419652

Client Sample ID: MW-06
Prep Type: Total/NA
Prep Batch: 419187

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	0.0538		0.200	0.2543		mg/L		100	75 - 125

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

Lab Sample ID: 310-279297-1 MS — **Client Sample ID: MW-06**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 419808 — **Prep Batch: 419187**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	0.368		0.200	0.5533		mg/L		93	75 - 125

Lab Sample ID: 310-279297-1 MSD — **Client Sample ID: MW-06**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 419536 — **Prep Batch: 419187**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	<0.00200		0.200	0.2019		mg/L		101	75 - 125	5	20
Barium	0.0239		0.100	0.1252		mg/L		101	75 - 125	5	20
Beryllium	<0.00100		0.100	0.1066		mg/L		107	75 - 125	4	20
Cobalt	<0.000500		0.100	0.1047		mg/L		105	75 - 125	4	20
Copper	<0.00500		0.200	0.1934		mg/L		97	75 - 125	5	20
Iron	<0.100		0.200	0.2308		mg/L		115	75 - 125	5	20
Lead	<0.000500		0.200	0.1987		mg/L		99	75 - 125	4	20
Magnesium	21.9		2.00	23.36	4	mg/L		72	75 - 125	3	20
Manganese	0.0122		0.100	0.1051		mg/L		93	75 - 125	6	20
Selenium	<0.00500		0.400	0.4022		mg/L		101	75 - 125	4	20
Zinc	<0.0200		0.200	0.1801		mg/L		90	75 - 125	6	20
Calcium	83.7		2.00	79.83	4	mg/L		-194	75 - 125	6	20
Molybdenum	<0.00200		0.200	0.1938		mg/L		97	75 - 125	10	20

Lab Sample ID: 310-279297-1 MSD — **Client Sample ID: MW-06**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 419652 — **Prep Batch: 419187**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lithium	0.0538		0.200	0.2526		mg/L		99	75 - 125	1	20

Lab Sample ID: 310-279297-1 MSD — **Client Sample ID: MW-06**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 419808 — **Prep Batch: 419187**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	0.368		0.200	0.5530		mg/L		93	75 - 125	0	20

Method: 9040C - pH

Lab Sample ID: 310-279297-2 DU — **Client Sample ID: MW-08**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 419157

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.16	HF	7.160		SU		0	20

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

Lab Sample ID: MB 310-419204/1
Matrix: Water
Analysis Batch: 419204

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	<5.0		5.0		mg/L			04/18/24 19:12	1

Lab Sample ID: LCS 310-419204/2
Matrix: Water
Analysis Batch: 419204

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

Lab Sample ID: MB 310-419590/1
Matrix: Water
Analysis Batch: 419590

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	<5.0		5.0		mg/L			04/23/24 13:03	1

Lab Sample ID: LCS 310-419590/2
Matrix: Water
Analysis Batch: 419590

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	104.0		mg/L		104	75 - 116

Lab Sample ID: 310-279297-5 DU
Matrix: Water
Analysis Batch: 419590

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	49.0		48.00		mg/L		2	35

Lab Sample ID: MB 310-419622/1
Matrix: Water
Analysis Batch: 419622

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	<5.0		5.0		mg/L			04/23/24 15:48	1

Lab Sample ID: LCS 310-419622/2
Matrix: Water
Analysis Batch: 419622

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	104.0		mg/L		104	75 - 116

Client: HR Green, Inc
Job ID: 310-279297-1
Project/Site: Cargill Landfill - 718160J09-0685

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-419335/1
Matrix: Water
Analysis Batch: 419335

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			04/19/24 15:37	1

Lab Sample ID: LCS 310-419335/2
Matrix: Water
Analysis Batch: 419335

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	958.0		mg/L		96	90 - 110

Lab Sample ID: MB 310-419340/1
Matrix: Water
Analysis Batch: 419340

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			04/19/24 15:44	1

Lab Sample ID: LCS 310-419340/2
Matrix: Water
Analysis Batch: 419340

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	926.0		mg/L		93	90 - 110

Lab Sample ID: 310-279297-2 DU
Matrix: Water
Analysis Batch: 419340

Client Sample ID: MW-08
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	624		624.0		mg/L		0	20

HPLC/IC

Analysis Batch: 419730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279297-1	MW-06	Total/NA	Water	9056A	
310-279297-2	MW-08	Total/NA	Water	9056A	
310-279297-3	MW-09	Total/NA	Water	9056A	
310-279297-3	MW-09	Total/NA	Water	9056A	
310-279297-4	MW-10	Total/NA	Water	9056A	
310-279297-4	MW-10	Total/NA	Water	9056A	
310-279297-5	MW-11	Total/NA	Water	9056A	
310-279297-5	MW-11	Total/NA	Water	9056A	
310-279297-6	MW-12R	Total/NA	Water	9056A	
310-279297-6	MW-12R	Total/NA	Water	9056A	
310-279297-7	MW-13R	Total/NA	Water	9056A	
310-279297-7	MW-13R	Total/NA	Water	9056A	
310-279297-8	MW-26	Total/NA	Water	9056A	
310-279297-8	MW-26	Total/NA	Water	9056A	
310-279297-9	Fly Ash North 002	Total/NA	Water	9056A	
310-279297-9	Fly Ash North 002	Total/NA	Water	9056A	
310-279297-10	Gypsom West 005	Total/NA	Water	9056A	
310-279297-10	Gypsom West 005	Total/NA	Water	9056A	
MB 310-419730/3	Method Blank	Total/NA	Water	9056A	
LCS 310-419730/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 419187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279297-1	MW-06	Total/NA	Water	3005A	
310-279297-2	MW-08	Total/NA	Water	3005A	
310-279297-3	MW-09	Total/NA	Water	3005A	
310-279297-4	MW-10	Total/NA	Water	3005A	
310-279297-5	MW-11	Total/NA	Water	3005A	
310-279297-6	MW-12R	Total/NA	Water	3005A	
310-279297-7	MW-13R	Total/NA	Water	3005A	
310-279297-8	MW-26	Total/NA	Water	3005A	
310-279297-9	Fly Ash North 002	Total/NA	Water	3005A	
310-279297-10	Gypsom West 005	Total/NA	Water	3005A	
MB 310-419187/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-419187/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-279297-1 MS	MW-06	Total/NA	Water	3005A	
310-279297-1 MSD	MW-06	Total/NA	Water	3005A	

Analysis Batch: 419536

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279297-1	MW-06	Total/NA	Water	6020B	419187
310-279297-2	MW-08	Total/NA	Water	6020B	419187
310-279297-3	MW-09	Total/NA	Water	6020B	419187
310-279297-4	MW-10	Total/NA	Water	6020B	419187
310-279297-5	MW-11	Total/NA	Water	6020B	419187
310-279297-6	MW-12R	Total/NA	Water	6020B	419187
310-279297-7	MW-13R	Total/NA	Water	6020B	419187
310-279297-8	MW-26	Total/NA	Water	6020B	419187
310-279297-9	Fly Ash North 002	Total/NA	Water	6020B	419187

Metals (Continued)

Analysis Batch: 419536 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279297-10	Gypsom West 005	Total/NA	Water	6020B	419187
MB 310-419187/1-A	Method Blank	Total/NA	Water	6020B	419187
LCS 310-419187/2-A	Lab Control Sample	Total/NA	Water	6020B	419187
310-279297-1 MS	MW-06	Total/NA	Water	6020B	419187
310-279297-1 MSD	MW-06	Total/NA	Water	6020B	419187

Analysis Batch: 419652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279297-1	MW-06	Total/NA	Water	6020B	419187
310-279297-2	MW-08	Total/NA	Water	6020B	419187
310-279297-3	MW-09	Total/NA	Water	6020B	419187
310-279297-4	MW-10	Total/NA	Water	6020B	419187
310-279297-5	MW-11	Total/NA	Water	6020B	419187
310-279297-6	MW-12R	Total/NA	Water	6020B	419187
310-279297-7	MW-13R	Total/NA	Water	6020B	419187
310-279297-8	MW-26	Total/NA	Water	6020B	419187
310-279297-9	Fly Ash North 002	Total/NA	Water	6020B	419187
310-279297-10	Gypsom West 005	Total/NA	Water	6020B	419187
MB 310-419187/1-A	Method Blank	Total/NA	Water	6020B	419187
LCS 310-419187/2-A	Lab Control Sample	Total/NA	Water	6020B	419187
310-279297-1 MS	MW-06	Total/NA	Water	6020B	419187
310-279297-1 MSD	MW-06	Total/NA	Water	6020B	419187

Analysis Batch: 419808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279297-1	MW-06	Total/NA	Water	6020B	419187
310-279297-2	MW-08	Total/NA	Water	6020B	419187
310-279297-3	MW-09	Total/NA	Water	6020B	419187
310-279297-4	MW-10	Total/NA	Water	6020B	419187
310-279297-1 MS	MW-06	Total/NA	Water	6020B	419187
310-279297-1 MSD	MW-06	Total/NA	Water	6020B	419187

General Chemistry

Analysis Batch: 419157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279297-1	MW-06	Total/NA	Water	9040C	
310-279297-2	MW-08	Total/NA	Water	9040C	
310-279297-3	MW-09	Total/NA	Water	9040C	
310-279297-4	MW-10	Total/NA	Water	9040C	
310-279297-5	MW-11	Total/NA	Water	9040C	
310-279297-6	MW-12R	Total/NA	Water	9040C	
310-279297-7	MW-13R	Total/NA	Water	9040C	
310-279297-8	MW-26	Total/NA	Water	9040C	
310-279297-9	Fly Ash North 002	Total/NA	Water	9040C	
310-279297-10	Gypsom West 005	Total/NA	Water	9040C	
LCS 310-419157/1	Lab Control Sample	Total/NA	Water	9040C	
LCS 310-419157/31	Lab Control Sample	Total/NA	Water	9040C	
310-279297-2 DU	MW-08	Total/NA	Water	9040C	

General Chemistry

Analysis Batch: 419204

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279297-1	MW-06	Total/NA	Water	I-3765-85	
310-279297-2	MW-08	Total/NA	Water	I-3765-85	
310-279297-3	MW-09	Total/NA	Water	I-3765-85	
310-279297-4	MW-10	Total/NA	Water	I-3765-85	
310-279297-6	MW-12R	Total/NA	Water	I-3765-85	
310-279297-7	MW-13R	Total/NA	Water	I-3765-85	
310-279297-8	MW-26	Total/NA	Water	I-3765-85	
310-279297-9	Fly Ash North 002	Total/NA	Water	I-3765-85	
MB 310-419204/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-419204/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 419335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279297-4	MW-10	Total/NA	Water	SM 2540C	
310-279297-5	MW-11	Total/NA	Water	SM 2540C	
310-279297-6	MW-12R	Total/NA	Water	SM 2540C	
MB 310-419335/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-419335/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 419340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279297-1	MW-06	Total/NA	Water	SM 2540C	
310-279297-2	MW-08	Total/NA	Water	SM 2540C	
310-279297-3	MW-09	Total/NA	Water	SM 2540C	
310-279297-7	MW-13R	Total/NA	Water	SM 2540C	
310-279297-8	MW-26	Total/NA	Water	SM 2540C	
310-279297-9	Fly Ash North 002	Total/NA	Water	SM 2540C	
310-279297-10	Gypsom West 005	Total/NA	Water	SM 2540C	
MB 310-419340/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-419340/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-279297-2 DU	MW-08	Total/NA	Water	SM 2540C	

Analysis Batch: 419590

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279297-5	MW-11	Total/NA	Water	I-3765-85	
MB 310-419590/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-419590/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-279297-5 DU	MW-11	Total/NA	Water	I-3765-85	

Analysis Batch: 419622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-279297-10	Gypsom West 005	Total/NA	Water	I-3765-85	
MB 310-419622/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-419622/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Client Sample ID: MW-06
Lab Sample ID: 310-279297-1

Date Collected: 04/18/24 08:45
Matrix: Water
Date Received: 04/18/24 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	419730	QTZ5	EET CF	04/23/24 21:21
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		1	419652	DHM5	EET CF	04/23/24 20:25
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		1	419808	NFT2	EET CF	04/24/24 14:39
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		1	419536	NFT2	EET CF	04/22/24 20:32
Total/NA	Analysis	9040C		1	419157	W9YR	EET CF	04/18/24 15:26
Total/NA	Analysis	I-3765-85		1	419204	A4XP	EET CF	04/18/24 19:12
Total/NA	Analysis	SM 2540C		1	419340	D7CP	EET CF	04/19/24 15:44

Client Sample ID: MW-08
Lab Sample ID: 310-279297-2

Date Collected: 04/18/24 09:10
Matrix: Water
Date Received: 04/18/24 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	419730	QTZ5	EET CF	04/23/24 21:33
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		1	419652	DHM5	EET CF	04/23/24 20:42
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		1	419808	NFT2	EET CF	04/24/24 14:56
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		1	419536	NFT2	EET CF	04/22/24 20:51
Total/NA	Analysis	9040C		1	419157	W9YR	EET CF	04/18/24 15:20
Total/NA	Analysis	I-3765-85		1	419204	A4XP	EET CF	04/18/24 19:12
Total/NA	Analysis	SM 2540C		1	419340	D7CP	EET CF	04/19/24 15:44

Client Sample ID: MW-09
Lab Sample ID: 310-279297-3

Date Collected: 04/18/24 09:40
Matrix: Water
Date Received: 04/18/24 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	419730	QTZ5	EET CF	04/23/24 21:45
Total/NA	Analysis	9056A		50	419730	QTZ5	EET CF	04/24/24 09:12
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		1	419652	DHM5	EET CF	04/23/24 20:45
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		1	419808	NFT2	EET CF	04/24/24 14:59
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		1	419536	NFT2	EET CF	04/22/24 20:53
Total/NA	Analysis	9040C		1	419157	W9YR	EET CF	04/18/24 15:24
Total/NA	Analysis	I-3765-85		1	419204	A4XP	EET CF	04/18/24 19:12
Total/NA	Analysis	SM 2540C		1	419340	D7CP	EET CF	04/19/24 15:44

Lab Chronicle

Client: HR Green, Inc
Job ID: 310-279297-1
Project/Site: Cargill Landfill - 718160J09-0685

Client Sample ID: MW-10
Lab Sample ID: 310-279297-4
Date Collected: 04/17/24 16:40
Matrix: Water
Date Received: 04/18/24 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	419730	QTZ5	EET CF	04/23/24 21:58
Total/NA	Analysis	9056A		50	419730	QTZ5	EET CF	04/24/24 09:24
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		4	419652	DHM5	EET CF	04/23/24 20:49
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		4	419808	NFT2	EET CF	04/24/24 15:17
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		1	419536	NFT2	EET CF	04/22/24 20:56
Total/NA	Analysis	9040C		1	419157	W9YR	EET CF	04/18/24 15:25
Total/NA	Analysis	I-3765-85		1	419204	A4XP	EET CF	04/18/24 19:12
Total/NA	Analysis	SM 2540C		1	419335	D7CP	EET CF	04/19/24 15:37

Client Sample ID: MW-11
Lab Sample ID: 310-279297-5
Date Collected: 04/17/24 15:45
Matrix: Water
Date Received: 04/18/24 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	419730	QTZ5	EET CF	04/23/24 22:34
Total/NA	Analysis	9056A		50	419730	QTZ5	EET CF	04/24/24 09:36
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		4	419652	DHM5	EET CF	04/23/24 21:06
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		1	419536	NFT2	EET CF	04/22/24 20:58
Total/NA	Analysis	9040C		1	419157	W9YR	EET CF	04/18/24 15:23
Total/NA	Analysis	I-3765-85		1	419590	DGU1	EET CF	04/23/24 13:03
Total/NA	Analysis	SM 2540C		1	419335	D7CP	EET CF	04/19/24 15:37

Client Sample ID: MW-12R
Lab Sample ID: 310-279297-6
Date Collected: 04/17/24 17:35
Matrix: Water
Date Received: 04/18/24 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	419730	QTZ5	EET CF	04/23/24 22:46
Total/NA	Analysis	9056A		50	419730	QTZ5	EET CF	04/24/24 09:48
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		4	419652	DHM5	EET CF	04/23/24 21:09
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		1	419536	NFT2	EET CF	04/22/24 21:00
Total/NA	Analysis	9040C		1	419157	W9YR	EET CF	04/18/24 15:22
Total/NA	Analysis	I-3765-85		1	419204	A4XP	EET CF	04/18/24 19:12
Total/NA	Analysis	SM 2540C		1	419335	D7CP	EET CF	04/19/24 15:37

Client Sample ID: MW-13R
Lab Sample ID: 310-279297-7

Date Collected: 04/18/24 09:55
Matrix: Water
Date Received: 04/18/24 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	419730	QTZ5	EET CF	04/23/24 22:58
Total/NA	Analysis	9056A		50	419730	QTZ5	EET CF	04/24/24 10:00
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		4	419652	DHM5	EET CF	04/23/24 21:13
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		1	419536	NFT2	EET CF	04/22/24 21:02
Total/NA	Analysis	9040C		1	419157	W9YR	EET CF	04/18/24 15:27
Total/NA	Analysis	I-3765-85		1	419204	A4XP	EET CF	04/18/24 19:12
Total/NA	Analysis	SM 2540C		1	419340	D7CP	EET CF	04/19/24 15:44

Client Sample ID: MW-26
Lab Sample ID: 310-279297-8

Date Collected: 04/17/24 14:35
Matrix: Water
Date Received: 04/18/24 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	419730	QTZ5	EET CF	04/23/24 23:10
Total/NA	Analysis	9056A		50	419730	QTZ5	EET CF	04/24/24 10:12
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		7	419652	DHM5	EET CF	04/23/24 21:16
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		1	419536	NFT2	EET CF	04/22/24 21:13
Total/NA	Analysis	9040C		1	419157	W9YR	EET CF	04/18/24 15:28
Total/NA	Analysis	I-3765-85		1	419204	A4XP	EET CF	04/18/24 19:12
Total/NA	Analysis	SM 2540C		1	419340	D7CP	EET CF	04/19/24 15:44

Client Sample ID: Fly Ash North 002
Lab Sample ID: 310-279297-9

Date Collected: 04/17/24 18:00
Matrix: Water
Date Received: 04/18/24 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	419730	QTZ5	EET CF	04/23/24 23:22
Total/NA	Analysis	9056A		50	419730	QTZ5	EET CF	04/24/24 10:24
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		4	419652	DHM5	EET CF	04/23/24 21:20
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		1	419536	NFT2	EET CF	04/22/24 21:15
Total/NA	Analysis	9040C		1	419157	W9YR	EET CF	04/18/24 15:29
Total/NA	Analysis	I-3765-85		1	419204	A4XP	EET CF	04/18/24 19:12
Total/NA	Analysis	SM 2540C		1	419340	D7CP	EET CF	04/19/24 15:44

Lab Chronicle

Client: HR Green, Inc
Job ID: 310-279297-1
Project/Site: Cargill Landfill - 718160J09-0685

Client Sample ID: Gypsom West 005
Lab Sample ID: 310-279297-10

Date Collected: 04/18/24 09:25
Matrix: Water
Date Received: 04/18/24 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	419730	QTZ5	EET CF	04/23/24 23:24
Total/NA	Analysis	9056A		50	419730	QTZ5	EET CF	04/24/24 10:36
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		4	419652	DHM5	EET CF	04/23/24 21:23
Total/NA	Prep	3005A			419187	KM3E	EET CF	04/19/24 09:00
Total/NA	Analysis	6020B		1	419536	NFT2	EET CF	04/22/24 21:18
Total/NA	Analysis	9040C		1	419157	W9YR	EET CF	04/18/24 15:30
Total/NA	Analysis	I-3765-85		1	419622	A4XP	EET CF	04/23/24 15:48
Total/NA	Analysis	SM 2540C		1	419340	D7CP	EET CF	04/19/24 15:44

Laboratory References:

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

Accreditation/Certification Summary

Client: HR Green, Inc
Job ID: 310-279297-1
Project/Site: Cargill Landfill - 718160J09-0685

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Lithium

Method Summary

Client: HR Green, Inc
Job ID: 310-279297-1
Project/Site: Cargill Landfill - 718160J09-0685

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
9040C	pH	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
3005A	Preparation, Total Metals	SW846	EET CF

Protocol References:

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

eurofins | Environment Testing America

310-279297 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: HR Green

City/State: CITY Cedar Rapids | STATE IA | Project:

Receipt Information

Date/Time Received: DATE 4/18/24 | TIME 1230 | Received By: JJ

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: X | 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): 0.4 | Corrected Temp (°C): 0.4

• **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 | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: HR Green

City/State: CITY Cedar Rapids STATE IA Project:

Receipt Information

Date/Time Received: DATE 4/18/24 TIME 1330 Received By: JJ

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: X Correction Factor (°C): TD

• **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

Chain of Custody Record

603758 eurofins | Environment Testing TestAmerica

Address _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TAL-8210

Client Contact	Project Manager: Rose Amundson	Site Contact: B. Johannsen	Date: 4/18/24	COC No
Company Name HR Green	Tel/Email: 319-321-9573	Lab Contact: Conner	Carrier: RTS Drop	1 of 1 COCs
Address 8710 Emhart Lane SE	Analysis Turnaround Time			Sampler: Tyler Merritt / Randy Gavin
City/State/Zip Cedar Rapids, IA 52404	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone 319-841-4006	TAT if different from Below _____			Walk-in Client.
Fax. 319-841-4012	☐ 2 weeks			Lab Sampling
Project Name 718160J	☐ 1 week			
Site Eddyville, IA	☐ 2 days			Job / SDG No
P O # —	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)															Sample Specific Notes
MW-06	4/18/24	8:45	G	H2O	3	N	N															
MW-08	4/18	9:10			3																	
MW-09	4/18	9:40			3																	
MW-10	4/17	16:40			3																	
MW-11	4/17	15:45			3																	
MW-12R	4/17	17:35			3																	
MW-13R	4/18	9:55			3																	
MW-26	4/17	14:35			3																	
Fly Ash North 002	4/17	18:00			3																	
Gypsum West 005	4/18/24	9:25			3																	

SEE ATTACHED PARAMETER Sheet

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd _____ Corr'd _____ | Therm ID No _____

Relinquished by	Company	Date/Time	Received by:	Company	Date/Time
	O.A. TECH	4/18/24 13:30			4/18/24 1730
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time

4/25/2024

Consultant HR Green Company Sampling Date 4/17 + 4/18/24 Project # 718160J09-0685

Project Manager Rose Amundson Sampled By Tyler Merritt / Randy Gavin

WELL NO.	MW- 06	MW-08	MW-09	MW-10	MW-11	MW-12R	MW-13R	MW-26	FlyAsh North #002	Gypsum West #005	Tunnel Mine #004	MH-LF (leachate)
Arsenic, total	X	X	X	X	X	X	X	X	X	X	X	X
barium, total	X	X	X	X	X	X	X	X	X	X	X	X
Beryllium, total	X	X	X	X	X	X	X	X	X	X	X	X
cobalt, total	X	X	X	X	X	X	X	X	X	X	X	X
Copper, total	X	X	X	X	X	X	X	X	X	X	X	X
Iron, total	X	X	X	X	X	X	X	X	X	X	X	X
lead, total	X	X	X	X	X	X	X	X	X	X	X	X
magnesium, total	X	X	X	X	X	X	X	X	X	X	X	X
manganese, total	X	X	X	X	X	X	X	X	X	X	X	X
Selenium, total.	X	X	X	X	X	X	X	X	X	X	X	X
zinc, total	X	X	X	X	X	X	X	X	X	X	X	X
sulfate	X	X	X	X	X	X	X	X	X	X	X	X
chloride	X	X	X	X	X	X	X	X	X	X	X	X
boron	X	X	X	X	X	X	X	X	X	X	X	X
calcium	X	X	X	X	X	X	X	X	X	X	X	X
fluoride	X	X	X	X	X	X	X	X	X	X	X	X
lithium	X	X	X	X	X	X	X	X	X	X	X	X
molybedum	X	X	X	X	X	X	X	X	X	X	X	X
TSS	X	X	X	X	X	X	X	X	X	X	X	X
TDS	X	X	X	X	X	X	X	X	X	X	X	X
pH	X	X	X	X	X	X	X	X	X	X	X	X

No sample Submitted

Sampler [signature] Shipping Date 4/18/24

Page 1 of 1

Login Sample Receipt Checklist

Client: HR Green, Inc

Job Number: 310-279297-1

Login Number: 279297

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Costello, Mackenzie K

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.	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	

Appendix B-2

Data Validation

Completed by: Kevin Jensen
Sampling Date: 4/17-18/2024
Lab Report Date: 4/25/2024
Site Name: Cargill-Eddyville CCR Landfill
Lab Report Number: 310-279297-1

	OK	NO	N/A	NOTES
Sample Collection and Sample Handling				
Chain of Custody	X			
Temperature	X			
Preservation	X			
Condition	X			
Case Narrative	X			
Reporting Limits		X		Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: MW-06, MW-08, MW-09, MW-10, MW-11, MW-12R, MW-13R, MW-26, Fly Ash North 002, and Gypsom West 005. Elevated reporting limits (RLs) were provided.
Holding Times		X		pH was measured outside the holding time of 15 minutes.
Analytical Sensitivity and Blanks				
Method Blank Detections	X			
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	No duplicate samples were collected during the 2024 sampling event.

Appendix C

Summary of Groundwater Chemistry

Summary of Groundwater Chemistry
Cargill CCR Landfill
Permit No. 62-SDP-04-89P

Constituent (CAS #)	Sample Date	Units	MW-6 Bkgrnd	MW-8 DwnGrad	MW-9 DwnGrad	MW-10 DwnGrad	MW-11 DwnGrad	MW-12R DwnGrad	MW-13R DwnGrad	MW-26 Bkgrnd	#002 U-Drain	#004 Mine Drain	#005 U-Drain	Leachate -
Arsenic (Total) (7440-38-2)	10/4-5/2016	mg/l	<0.002	<0.002	<0.002	**0.0034**	<0.002		<0.002					
MCL = 0.01	8/10-11/2017	mg/l	<0.002	<0.002	<0.002	**0.00253**	<0.002	<0.002	**0.00246**					
	9/26-27/2018	mg/l	<0.002	<0.002	<0.002	**0.00301**	<0.002	<0.002	**0.00422**					
	7/8-9/2019	mg/l	<0.002	<0.002	<0.002	<0.008	<0.008	<0.008	<0.008					
	9/1-2/2020	mg/l	<0.002	<0.002	<0.002	**0.0031**	<0.008	<0.008	<0.008					
	5/25-26/2021	mg/l	<0.002	<0.002	<0.002	**0.00279**	**0.00284**	<0.002	**0.00268**					
	9/8-9/2022	mg/l	<0.002	<0.002	<0.002	**0.00323**	**0.00350**	<0.002	**0.00825**					
	9/5-6/2023	mg/l	<0.002	<0.002	<0.002	**0.00306**	**0.00267**	<0.002	<0.002	<0.002	<0.002		**0.00434**	**0.0068**
	4/17-18/2024	mg/l	<0.002	<0.002	<0.002	**0.00322**	<0.002	<0.002	<0.002	<0.002	<0.002		**0.00503**	
Barium (Total) (7440-39-3)	10/4-5/2016	mg/l	**0.0317**	**0.0458**	**0.0237**	**0.0137**	**0.0325**		**0.00446**					
MCL = 2.0	8/10-11/2017	mg/l	**0.0334**	**0.0425**	**0.0224**	**0.0148**	**0.0299**	**0.0313**	**0.0665**					
	9/26-27/2018	mg/l	**0.024**	**0.0438**	**0.0217**	**0.0158**	**0.0311**	**0.016**	**0.0322**					
	7/8-9/2019	mg/l	**0.0261**	**0.0438**	**0.0236**	**0.0160**	**0.0489**	**0.0182**	**0.0338**					
	9/1-2/2020	mg/l	**0.0201**	**0.0323**	**0.2020**	**0.0146**	**0.0315**	**0.0169**	**0.0255**					
	5/25-26/2021	mg/l	**0.0210**	**0.0358**	**0.0211**	**0.0141**	**0.0314**	**0.0157**	**0.0265**					
	9/8-9/2022	mg/l	**0.0213**	**0.0291**	**0.0213**	**0.016**	**0.0388**	**0.0144**	**0.0217**					
	9/5-6/2023	mg/l	**0.0207**	**0.0281**	**0.0313**	**0.0150**	**0.0329**	**0.0144**	**0.0188**	**0.00972**	**0.015**		**0.00896**	**0.0308**
	4/17-18/2024	mg/l	**0.0239**	**0.0272**	**0.0311**	**0.0148**	**0.0306**	**0.0153**	**0.0202**	**0.01070**	**0.017**		**0.01080**	
Beryllium (Total) (7440-41-7)	10/4-5/2016	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001					
MCL = 0.004	8/10-11/2017	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001					
	9/26-27/2018	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001					
	7/8-9/2019	mg/l	<0.001	<0.001	<0.001	<0.004	<0.004	<0.004	<0.004					
	9/1-2/2020	mg/l	<0.001	<0.001	<0.001	<0.004	<0.004	<0.004	<0.004					
	5/25-26/2021	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001					
	9/8-9/2022	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001					
	9/5-6/2023	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.00174**	<0.001		<0.001	<0.001
	4/17-18/2024	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.00132**	<0.001		<0.001	
Boron (7440-42-8)	10/4-5/2016	mg/l												
HAL = 6	8/10-11/2017	mg/l												
	9/26-27/2018	mg/l												
	7/8-9/2019	mg/l												
	9/1-2/2020	mg/l												
	5/25-26/2021	mg/l												
	9/8-9/2022	mg/l												
	9/5-6/2023	mg/l	**0.364**	**0.356**	**0.992**	**0.634**	**0.407**	**1.42**	**0.56**	**0.154**	**0.894**		**0.785**	**5.06**
	4/17-18/2024	mg/l	**0.368**	**0.315**	**0.966**	**0.602**	**0.459**	**1.4**	**0.735**	<0.700	**1.060**		**0.968**	
Calcium (7440-70-2)	10/4-5/2016	mg/l												
	8/10-11/2017	mg/l												
	9/26-27/2018	mg/l												
	7/8-9/2019	mg/l												
	9/1-2/2020	mg/l												
	5/25-26/2021	mg/l												
	9/8-9/2022	mg/l												
	9/5-6/2023	mg/l	**112**	**137**	**348**	**651**	**395**	**602**	**505**	**417**	**491**		**518**	**391**
	4/17-18/2024	mg/l	**83.7**	**129**	**370**	**593**	**401**	**547**	**558**	**437**	**585**		**613**	
Chloride (16887-00-6)	10/4-5/2016	mg/l	<5	<5	<5	<5	**8.08**		<5					
	8/10-11/2017	mg/l	<5	<5	<5	<5	**5.26**	**8.06**	**17.5**					
	9/26-27/2018	mg/l	<5	<5	<5	<5	**5.12**	**7**	**8.41**					
	7/8-9/2019	mg/l	<5	<5	<5	<5	**6.03**	**7.64**	**8.75**					
	9/1-2/2020	mg/l	<5	<5	<5	**5.18**	**5.15**	**8.22**	**8.33**					
	5/25-26/2021	mg/l	<5	<5	<5	<5	<5	**7.01**	**10.5**					
	9/8-9/2022	mg/l	<5	<5	<5	<5	**10.8**	**6.33**	**11.3**					
	9/5-6/2023	mg/l	<5	<5	<5	<5	**6.47**	**6.72**	**14.3**	<5	**7.42**		<5	**59.7**
	4/17-18/2024	mg/l	<5	<5	<5	**6.76**	**6.56**	**7.57**	**28.0**	<5	**8.52**		**5.7**	

Constituent (CAS #)	Sample Date	Units	MW-6 Bkgrnd	MW-8 DwnGrad	MW-9 DwnGrad	MW-10 DwnGrad	MW-11 DwnGrad	MW-12R DwnGrad	MW-13R DwnGrad	MW-26 Bkgrnd	#002 U-Drain	#004 Mine Drain	#005 U-Drain	Leachate -
Cobalt (Total) (7440-48-4)	10/4-5/2016	mg/l	<0.0005	<0.0005	<0.0005	**0.0188**	**0.0277**		<0.0005					
SWS = 0.0021	8/10-11/2017	mg/l	<0.0005	<0.0005	<0.0005	**0.0181**	**0.0343**	**0.00528**	**0.044**					
	9/26-27/2018	mg/l	<0.0005	<0.0005	<0.0005	**0.0185**	**0.0324**	**0.0043**	**0.0571**					
	7/8-9/2019	mg/l	<0.0005	**0.00189**	<0.0005	**0.0187**	**0.0478**	**0.00544**	**0.0703**					
	9/1-2/2020	mg/l	<0.0005	<0.0005	<0.0005	**0.0181**	**0.0354**	**0.00696**	**0.0597**					
	5/25-26/2021	mg/l	<0.0005	<0.0005	<0.0005	**0.0192**	**0.0351**	**0.00790**	**0.0514**					
	9/8-9/2022	mg/l	<0.0005	<0.0005	<0.0005	**0.0176**	**0.0409**	**0.0042**	**0.0528**					
	9/5-6/2023	mg/l	<0.0005	<0.0005	**0.00138**	**0.0188**	**0.0471**	**0.00416**	**0.0579**	**0.082**	**0.0122**		**0.0608**	**0.00143**
	4/17-18/2024	mg/l	<0.0005	<0.0005	**0.00090**	**0.0189**	**0.0441**	**0.0034**	**0.0322**	**0.057**	**0.0114**		**0.0638**	
Copper (Total) (7440-50-8)	10/4-5/2016	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005					
MCL = 1.3	8/10-11/2017	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005					
	9/26-27/2018	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0194**					
	7/8-9/2019	mg/l	<0.005	<0.005	<0.005	<0.02	<0.02	<0.02	<0.02					
	9/1-2/2020	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005					
	5/25-26/2021	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005					
	9/8-9/2022	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005					
	9/5-6/2023	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005
	4/17-18/2024	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	
Fluoride (16984-48-8)	10/4-5/2016	mg/l												
MCL = 4	8/10-11/2017	mg/l												
	9/26-27/2018	mg/l												
	7/8-9/2019	mg/l												
	9/1-2/2020	mg/l												
	5/25-26/2021	mg/l												
	9/8-9/2022	mg/l												
	9/5-6/2023	mg/l	<1	<1	<1	<1	<1	<1	<1	**1.1**	<1		**1.3**	<1
	4/17-18/2024	mg/l	<1	<1	<1	<1	<1	<1	<1	<1	<1		**1.23**	
Iron (Total) (7439-89-6)	10/4-5/2016	mg/l	<0.1	**0.137**	<0.1	**4.39**	**4.33**		**0.569**	**0.685**	**4.76**	<0.1	**4.17**	
	8/10-11/2017	mg/l	**0.148**	**0.238**	**0.107**	**4.35**	**9.25**	**3.12**	**6.85**	<0.1	**71.7**		**4.95**	
	9/26-27/2018	mg/l	**0.909**	**0.308**	<0.1	**4.7**	**10.7**	**3.76**	**12**	**1.2**	**7.12**		**65.3**	
	7/8-9/2019	mg/l	**0.951**	<0.1	<0.1	**4.59**	**35.9**	**4.68**	**10.4**	**2.88**	**11.1**	**286**	**61.5**	
	9/1-2/2020	mg/l	**0.706**	<0.1	<0.1	**4.65**	**14.3**	**4.88**	**9.25**	<1.00	**15.3**	**262**	**45.6**	
	5/25-26/2021	mg/l	**0.877**	<0.100	<0.100	**4.65**	**17**	**4.48**	**7.34**	**0.123**	**5.44**	**313**	**43.1**	
	9/8-9/2022	mg/l	**0.847**	<0.100	<0.100	**6.02**	**36.7**	**3.79**	**8.8**	**0.38**	**16.3**		**52.4**	
	9/5-6/2023	mg/l	**0.403**	**1.27**	**0.175**	**5.97**	**22**	**3.73**	**7.06**	**0.216**	**5.58**		**70.3**	**0.146**
	4/17-18/2024	mg/l	<0.100	<0.100	**0.296**	**5.83**	**16.9**	**3.6**	**1.05**	**0.111**	**5.84**		**77.1**	
Lead (Total) (7439-92-1)	10/4-5/2016	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005					
MCL = 0.015	8/10-11/2017	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.000591**	**0.00395**					
	9/26-27/2018	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.00989**					
	7/8-9/2019	mg/l	<0.0005	<0.0005	<0.0005	<0.002	<0.002	<0.002	**0.00241**					
	9/1-2/2020	mg/l	<0.0005	**0.00111**	<0.0005	<0.0005	<0.0005	**0.000708**	**0.0028**					
	5/25-26/2021	mg/l	<0.0005	**<0.0005**	<0.0005	<0.0005	<0.0005	**<0.0005**	**<0.0005**					
	9/8-9/2022	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0096**					
	9/5-6/2023	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005
	4/17-18/2024	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	
Lithium (7439-93-2)	10/4-5/2016	mg/l												
SWS = 0.014	8/10-11/2017	mg/l												
	9/26-27/2018	mg/l												
	7/8-9/2019	mg/l												
	9/1-2/2020	mg/l												
	5/25-26/2021	mg/l												
	9/8-9/2022	mg/l												
	9/5-6/2023	mg/l	**0.0577**	**0.0954**	**0.12**	**0.15**	**0.0518**	**0.322**	**0.175**	**0.0363**	**0.234**		**0.186**	<0.1
	4/17-18/2024	mg/l	**0.0538**	**0.0908**	**0.119**	**0.152**	**0.0529**	**0.3**	**0.266**	<0.0700	**0.264**		**0.218**	

Constituent (CAS #)	Sample Date	Units	MW-6 Bkgrnd	MW-8 DwnGrad	MW-9 DwnGrad	MW-10 DwnGrad	MW-11 DwnGrad	MW-12R DwnGrad	MW-13R DwnGrad	MW-26 Bkgrnd	#002 U-Drain	#004 Mine Drain	#005 U-Drain	Leachate -
Magnesium (Total) (7439-95-4)	10/4-5/2016	mg/l	**13.5**	**37.3**	**70.6**	**199**	**124**		**142**	**214**	**265**	**424**	**194**	
	8/10-11/2017	mg/l	**14.8**	**44**	**69.5**	**191**	**107**	**196**	**231**	**235**	**190**		**282**	
	9/26-27/2018	mg/l	**26.2**	**40.4**	**71.5**	**206**	**109**	**196**	**168**	**251**	**313**		**195**	
	7/8-9/2019	mg/l	**28.7**	**38.5**	**75.6**	**184**	**127**	**208**	**218**	**333**	**340**	**434**	**208**	
	9/1-2/2020	mg/l	**27**	**39**	**65**	**193**	**116**	**258**	**196**	**280**	**328**	**412**	**221**	
	5/25-26/2021	mg/l	**28.5**	**46.7**	**70.9**	**179**	**107**	**293**	**228**	**318**	**329**	**359**	**182**	
	9/8-9/2022	mg/l	**25.3**	**41.5**	**72.5**	**205**	**158**	**214**	**243**	**360**	**396**		**238**	
	9/5-6/2023	mg/l	**25**	**41**	**65**	**195**	**112**	**205**	**232**	**270**	**288**		**212**	**207**
	4/17-18/2024	mg/l	**21.9**	**43.5**	**71.3**	**186**	**109**	**194**	**294**	**307**	**344**		**249**	
Manganese (Total) (7439-96-5)	10/4-5/2016	mg/l	**0.0474**	**0.014**	<0.01	**7.12**	**5.87**		**1.74**	**9.2**	**2.55**	**0.135**	**0.411**	
HAL = 0.3	8/10-11/2017	mg/l	**0.035**	**0.033**	<0.01	**6.01**	**5.12**	**0.923**	**13.9**	**20.2**	**13.1**		**2.47**	
	9/26-27/2018	mg/l	**0.157**	**0.062**	<0.01	**7.07**	**5.83**	**0.84**	**17.9**	**45.2**	**2.62**		**11.5**	
	7/8-9/2019	mg/l	**0.162**	**0.751**	<0.01	**7.03**	**7.98**	**0.987**	**19.9**	**30.5**	**5.58**	**74.6**	**10.9**	
	9/1-2/2020	mg/l	**0.139**	**0.106**	<0.01	**6.89**	**6.14**	**1.32**	**17.3**	**35.4**	**7.38**	**53.2**	**14.3**	
	5/25-26/2021	mg/l	**0.129**	**0.028**	<0.0100	**7.26**	**5.64**	**1.55**	**19**	**6.32**	**6.32**	**54.5**	**8.78**	
	9/8-9/2022	mg/l	**0.14**	**0.011**	<0.0100	**7.85**	**7.37**	**0.808**	**17.9**	**43.5**	**4.14**		**9.42**	
	9/5-6/2023	mg/l	**0.0924**	<0.01	**0.341**	**8.07**	**8.01**	**0.85**	**16.8**	**39.1**	**3.15**		**12.5**	**1.13**
	4/17-18/2024	mg/l	**0.0122**	<0.01	**0.233**	**6.86**	**7.17**	**0.771**	**8.5**	**38.8**	**2.92**		**15.0**	
Molybdenum (7439-98-7)	10/4-5/2016	mg/l												
HAL = 0.04	8/10-11/2017	mg/l												
	9/26-27/2018	mg/l												
	7/8-9/2019	mg/l												
	9/1-2/2020	mg/l												
	5/25-26/2021	mg/l												
	9/8-9/2022	mg/l												
	9/5-6/2023	mg/l	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	**0.81**
	4/17-18/2024	mg/l	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	
pH	10/4-5/2016	SU	**7.71**	**6.86**	**7.10**	**6.45**	**6.14**		**6.89**	**5.91**	**6.68**	**6.40**	**6.44**	
	8/10-11/2017	SU	**7.32**	**6.83**	**6.73**	**6.55**	**6.20**	**6.41**	**6.42**	**5.06**	**6.44**		**6.45**	
	9/26-27/2018	SU	**6.39**	**6.94**	**6.54**	**6.18**	**5.99**	**6.12**	**6.52**	**5.54**	**6.59**		**6.20**	
	7/8-9/2019	SU	**7.12**	**7.22**	**7.08**	**6.49**	**6.10**	**6.38**	**6.26**	**4.54**	**6.84**	**6.26**	**6.39**	
	9/1-2/2020	SU	**7.11**	**7.01**	**6.91**	**6.35**	**6.09**	**6.21**	**6.15**	**4.41**	**7.15**	**6.44**	**6.56**	
	5/25-26/2021	SU	**7.40**	**7.70**	**7.21**	**6.46**	**6.13**	**6.31**	**6.25**	**5.70**	**6.80**	**6.60**	6.80	
	9/8-9/2022	SU	**7.75**	**7.61**	**7.41**	**6.99**	**6.41**	**6.83**	**6.74**	**4.54**	**6.91**		**7.00**	
	9/5-6/2023	SU	**7.58**	**7.16**	**7.11**	**6.62**	**6.58**	**6.54**	**6.54**	**5.28**	**6.85**		**6.79**	**7.75**
	4/17-18/2024	SU	**7.52**	**7.16**	**7.60**	**6.64**	**6.41**	**6.49**	**6.60**	**5.21**	**6.81**		**6.60**	
Selenium (Total) (7782-49-2)	10/4-5/2016	mg/l	<0.005	<0.005	**0.00721**	<0.005	<0.005		<0.005					
MCL = 0.05	8/10-11/2017	mg/l	<0.005	<0.005	**0.00651**	<0.005	<0.005	<0.005	<0.005					
	9/26-27/2018	mg/l	<0.005	<0.005	**0.0054**	<0.005	<0.005	<0.005	<0.005					
	7/8-9/2019	mg/l	<0.005	<0.005	<0.005	<0.02	<0.02	<0.02	<0.02					
	9/1-2/2020	mg/l	<0.005	<0.005	<0.005	<0.02	<0.02	<0.02	<0.02					
	5/25-26/2021	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005					
	9/8-9/2022	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005					
	9/5-6/2023	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0054**	<0.005		<0.005	**0.00812**
	4/17-18/2024	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	
Sulfate (14808-79-8)	10/4-5/2016	mg/l	**295**	**175**	**1030**	**1740**	**802**		**1340**	**1750**	**2140**	**3500**	**1740**	
	8/10-11/2017	mg/l	**304**	**243**	**1100**	**3600**	**681**	**2240**	**2260**	**2010**	**2310**		**1920**	
	9/26-27/2018	mg/l	**403**	**227**	**1210**	**1890**	**743**	**2220**	**1720**	**2050**	**2500**		**2000**	
	7/8-9/2019	mg/l	**467**	**265**	**1220**	**1910**	**733**	**2290**	**1870**	**2400**	**2680**	**3130**	**1890**	
	9/1-2/2020	mg/l	**464**	**262**	**1130**	**1830**	**680**	**2510**	**1760**	**2410**	**2730**	**3150**	**2110**	
	5/25-26/2021	mg/l	**429**	**307**	**1140**	**1770**	**744**	**2740**	**2030**	**2450**	**2470**	**3140**	**1850**	
	9/8-9/2022	mg/l	**373**	**236**	**1170**	**1760**	**1300**	**2220**	**2000**	**948**	**2590**		**2000**	
	9/5-6/2023	mg/l	**373**	**216**	**1290**	**1800**	**762**	**2230**	**2160**	**2370**	**2410**		**2200**	**3620**
	4/17-18/2024	mg/l	**368**	**187**	**1190**	**1800**	**751**	**2200**	**2380**	**2240**	**2320**		**2140**	

Constituent (CAS #)	Sample Date	Units	MW-6 Bkgrnd	MW-8 DwnGrad	MW-9 DwnGrad	MW-10 DwnGrad	MW-11 DwnGrad	MW-12R DwnGrad	MW-13R DwnGrad	MW-26 Bkgrnd	#002 U-Drain	#004 Mine Drain	#005 U-Drain	Leachate -
TDS (STL00242)	10/4-5/2016	mg/l												
	8/10-11/2017	mg/l												
	9/26-27/2018	mg/l												
	7/8-9/2019	mg/l												
	9/1-2/2020	mg/l												
	5/25-26/2021	mg/l												
	9/8-9/2022	mg/l												
	9/5-6/2023	mg/l	**778**	**632**	**1890**	**2440**	**1560**	**3750**	**3370**	**3280**	**3700**		**3240**	**5820**
	4/17-18/2024	mg/l	**774**	**624**	**1830**	**2840**	**1780**	**4160**	**3630**	**3080**	**3700**		**3140**	
TSS (STL00161)	10/4-5/2016	mg/l												
	8/10-11/2017	mg/l												
	9/26-27/2018	mg/l												
	7/8-9/2019	mg/l												
	9/1-2/2020	mg/l												
	5/25-26/2021	mg/l												
	9/8-9/2022	mg/l												
	9/5-6/2023	mg/l												
	4/17-18/2024	mg/l	**2.5**	**5.1**	**8.3**	**20.7**	**49.0**	**3.0**	**18.6**	<1.9	<5.0		**46.7**	
Zinc (Total) (7440-66-6)	10/4-5/2016	mg/l	<0.01	<0.01	<0.01	<0.01	**0.0556**		**0.0111**					
HAL = 2.0	8/10-11/2017	mg/l	<0.02	<0.02	<0.02	<0.02	**0.0554**	<0.02	**0.0413**					
	9/26-27/2018	mg/l	<0.02	<0.02	<0.02	<0.02	**0.0521**	<0.02	**0.0911**					
	7/8-9/2019	mg/l	<0.02	<0.02	<0.02	<0.08	<0.08	<0.08	<0.08					
	9/1-2/2020	mg/l	<0.02	<0.02	<0.02	<0.02	**0.0392**	<0.02	**0.0316**					
	5/25-26/2021	mg/l	<0.02	<0.02	<0.02	<0.02	**0.0550**	<0.02	**<0.02**					
	9/8-9/2022	mg/l	<0.02	<0.02	<0.02	<0.02	**0.82**	<0.02	**0.029**					
	9/5-6/2023	mg/l	<0.02	**0.0214**	<0.02	<0.02	**0.438**	<0.02	<0.02	**0.32**	<0.02		**0.131**	<0.2
	4/17-18/2024	mg/l	<0.02	<0.02	**0.0232**	<0.02	**0.235**	<0.02	**0.0233**	**0.25**	<0.02		**0.107**	

Key:
MCL = USEPA Maximum Contaminant Level
HAL = Health Advisory Level
SWS = Iowa Statewide Standards

Appendix D

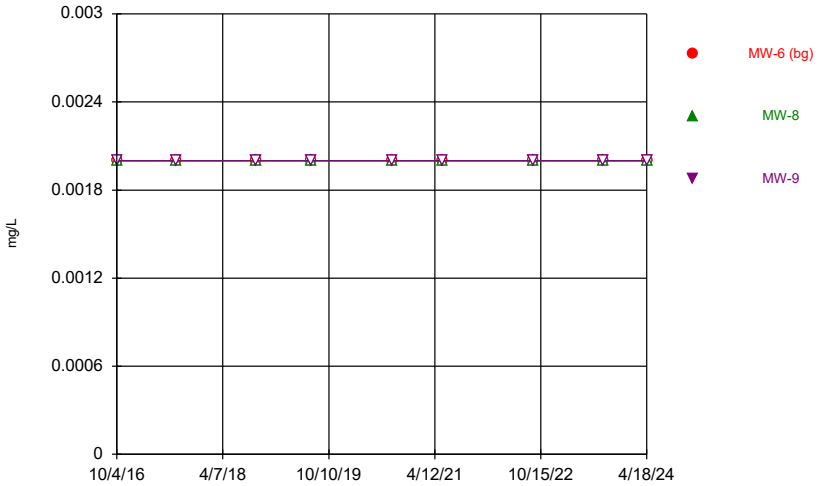
Statistical Report

Attachment A

Time Series Graphs

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

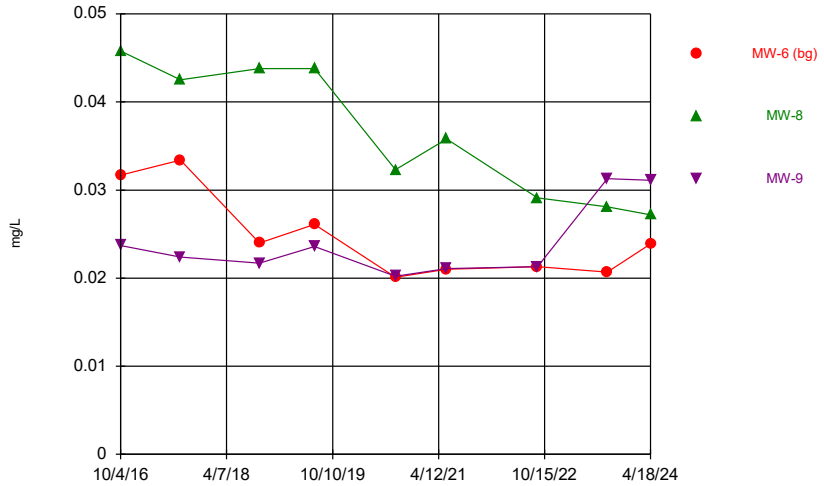
Time Series



Constituent: Arsenic Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG

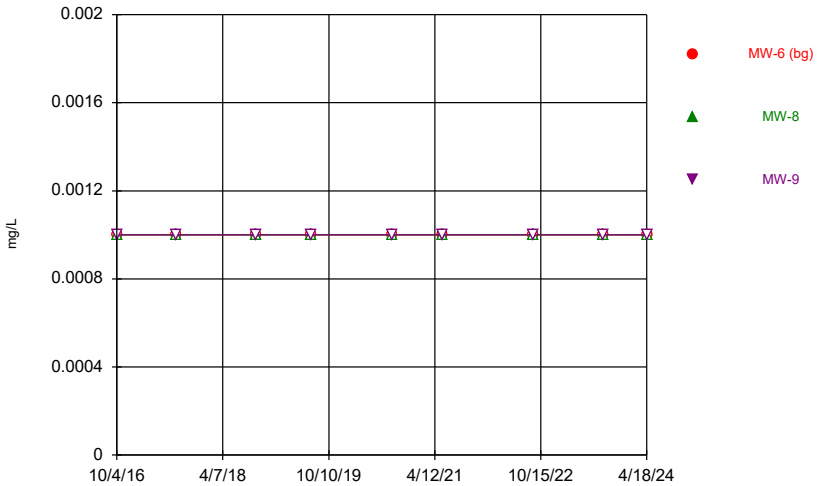
Time Series



Constituent: Barium Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

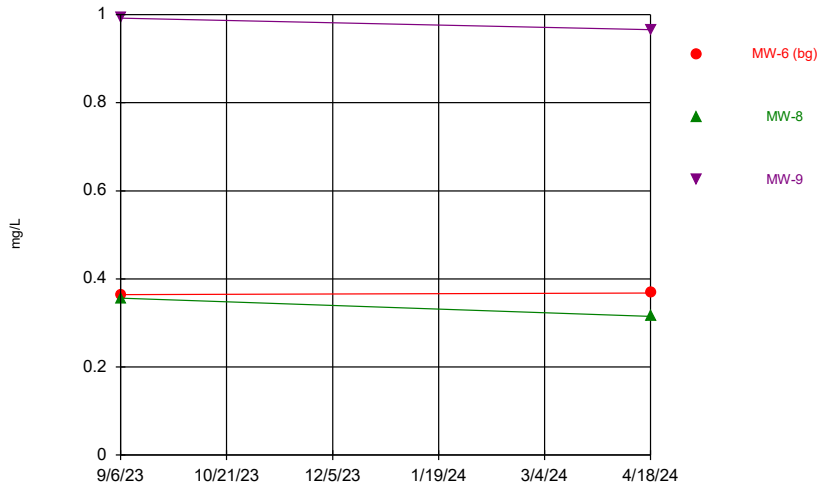
Time Series



Constituent: Beryllium Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG

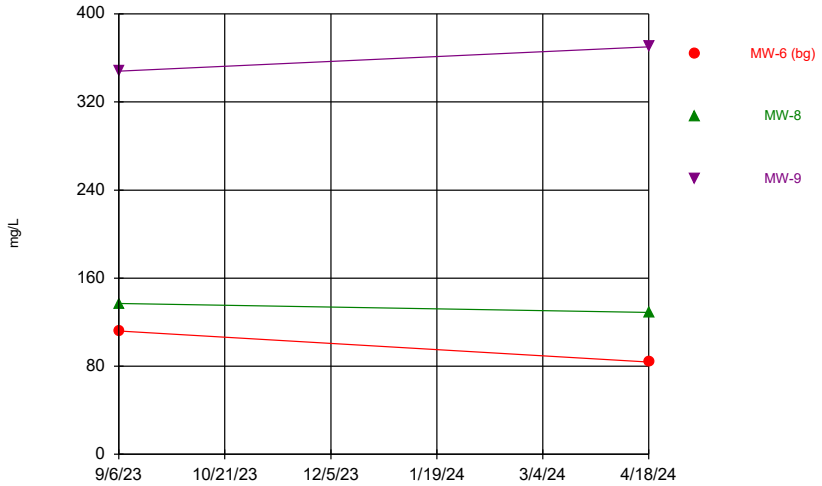
Time Series



Constituent: Boron Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG

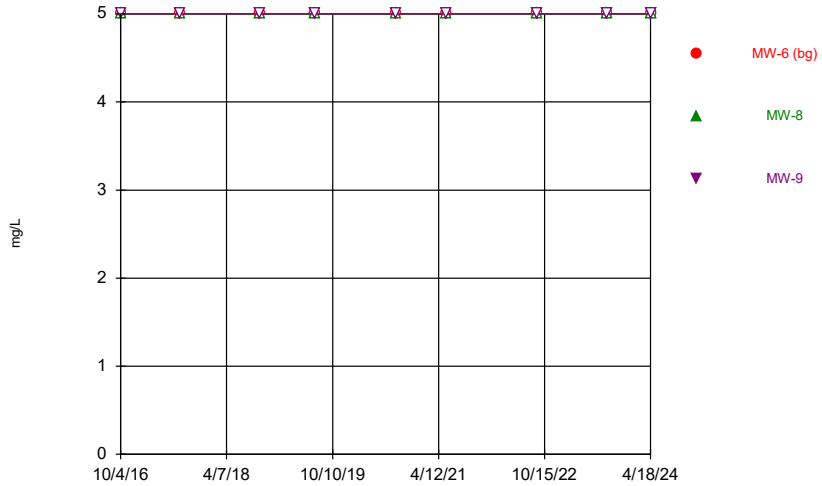
Time Series



Constituent: Calcium Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

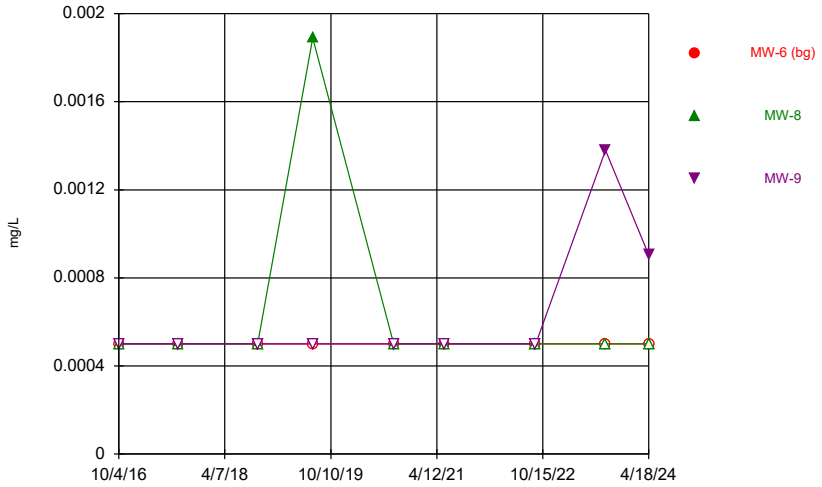
Time Series



Constituent: Chloride Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

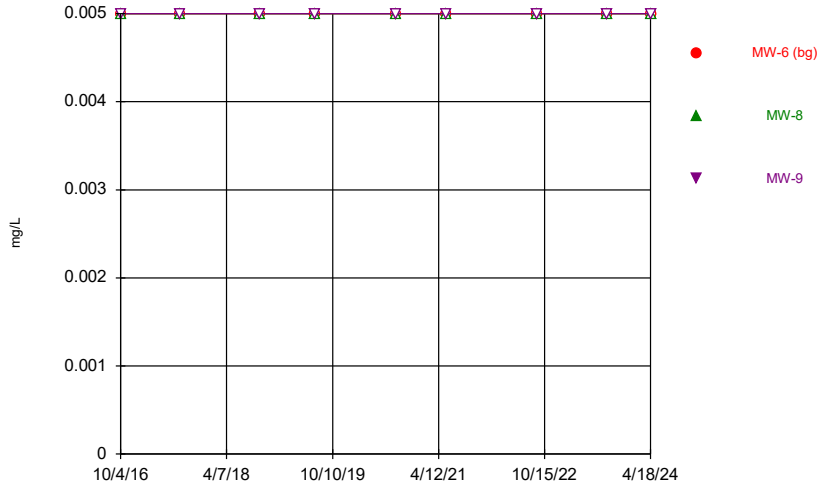
Time Series



Constituent: Cobalt Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

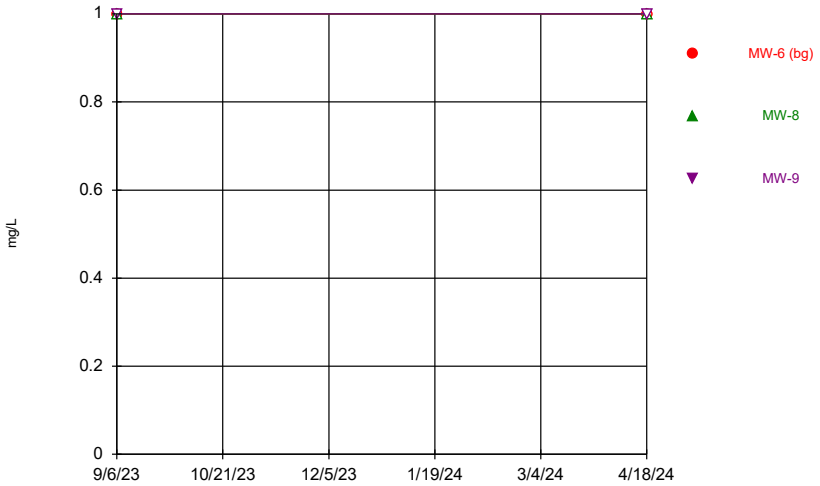
Time Series



Constituent: Copper Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

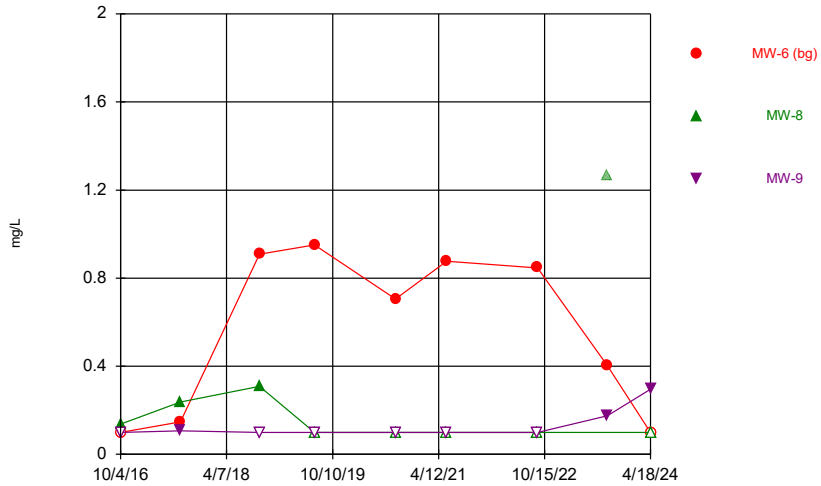
Time Series



Constituent: Fluoride Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

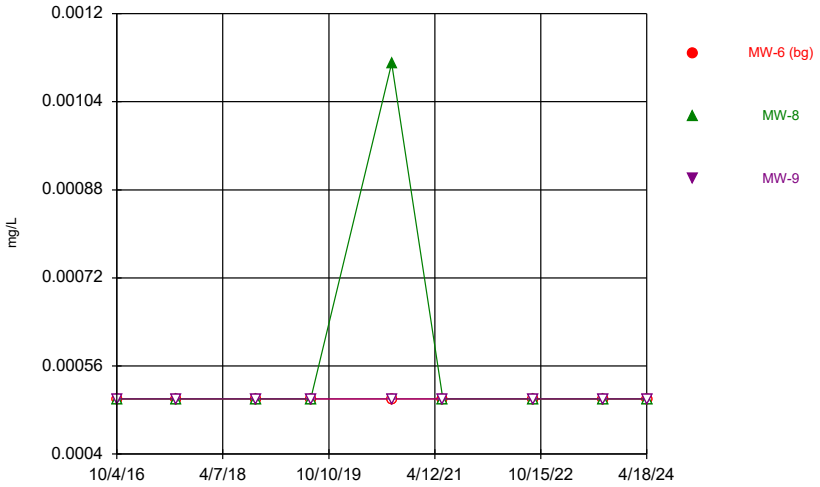
Time Series



Constituent: Iron Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

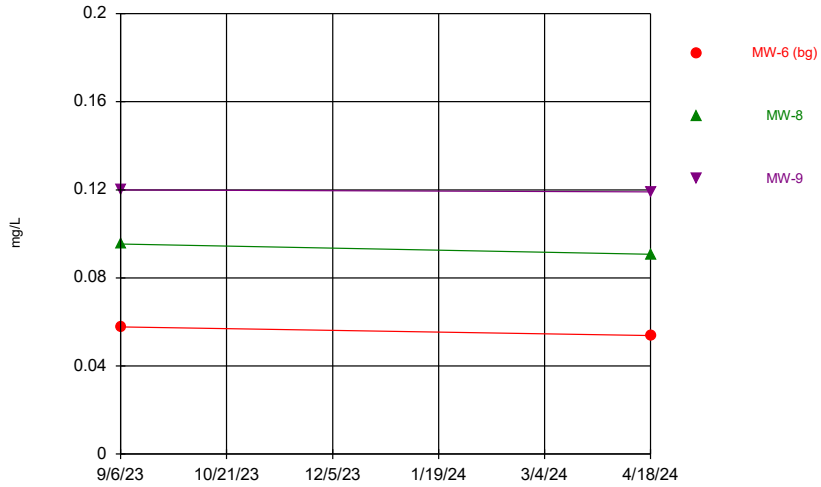
Time Series



Constituent: Lead Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG

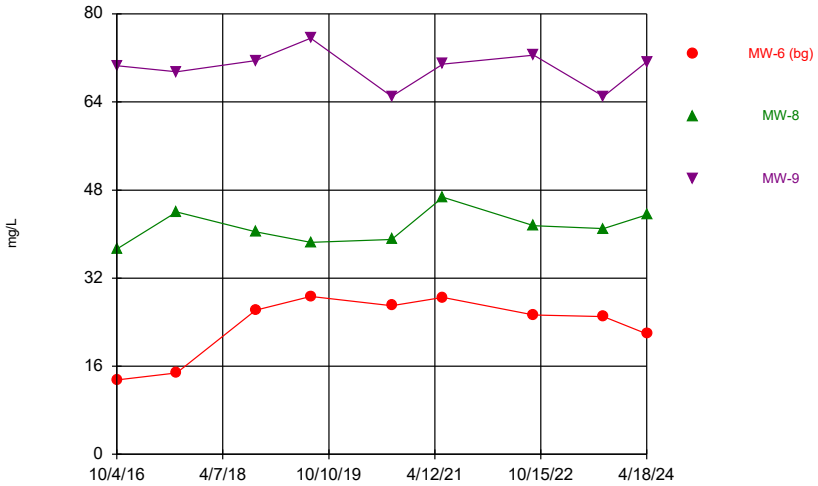
Time Series



Constituent: Lithium Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG

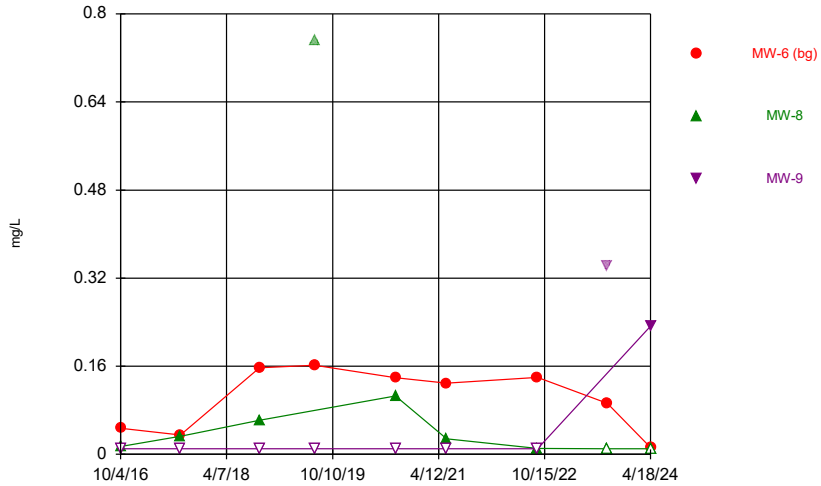
Time Series



Constituent: Magnesium Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

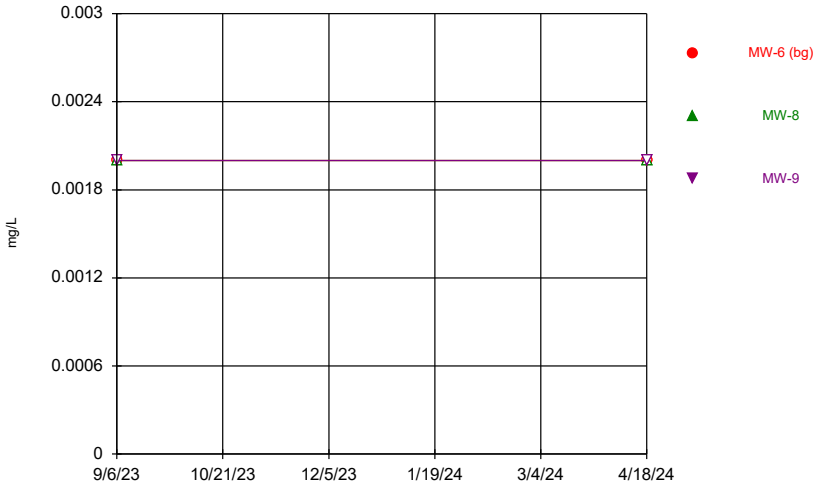
Time Series



Constituent: Manganese Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

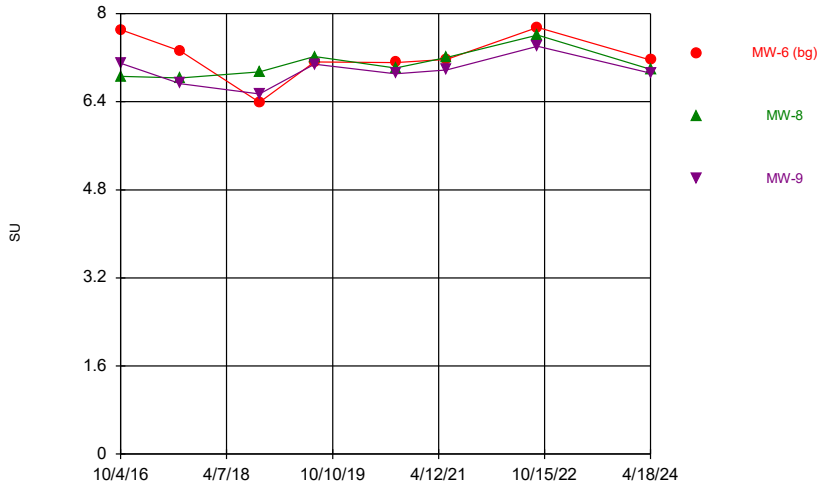
Time Series



Constituent: Molybdenum Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG

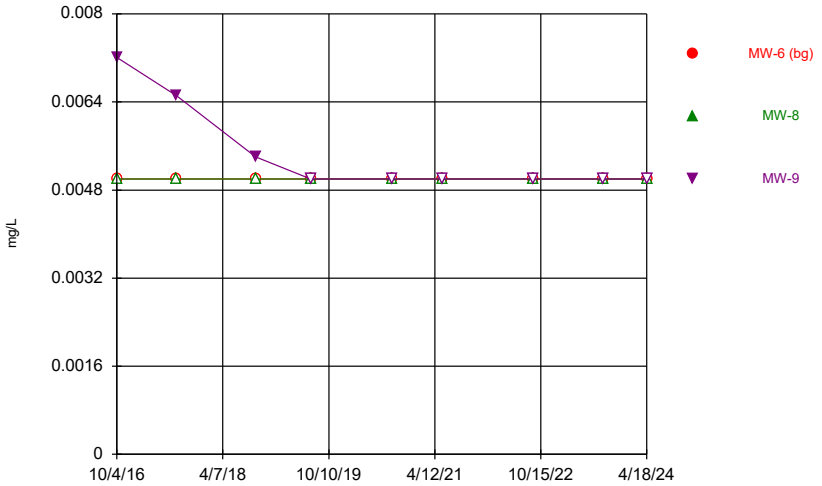
Time Series



Constituent: pH Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

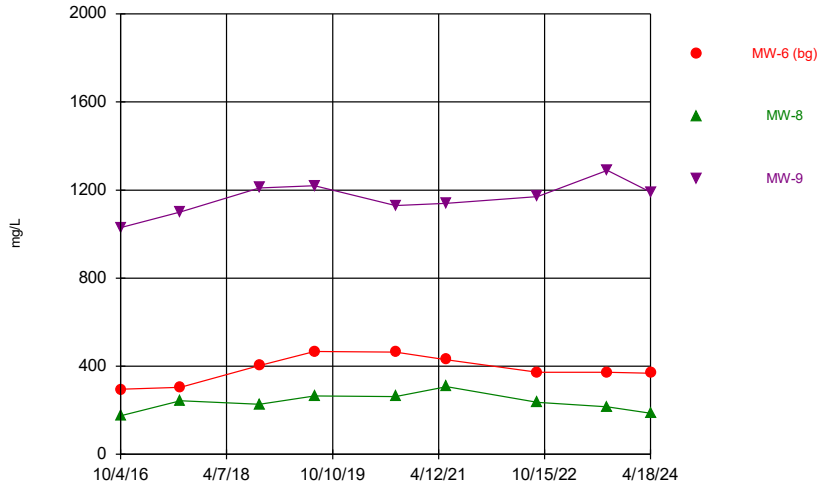
Time Series



Constituent: Selenium Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG

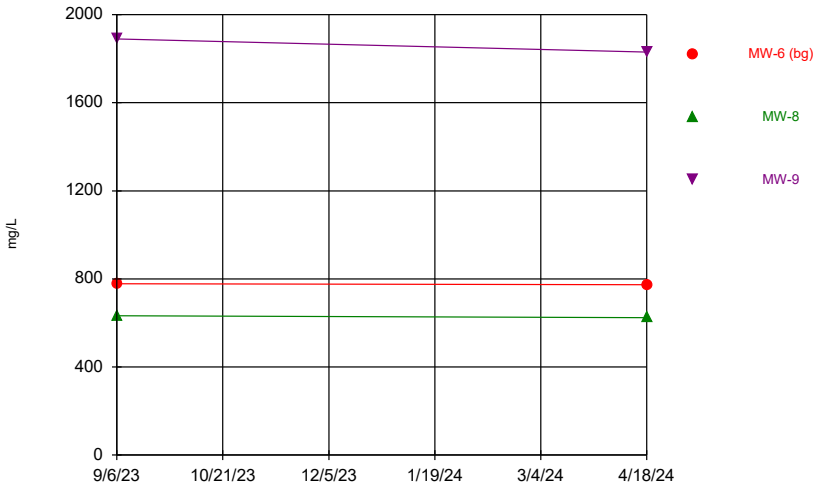
Time Series



Constituent: Sulfate Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG

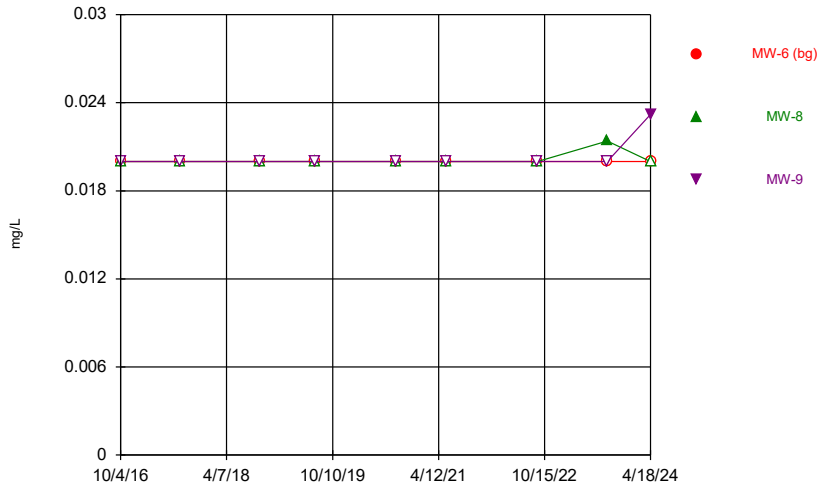
Time Series



Constituent: Total Dissolved Solids Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

Time Series



Constituent: Zinc Analysis Run 6/19/2024 12:55 PM View: Unit 01
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Time Series

Constituent: Arsenic (mg/L) Analysis Run 6/19/2024 12:58 PM View: Unit 01

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
10/4/2016	<0.002	<0.002	<0.002
8/10/2017	<0.002	<0.002	<0.002
9/26/2018	<0.002	<0.002	<0.002
7/8/2019	<0.002	<0.002	<0.002
9/1/2020	<0.002	<0.002	<0.002
5/25/2021	<0.002	<0.002	<0.002
9/8/2022	<0.002	<0.002	<0.002
9/6/2023	<0.002	<0.002	<0.002
4/18/2024	<0.002	<0.002	<0.002

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Barium (mg/L) Analysis Run 6/19/2024 12:58 PM View: Unit 01

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
10/4/2016	0.0317	0.0458	0.0237
8/10/2017	0.0334	0.0425	0.0224
9/26/2018	0.024	0.0438	0.0217
7/8/2019	0.0261	0.0438	0.0236
9/1/2020	0.0201	0.0323	0.0202
5/25/2021	0.021	0.0358	0.0211
9/8/2022	0.0213	0.0291	0.0213
9/6/2023	0.0207	0.0281	0.0313
4/18/2024	0.0239	0.0272	0.0311

Time Series

Constituent: Beryllium (mg/L) Analysis Run 6/19/2024 12:58 PM View: Unit 01

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
10/4/2016	<0.001	<0.001	<0.001
8/10/2017	<0.001	<0.001	<0.001
9/26/2018	<0.001	<0.001	<0.001
7/8/2019	<0.001	<0.001	<0.001
9/1/2020	<0.001	<0.001	<0.001
5/25/2021	<0.001	<0.001	<0.001
9/8/2022	<0.001	<0.001	<0.001
9/6/2023	<0.001	<0.001	<0.001
4/18/2024	<0.001	<0.001	<0.001

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Boron (mg/L) Analysis Run 6/19/2024 12:58 PM View: Unit 01

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
9/6/2023	0.364	0.356	0.992
4/18/2024	0.368	0.315	0.966

Time Series

Constituent: Calcium (mg/L) Analysis Run 6/19/2024 12:58 PM View: Unit 01

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
9/6/2023	112	137	348
4/18/2024	83.7	129	370

Time Series

Constituent: Chloride (mg/L) Analysis Run 6/19/2024 12:58 PM View: Unit 01

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
10/4/2016	<5	<5	<5
8/10/2017	<5	<5	<5
9/26/2018	<5	<5	<5
7/8/2019	<5	<5	<5
9/1/2020	<5	<5	<5
5/25/2021	<5	<5	<5
9/8/2022	<5	<5	<5
9/6/2023	<5	<5	<5
4/18/2024	<5	<5	<5

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Cobalt (mg/L) Analysis Run 6/19/2024 12:58 PM View: Unit 01

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
10/4/2016	<0.0005	<0.0005	<0.0005
8/10/2017	<0.0005	<0.0005	<0.0005
9/26/2018	<0.0005	<0.0005	<0.0005
7/8/2019	<0.0005	0.00189	<0.0005
9/1/2020	<0.0005	<0.0005	<0.0005
5/25/2021	<0.0005	<0.0005	<0.0005
9/8/2022	<0.0005	<0.0005	<0.0005
9/6/2023	<0.0005	<0.0005	0.00138
4/18/2024	<0.0005	<0.0005	0.000904

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Copper (mg/L) Analysis Run 6/19/2024 12:58 PM View: Unit 01

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
10/4/2016	<0.005	<0.005	<0.005
8/10/2017	<0.005	<0.005	<0.005
9/26/2018	<0.005	<0.005	<0.005
7/8/2019	<0.005	<0.005	<0.005
9/1/2020	<0.005	<0.005	<0.005
5/25/2021	<0.005	<0.005	<0.005
9/8/2022	<0.005	<0.005	<0.005
9/6/2023	<0.005	<0.005	<0.005
4/18/2024	<0.005	<0.005	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Fluoride (mg/L) Analysis Run 6/19/2024 12:58 PM View: Unit 01

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
9/6/2023	<1	<1	<1
4/18/2024	<1	<1	<1

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Iron (mg/L) Analysis Run 6/19/2024 12:58 PM View: Unit 01

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
10/4/2016	<0.1	0.137	<0.1
8/10/2017	0.148	0.238	0.107
9/26/2018	0.909	0.308	<0.1
7/8/2019	0.951	<0.1	<0.1
9/1/2020	0.706	<0.1	<0.1
5/25/2021	0.877	<0.1	<0.1
9/8/2022	0.847	<0.1	<0.1
9/6/2023	0.403	1.27 (o)	0.175
4/18/2024	<0.1	<0.1	0.296

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Lead (mg/L) Analysis Run 6/19/2024 12:58 PM View: Unit 01

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
10/4/2016	<0.0005	<0.0005	<0.0005
8/10/2017	<0.0005	<0.0005	<0.0005
9/26/2018	<0.0005	<0.0005	<0.0005
7/8/2019	<0.0005	<0.0005	<0.0005
9/1/2020	<0.0005	0.00111	<0.0005
5/25/2021	<0.0005	<0.0005	<0.0005
9/8/2022	<0.0005	<0.0005	<0.0005
9/6/2023	<0.0005	<0.0005	<0.0005
4/18/2024	<0.0005	<0.0005	<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Lithium (mg/L) Analysis Run 6/19/2024 12:58 PM View: Unit 01

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
9/6/2023	0.0577	0.0954	0.12
4/18/2024	0.0538	0.0908	0.119

Time Series

Constituent: Magnesium (mg/L) Analysis Run 6/19/2024 12:58 PM View: Unit 01

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
10/4/2016	13.5	37.3	70.6
8/10/2017	14.8	44	69.5
9/26/2018	26.2	40.4	71.5
7/8/2019	28.7	38.5	75.6
9/1/2020	27	39	65
5/25/2021	28.5	46.7	70.9
9/8/2022	25.3	41.5	72.5
9/6/2023	25	41	65
4/18/2024	21.9	43.5	71.3

Time Series

Constituent: Manganese (mg/L) Analysis Run 6/19/2024 12:58 PM View: Unit 01

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
10/4/2016	0.0474	0.014	<0.01
8/10/2017	0.035	0.033	<0.01
9/26/2018	0.157	0.062	<0.01
7/8/2019	0.162	0.751 (o)	<0.01
9/1/2020	0.139	0.106	<0.01
5/25/2021	0.129	0.028	<0.01
9/8/2022	0.14	0.011	<0.01
9/6/2023	0.0924	<0.01	0.341 (o)
4/18/2024	0.0122	<0.01	0.233

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 6/19/2024 12:58 PM View: Unit 01

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
9/6/2023	<0.002	<0.002	<0.002
4/18/2024	<0.002	<0.002	<0.002

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: pH (SU) Analysis Run 6/19/2024 12:58 PM View: Unit 01

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
10/4/2016	7.71	6.86	7.1
8/10/2017	7.32	6.83	6.73
9/26/2018	6.39	6.94	6.54
7/8/2019	7.12	7.22	7.08
9/1/2020	7.11	7.01	6.91
5/25/2021	7.17 (D)	7.205 (D)	6.975 (D)
9/8/2022	7.75	7.61	7.41
4/18/2024	7.16	6.99	6.92

Time Series

Constituent: Selenium (mg/L) Analysis Run 6/19/2024 12:58 PM View: Unit 01

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
10/4/2016	<0.005	<0.005	0.00721
8/10/2017	<0.005	<0.005	0.00651
9/26/2018	<0.005	<0.005	0.0054
7/8/2019	<0.005	<0.005	<0.005
9/1/2020	<0.005	<0.005	<0.005
5/25/2021	<0.005	<0.005	<0.005
9/8/2022	<0.005	<0.005	<0.005
9/6/2023	<0.005	<0.005	<0.005
4/18/2024	<0.005	<0.005	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Sulfate (mg/L) Analysis Run 6/19/2024 12:58 PM View: Unit 01

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
10/4/2016	295	175	1030
8/10/2017	304	243	1100
9/26/2018	403	227	1210
7/8/2019	467	265	1220
9/1/2020	464	262	1130
5/25/2021	429	307	1140
9/8/2022	373	236	1170
9/6/2023	373	216	1290
4/18/2024	368	187	1190

Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 6/19/2024 12:58 PM View: Unit 01

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
9/6/2023	778	632	1890
4/18/2024	774	624	1830

Time Series

Constituent: Zinc (mg/L) Analysis Run 6/19/2024 12:58 PM View: Unit 01

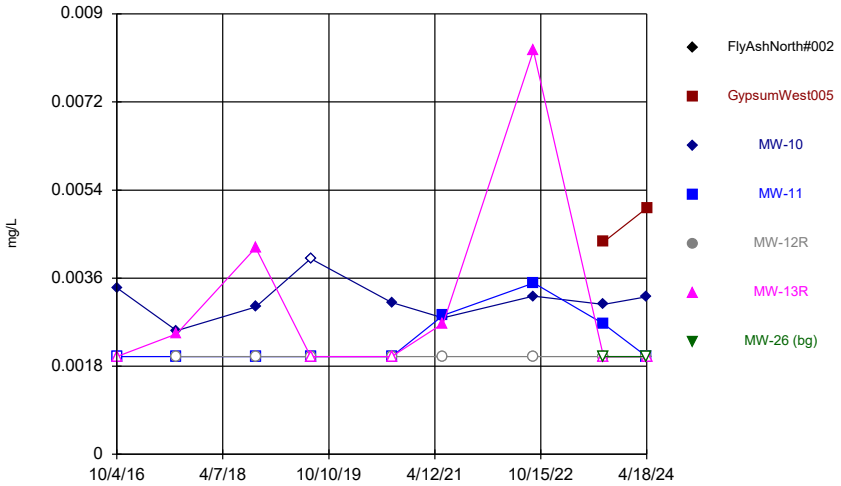
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6 (bg)	MW-8	MW-9
10/4/2016	<0.02	<0.02	<0.02
8/10/2017	<0.02	<0.02	<0.02
9/26/2018	<0.02	<0.02	<0.02
7/8/2019	<0.02	<0.02	<0.02
9/1/2020	<0.02	<0.02	<0.02
5/25/2021	<0.02	<0.02	<0.02
9/8/2022	<0.02	<0.02	<0.02
9/6/2023	<0.02	0.0214	<0.02
4/18/2024	<0.02	<0.02	0.0232

ND substitution: RL or RL/2 if <15% NDs.

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

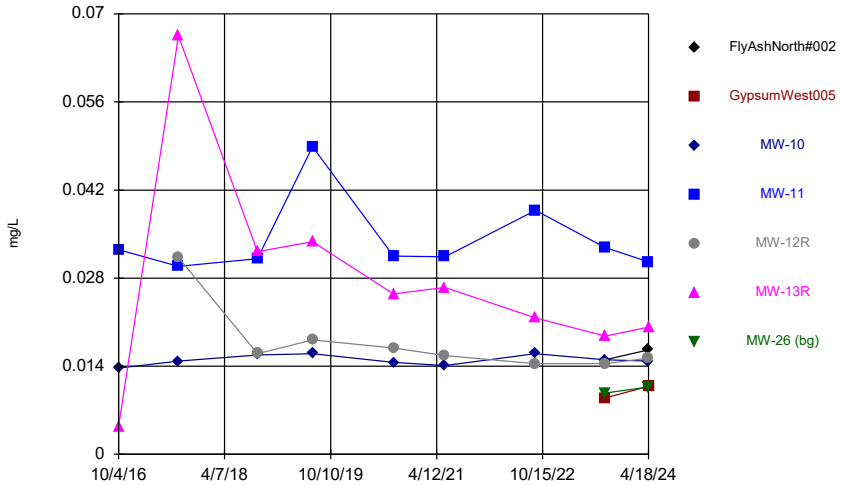
Time Series



Constituent: Arsenic Analysis Run 6/19/2024 2:36 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG

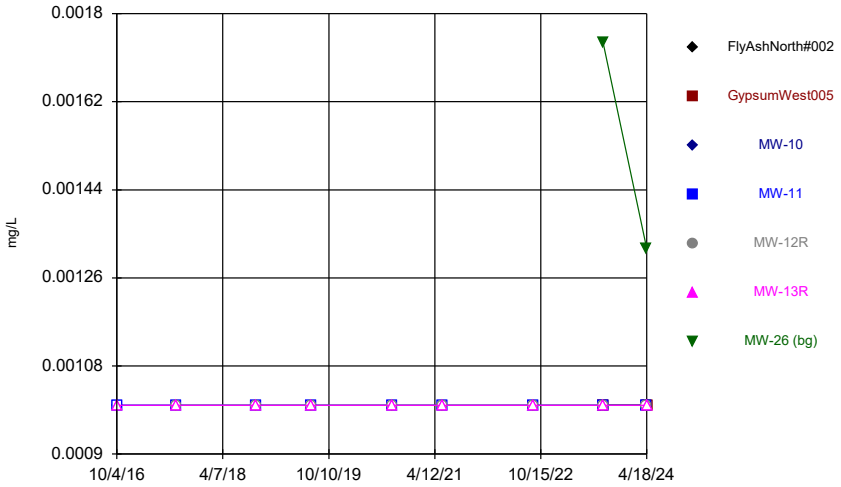
Time Series



Constituent: Barium Analysis Run 6/19/2024 2:36 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

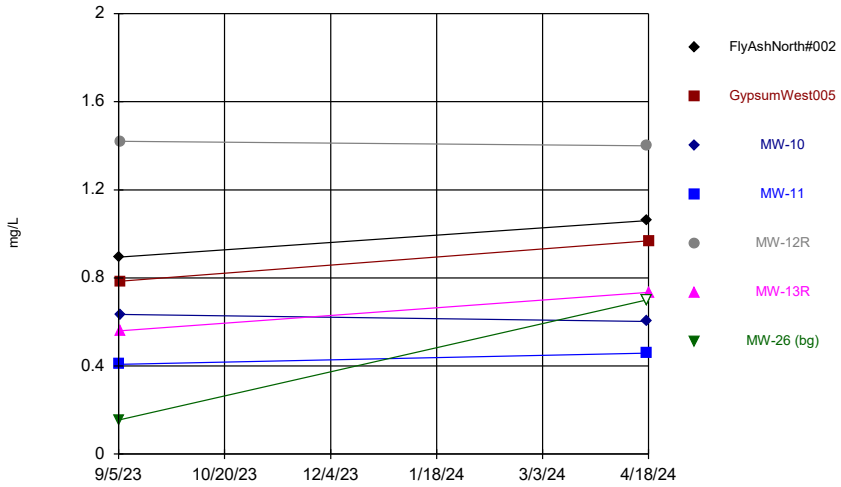
Time Series



Constituent: Beryllium Analysis Run 6/19/2024 2:36 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

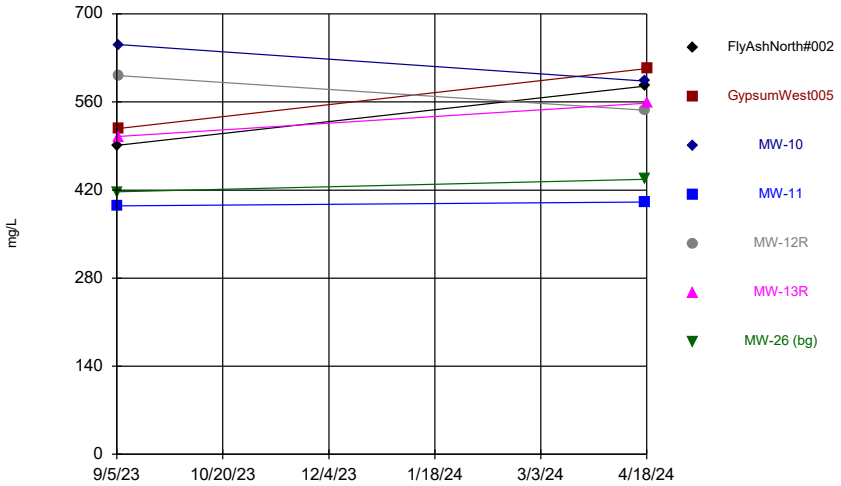
Time Series



Constituent: Boron Analysis Run 6/19/2024 2:36 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG

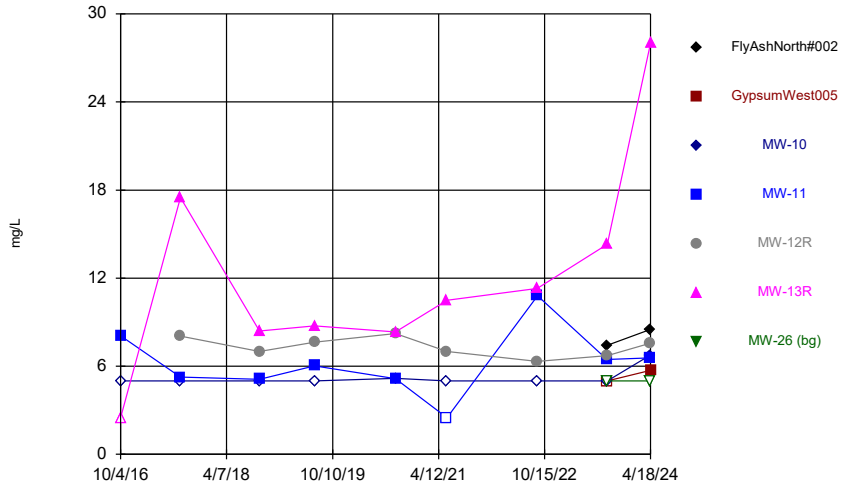
Time Series



Constituent: Calcium Analysis Run 6/19/2024 2:36 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

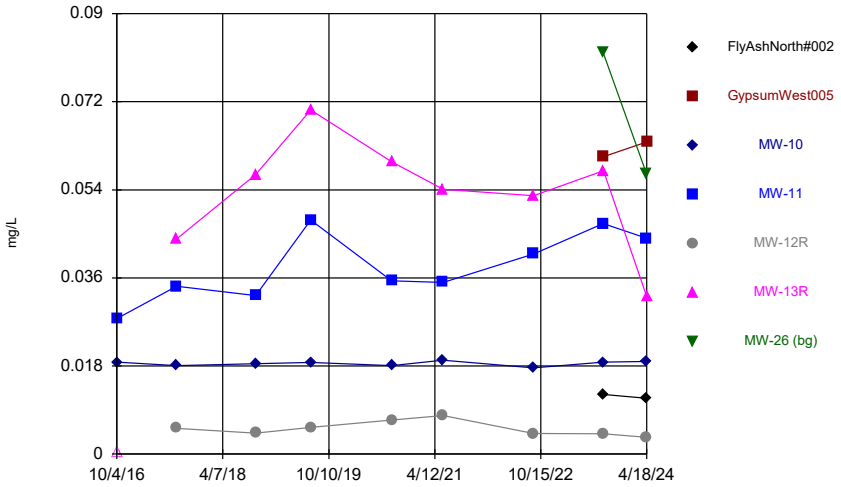
Time Series



Constituent: Chloride Analysis Run 6/19/2024 2:36 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

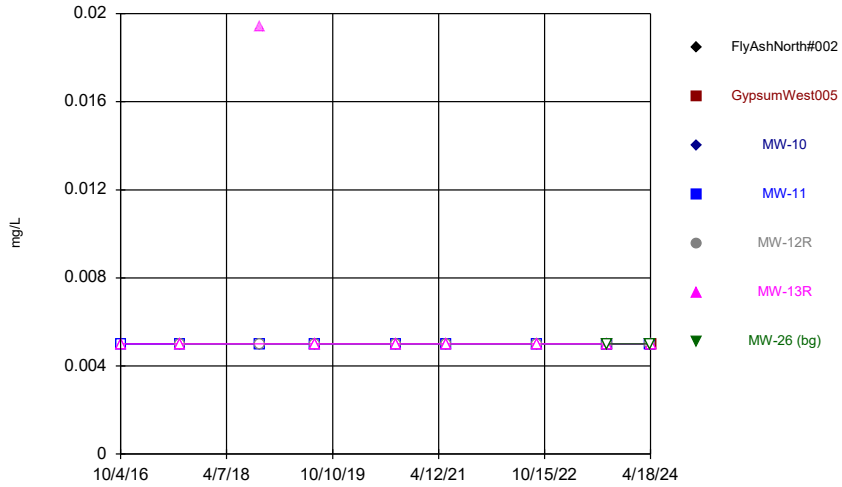
Time Series



Constituent: Cobalt Analysis Run 6/19/2024 2:36 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

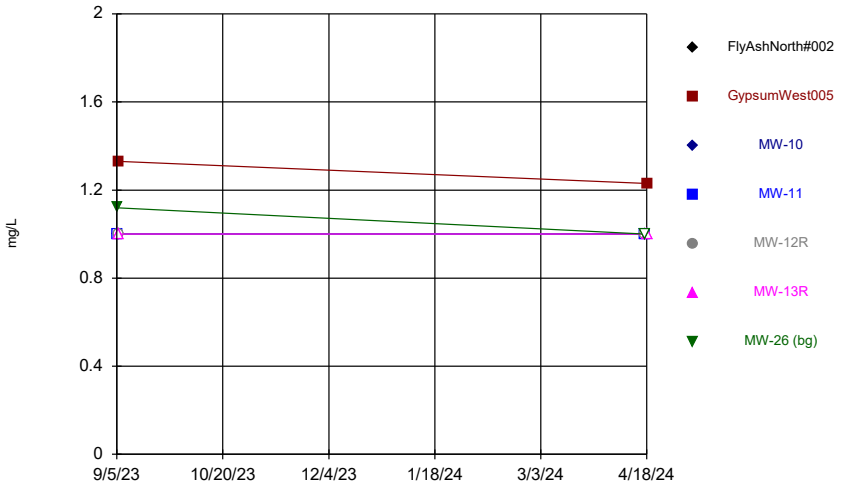
Time Series



Constituent: Copper Analysis Run 6/19/2024 2:36 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

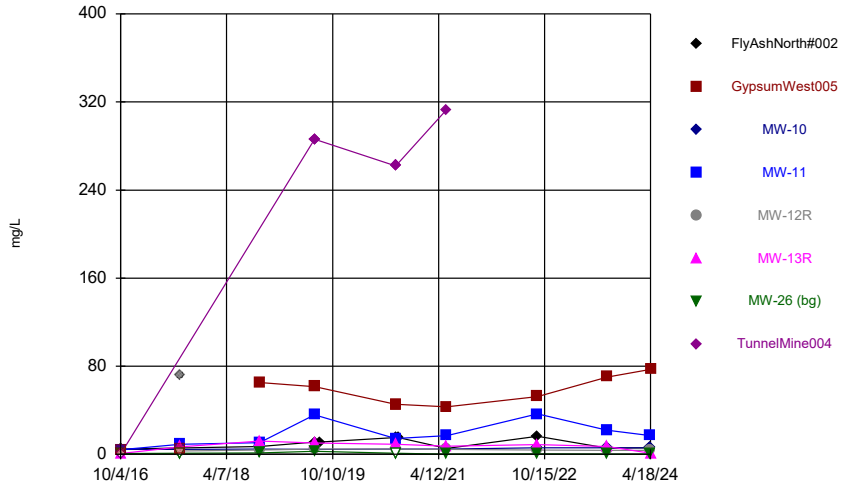
Time Series



Constituent: Fluoride Analysis Run 6/19/2024 2:37 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

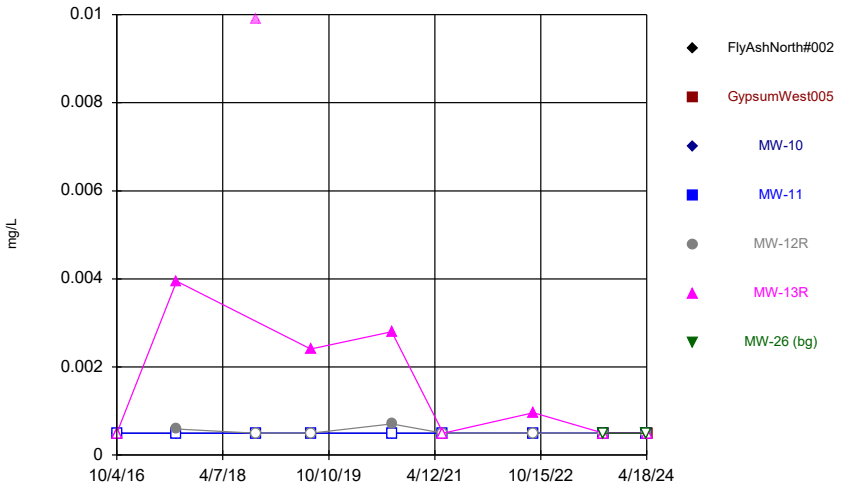
Time Series



Constituent: Iron Analysis Run 6/19/2024 2:37 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

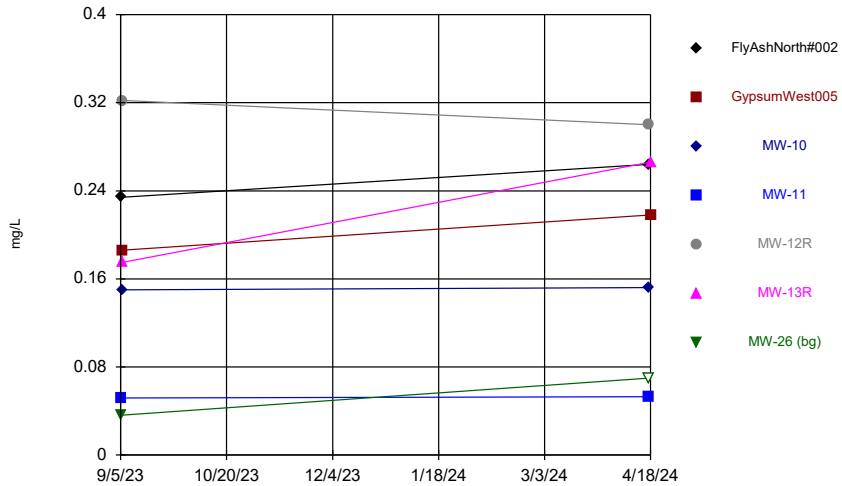
Time Series



Constituent: Lead Analysis Run 6/19/2024 2:37 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

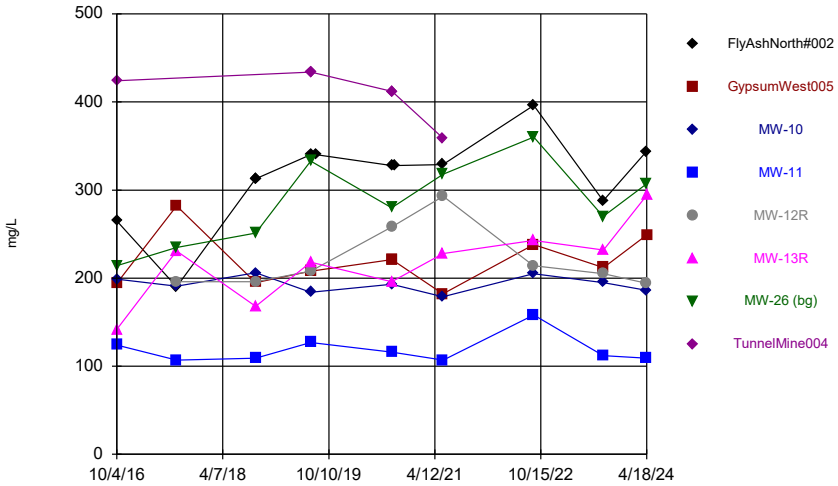
Time Series



Constituent: Lithium Analysis Run 6/19/2024 2:37 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG

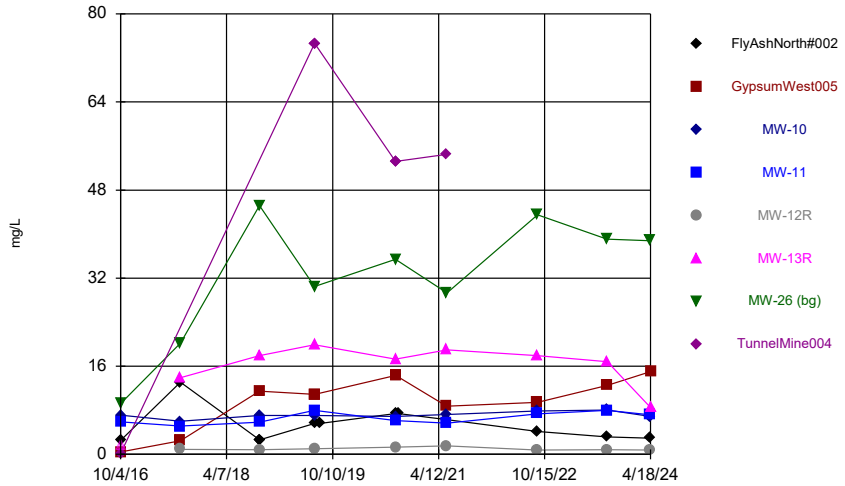
Time Series



Constituent: Magnesium Analysis Run 6/19/2024 2:37 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG

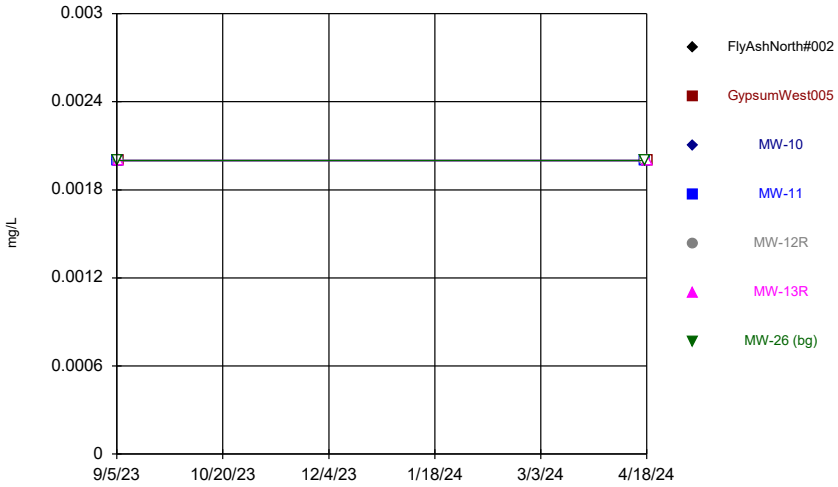
Time Series



Constituent: Manganese Analysis Run 6/19/2024 2:37 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

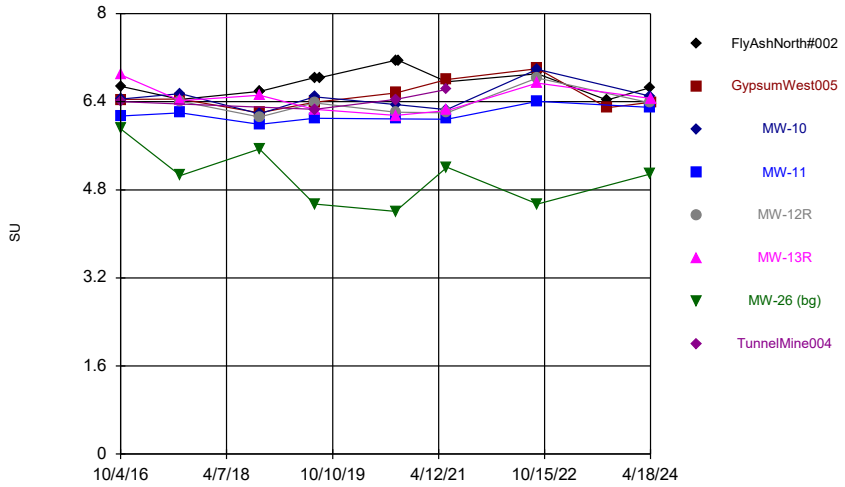
Time Series



Constituent: Molybdenum Analysis Run 6/19/2024 2:37 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG

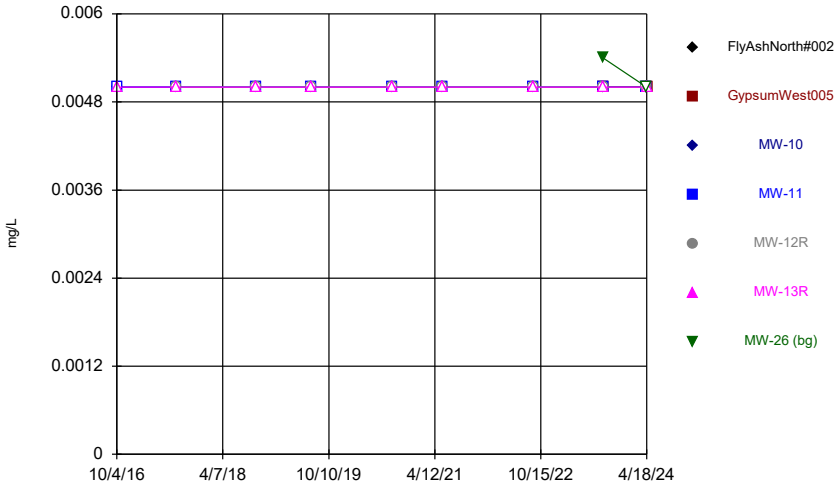
Time Series



Constituent: pH Analysis Run 6/19/2024 2:37 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

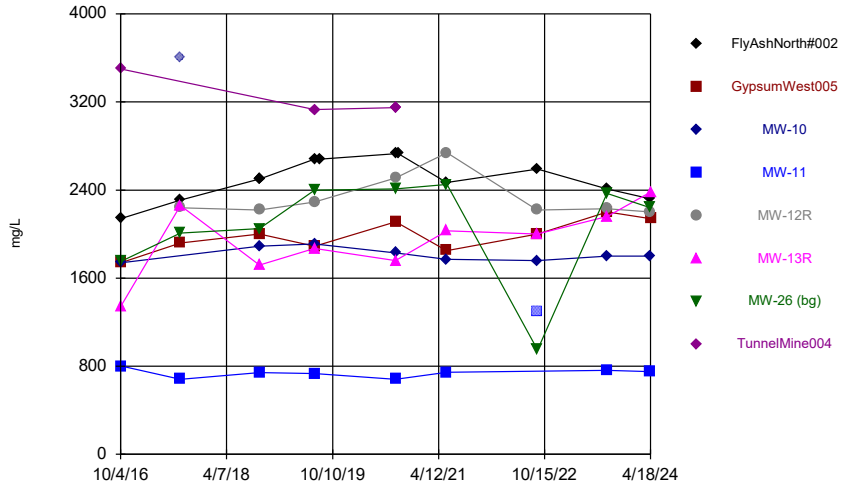
Time Series



Constituent: Selenium Analysis Run 6/19/2024 2:37 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG

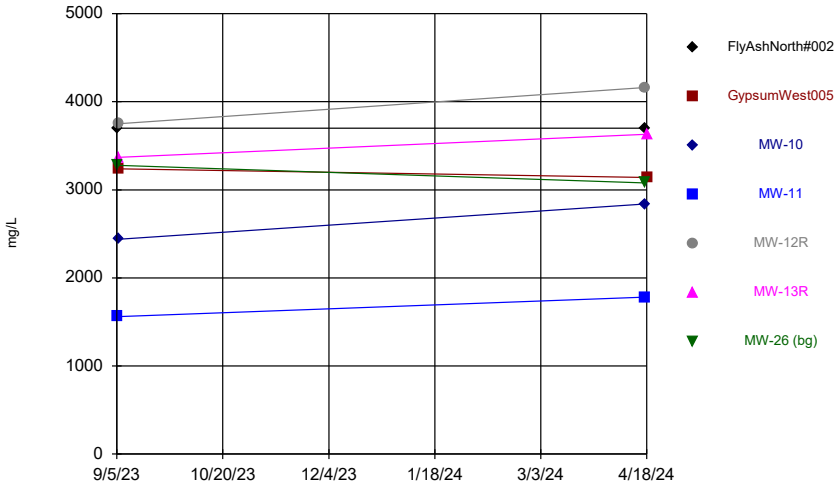
Time Series



Constituent: Sulfate Analysis Run 6/19/2024 2:37 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG

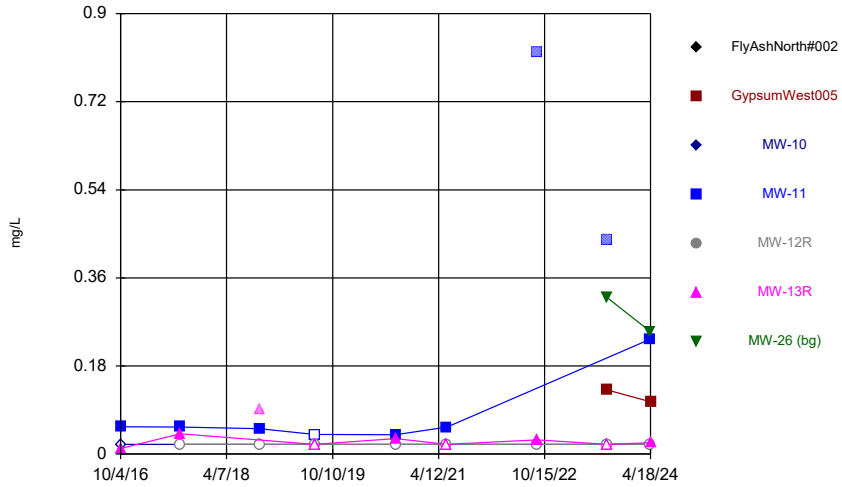
Time Series



Constituent: Total Dissolved Solids Analysis Run 6/19/2024 2:37 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

Time Series



Constituent: Zinc Analysis Run 6/19/2024 2:37 PM View: Unit 02
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Time Series

Constituent: Arsenic (mg/L) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)
10/4/2016			0.0034	<0.002		<0.002	
8/10/2017			0.00253	<0.002	<0.002	0.00246	
9/26/2018			0.00301	<0.002	<0.002	0.00422	
7/8/2019			<0.008	<0.002	<0.002	<0.002	
9/1/2020			0.0031	<0.002	<0.002	<0.002	
5/25/2021			0.00279				
5/26/2021				0.00284	<0.002	0.00268	
9/7/2022			0.00323		<0.002	0.00825	
9/8/2022				0.0035			
9/5/2023	<0.002			0.00267			<0.002
9/6/2023		0.00434	0.00306		<0.002	<0.002	
4/17/2024	<0.002		0.00322	<0.002	<0.002		<0.002
4/18/2024		0.00503				<0.002	

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Barium (mg/L) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)
10/4/2016			0.0137	0.0325		0.00446	
8/10/2017			0.0148	0.0299	0.0313	0.0665	
9/26/2018			0.0158	0.0311	0.016	0.0322	
7/8/2019			0.016	0.0489	0.0182	0.0338	
9/1/2020			0.0146	0.0315	0.0169	0.0255	
5/25/2021			0.0141				
5/26/2021				0.0314	0.0157	0.0265	
9/7/2022			0.016		0.0144	0.0217	
9/8/2022				0.0388			
9/5/2023	0.015			0.0329			0.00972
9/6/2023		0.00896	0.015		0.0144	0.0188	
4/17/2024	0.0166		0.0148	0.0306	0.0153		0.0107
4/18/2024		0.0108				0.0202	

Time Series

Constituent: Beryllium (mg/L) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)
10/4/2016			<0.001	<0.001		<0.001	
8/10/2017			<0.001	<0.001	<0.001	<0.001	
9/26/2018			<0.001	<0.001	<0.001	<0.001	
7/8/2019			<0.001	<0.001	<0.001	<0.001	
9/1/2020			<0.001	<0.001	<0.001	<0.001	
5/25/2021			<0.001				
5/26/2021				<0.001	<0.001	<0.001	
9/7/2022			<0.001		<0.001	<0.001	
9/8/2022				<0.001			
9/5/2023	<0.001			<0.001			0.00174
9/6/2023		<0.001	<0.001		<0.001	<0.001	
4/17/2024	<0.001		<0.001	<0.001	<0.001		0.00132
4/18/2024		<0.001				<0.001	

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Boron (mg/L) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)
9/5/2023	0.894			0.407			0.154
9/6/2023		0.785	0.634		1.42	0.56	
4/17/2024	1.06		0.602	0.459	1.4		<0.7
4/18/2024		0.968				0.735	

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Calcium (mg/L) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)
9/5/2023	491			395			417
9/6/2023		518	651		602	505	
4/17/2024	585		593	401	547		437
4/18/2024		613				558	

Time Series

Constituent: Chloride (mg/L) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)
10/4/2016			<5	8.08		<5	
8/10/2017			<5	5.26	8.06	17.5	
9/26/2018			<5	5.12	7	8.41	
7/8/2019			<5	6.03	7.64	8.75	
9/1/2020			5.18	5.15	8.22	8.33	
5/25/2021			<5				
5/26/2021				<5	7.01	10.5	
9/7/2022			<5		6.33	11.3	
9/8/2022				10.8			
9/5/2023	7.42			6.47			<5
9/6/2023		<5	<5		6.72	14.3	
4/17/2024	8.52		6.76	6.56	7.57		<5
4/18/2024		5.72				28	

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Cobalt (mg/L) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)
10/4/2016			0.0188	0.0277		<0.0005 (o)	
8/10/2017			0.0181	0.0343	0.00528	0.044	
9/26/2018			0.0185	0.0324	0.0043	0.0571	
7/8/2019			0.0187	0.0478	0.00544	0.0703	
9/1/2020			0.0181	0.0354	0.00696	0.0597	
5/25/2021			0.0192				
5/26/2021				0.0351	0.0079	0.0541	
9/7/2022			0.0176		0.00423	0.0528	
9/8/2022				0.0409			
9/5/2023	0.0122			0.0471			0.082
9/6/2023		0.0608	0.0188		0.00416	0.0579	
4/17/2024	0.0114		0.0189	0.0441	0.0034		0.0572
4/18/2024		0.0638				0.0322	

Time Series

Constituent: Copper (mg/L) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)
10/4/2016			<0.005	<0.005		<0.005	
8/10/2017			<0.005	<0.005	<0.005	<0.005	
9/26/2018			<0.005	<0.005	<0.005	0.0194 (o)	
7/8/2019			<0.005	<0.005	<0.005	<0.005	
9/1/2020			<0.005	<0.005	<0.005	<0.005	
5/25/2021			<0.005				
5/26/2021				<0.005	<0.005	<0.005	
9/7/2022			<0.005		<0.005	<0.005	
9/8/2022				<0.005			
9/5/2023	<0.005			<0.005			<0.005
9/6/2023		<0.005	<0.005		<0.005	<0.005	
4/17/2024	<0.005		<0.005	<0.005	<0.005		<0.005
4/18/2024		<0.005				<0.005	

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Fluoride (mg/L) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)
9/5/2023	<1			<1			1.12
9/6/2023		1.33	<1		<1	<1	
4/17/2024	<1		<1	<1	<1		<1
4/18/2024		1.23				<1	

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Iron (mg/L) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)	TunnelMine004
10/4/2016	4.76	4.17 (o)	4.39	4.33		0.569	0.685	<0.1
8/10/2017	71.7 (o)	4.95 (o)	4.35	9.25	3.12	6.85	<1	
9/26/2018	7.12	65.3	4.7	10.7	3.76	12	1.2	
9/27/2018	7.12							
7/8/2019	11.1	61.5	4.59	35.9	4.68	10.4	2.88	286
7/9/2019		61.5						286
8/5/2019	11.1							
9/1/2020	15.3	45.6	4.65	14.3	4.88	9.25	<1	262
9/2/2020		45.6						262
9/16/2020	15.3							
5/25/2021	5.44	43.1	4.65					313
5/26/2021				17	4.48	7.34	0.123	
9/7/2022			6.02		3.79	8.8		
9/8/2022	16.3	52.4		36.7			0.38	
9/5/2023	5.58			22			0.216	
9/6/2023		70.3	5.97		3.73	7.06		
4/17/2024	5.84		5.83	16.9	3.6		0.111	
4/18/2024		77.1				1.05		

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Lead (mg/L) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)
10/4/2016			<0.0005	<0.0005		<0.0005	
8/10/2017			<0.0005	<0.0005	0.000591	0.00395	
9/26/2018			<0.0005	<0.0005	<0.0005	0.00989 (o)	
7/8/2019			<0.0005	<0.0005	<0.0005	0.00241	
9/1/2020			<0.0005	<0.0005	0.000708	0.0028	
5/25/2021			<0.0005				
5/26/2021				<0.0005	<0.0005	<0.0005	
9/7/2022			<0.0005		<0.0005	0.00096	
9/8/2022				<0.0005			
9/5/2023	<0.0005			<0.0005			<0.0005
9/6/2023		<0.0005	<0.0005		<0.0005	<0.0005	
4/17/2024	<0.0005		<0.0005	<0.0005	<0.0005		<0.0005
4/18/2024		<0.0005				<0.0005	

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Lithium (mg/L) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)
9/5/2023	0.234			0.0518			0.0363
9/6/2023		0.186	0.15		0.322	0.175	
4/17/2024	0.264		0.152	0.0529	0.3		<0.07
4/18/2024		0.218				0.266	

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Magnesium (mg/L) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)	TunnelMine004
10/4/2016	265	194	199	124		142	214	424
8/10/2017	190	282	191	107	196	231	235	
9/26/2018	313	195	206	109	196	168	251	
9/27/2018	313							
7/8/2019	340	208	184	127	208	218	333	434
7/9/2019		208						434
8/5/2019	340							
9/1/2020	328	221	193	116	258	196	280	412
9/2/2020		221						412
9/16/2020	328							
5/25/2021	329	182	179					359
5/26/2021				107	293	228	318	
9/7/2022			205		214	243		
9/8/2022	396	238		158			360	
9/5/2023	288			112			270	
9/6/2023		212	195		205	232		
4/17/2024	344		186	109	194		307	
4/18/2024		249				294		

Time Series

Constituent: Manganese (mg/L) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)	TunnelMine004
10/4/2016	2.55	0.411	7.12	5.87		1.74 (o)	9.2	0.135
8/10/2017	13.1	2.47	6.01	5.12	0.923	13.9	20.2	
9/26/2018	2.62	11.5	7.07	5.83	0.84	17.9	45.2	
9/27/2018	2.62							
7/8/2019	5.58	10.9	7.03	7.98	0.987	19.9	30.5	74.6
7/9/2019		10.9						74.6
8/5/2019	5.58							
9/1/2020	7.38	14.3	6.89	6.14	1.32	17.3	35.4	53.2
9/2/2020		14.3						53.2
9/16/2020	7.38							
5/25/2021	6.32	8.75	7.26					54.5
5/26/2021				5.64	1.55	19	29.3	
9/7/2022			7.85		0.808	17.9		
9/8/2022	4.16	9.42		7.37			43.5	
9/5/2023	3.15			8.01			39.1	
9/6/2023		12.5	8.07		0.85	16.8		
4/17/2024	2.92		6.86	7.17	0.771		38.8	
4/18/2024		15				8.5		

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)
9/5/2023	<0.002			<0.002			<0.002
9/6/2023		<0.002	<0.002		<0.002	<0.002	
4/17/2024	<0.002		<0.002	<0.002	<0.002		<0.002
4/18/2024		<0.002				<0.002	

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: pH (SU) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)	TunnelMine004
10/4/2016	6.68	6.44	6.45	6.14		6.89	5.91	6.4
8/10/2017	6.44	6.45	6.55	6.2	6.41	6.42	5.06	
9/26/2018	6.59	6.2	6.18	5.99	6.12	6.52	5.54	
9/27/2018	6.59							
7/8/2019	6.84	6.39	6.49	6.1	6.38	6.26	4.54	6.26
7/9/2019		6.39						6.26
8/5/2019	6.84							
9/1/2020	7.15 (HF)	6.56	6.35	6.09	6.21	6.15	4.41	6.44
9/2/2020		6.56						6.44
9/16/2020	7.15							
5/25/2021	6.76	6.8	6.255 (D)					6.62
5/26/2021				6.085 (D)	6.2 (D)	6.24 (D)	5.21 (D)	
9/7/2022			6.99		6.83	6.74		
9/8/2022	6.91	7		6.41			4.54	
9/5/2023	6.43							
9/6/2023		6.29						
4/17/2024	6.66		6.5	6.3	6.38		5.09	
4/18/2024		6.39				6.46		

Time Series

Constituent: Selenium (mg/L) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)
10/4/2016			<0.005	<0.005		<0.005	
8/10/2017			<0.005	<0.005	<0.005	<0.005	
9/26/2018			<0.005	<0.005	<0.005	<0.005	
7/8/2019			<0.005	<0.005	<0.005	<0.005	
9/1/2020			<0.005	<0.005	<0.005	<0.005	
5/25/2021			<0.005				
5/26/2021				<0.005	<0.005	<0.005	
9/7/2022			<0.005		<0.005	<0.005	
9/8/2022				<0.005			
9/5/2023	<0.005			<0.005			0.0054
9/6/2023		<0.005	<0.005		<0.005	<0.005	
4/17/2024	<0.005		<0.005	<0.005	<0.005		<0.005
4/18/2024		<0.005				<0.005	

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Sulfate (mg/L) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)	TunnelMine004
10/4/2016	2140	1740	1740	802		1340	1750	3500
8/10/2017	2310	1920	3600 (o)	681	2240	2260	2010	
9/26/2018	2500	2000	1890	743	2220	1720	2050	
9/27/2018	2500							
7/8/2019	2680	1890	1910	733	2290	1870	2400	3130
7/9/2019		1890						3130
8/5/2019	2680							
9/1/2020	2730	2110	1830	680	2510	1760	2410	3150
9/2/2020		2110						3150
9/16/2020	2730							
5/25/2021	2470	1850	1770					
5/26/2021				744	2740	2030	2450	
9/7/2022			1760		2220	2000		
9/8/2022	2590	2000		1300 (o)			948	
9/5/2023	2410			762			2370	
9/6/2023		2200	1800		2230	2160		
4/17/2024	2320		1800	751	2200		2240	
4/18/2024		2140				2380		

Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)
9/5/2023	3700			1560			3280
9/6/2023		3240	2440		3750	3370	
4/17/2024	3700		2840	1780	4160		3080
4/18/2024		3140				3630	

Time Series

Constituent: Zinc (mg/L) Analysis Run 6/19/2024 2:37 PM View: Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	GypsumWest005	MW-10	MW-11	MW-12R	MW-13R	MW-26 (bg)
10/4/2016			<0.02	0.0556		0.0111	
8/10/2017			<0.02	0.0554	<0.02	0.0413	
9/26/2018			<0.02	0.0521	<0.02	0.0911 (o)	
7/8/2019			<0.02	<0.08	<0.02	<0.02	
9/1/2020			<0.02	0.0392	<0.02	0.0316	
5/25/2021			<0.02				
5/26/2021				0.055	<0.02	<0.02	
9/7/2022			<0.02		<0.02	0.029	
9/8/2022				0.82 (o)			
9/5/2023	<0.02			0.438 (o)			0.32
9/6/2023		0.131	<0.02		<0.02	<0.02	
4/17/2024	<0.02		<0.02	0.235	<0.02		0.25
4/18/2024		0.107				0.0233	

ND substitution: RL or RL/2 if <15% NDs.

Attachment B

Outliers

Outlier Summary

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill Printed 6/19/2024, 1:00 PM

	MW-8 Iron (mg/L)	MW-8 Manganese (mg/L)	MW-9 Manganese (mg/L)
7/8/2019		0.751 (o)	
9/6/2023	1.27 (o)		0.341 (o)

Outlier Summary Unit 02

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill Printed 6/19/2024, 2:39 PM

	MW-13R Cobalt (mg/L)	MW-13R Copper (mg/L)	FlyAshNorth#002 Iron (mg/L)	GypsumWest005 Iron (mg/L)	MW-13R Lead (mg/L)	MW-13R Manganese (mg/L)	MW-10 Sulfate (mg/L)	MW-11 Sulfate (mg/L)	MW-11 Zinc (mg/L)	MW-13R Zinc (mg/L)
10/4/2016	<0.0005 (o)			4.17 (o)		1.74 (o)				
8/10/2017			71.7 (o)	4.95 (o)			3600 (o)			
9/26/2018		0.0194 (o)			0.00989 (o)					0.0911 (o)
9/8/2022								1300 (o)	0.82 (o)	
9/5/2023									0.438 (o)	

Attachment C

Prediction Limits

Intrawell Prediction Limits Summary Table - 01 Wells - Significant Results

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill Printed 6/25/2024, 2:02 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Iron (mg/L)	**MW-9**	**0.175**	**n/a**	**4/18/2024**	**0.296**	**Yes**	**8**	**n/a**	**n/a**	**75**	**n/a**	**n/a**	**0.02144**	**NP Intra (NDs) 1 of 2**
Manganese (mg/L)	**MW-9**	**0.01**	**n/a**	**4/18/2024**	**0.233**	**Yes**	**7**	**n/a**	**n/a**	**100**	**n/a**	**n/a**	**0.02765**	**NP Intra (NDs) 1 of 2**
Zinc (mg/L)	**MW-9**	**0.02**	**n/a**	**4/18/2024**	**0.0232**	**Yes**	**8**	**n/a**	**n/a**	**100**	**n/a**	**n/a**	**0.02144**	**NP Intra (NDs) 1 of 2**

Intrawell Prediction Limits Summary Table - 01 Wells - All Results

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill Printed 6/25/2024, 2:02 PM

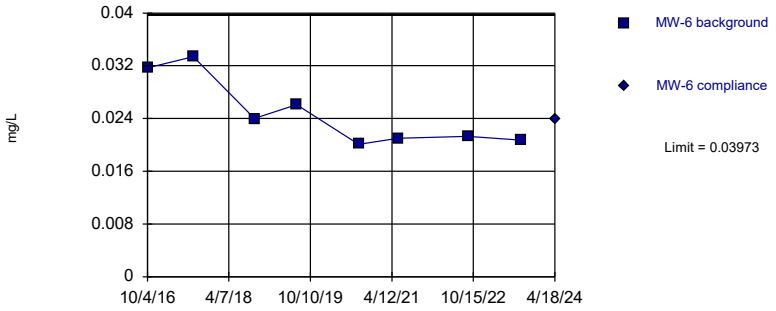
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Barium (mg/L)	MW-6	0.03973	n/a	4/18/2024	0.0239	No	8	-3.715	0.1991	0	None	ln(x)	0.002631	Param Intra 1 of 2
Barium (mg/L)	MW-8	0.05534	n/a	4/18/2024	0.0272	No	8	0.03765	0.007191	0	None	No	0.002631	Param Intra 1 of 2
Barium (mg/L)	MW-9	0.0313	n/a	4/18/2024	0.0311	No	8	n/a	n/a	0	n/a	n/a	0.02144	NP Intra (normality) 1 of 2
Cobalt (mg/L)	MW-8	0.00189	n/a	4/18/2024	0.0005ND	No	8	n/a	n/a	87.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Cobalt (mg/L)	MW-9	0.00138	n/a	4/18/2024	0.000904	No	8	n/a	n/a	87.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Iron (mg/L)	MW-6	1.186	n/a	4/18/2024	0.05ND	No	8	0.4878	0.3739	12.5	None	x^2	0.002631	Param Intra 1 of 2
Iron (mg/L)	MW-8	0.308	n/a	4/18/2024	0.1ND	No	7	n/a	n/a	57.14	n/a	n/a	0.02765	NP Intra (NDs) 1 of 2
Iron (mg/L)	**MW-9**	**0.175**	**n/a**	**4/18/2024**	**0.296**	**Yes**	**8**	**n/a**	**n/a**	**75**	**n/a**	**n/a**	**0.02144**	**NP Intra (NDs) 1 of 2**
Lead (mg/L)	MW-8	0.00111	n/a	4/18/2024	0.0005ND	No	8	n/a	n/a	87.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Magnesium (mg/L)	MW-6	31.7	n/a	4/18/2024	21.9	No	8	402799	246672	0	None	x^4	0.002631	Param Intra 1 of 2
Magnesium (mg/L)	MW-8	48.6	n/a	4/18/2024	43.5	No	8	41.05	3.071	0	None	No	0.002631	Param Intra 1 of 2
Magnesium (mg/L)	MW-9	78.96	n/a	4/18/2024	71.3	No	8	70.08	3.61	0	None	No	0.002631	Param Intra 1 of 2
Manganese (mg/L)	MW-6	0.2333	n/a	4/18/2024	0.0122	No	8	0.1127	0.049	0	None	No	0.002631	Param Intra 1 of 2
Manganese (mg/L)	MW-8	0.1333	n/a	4/18/2024	0.005ND	No	7	0.037	0.03585	14.29	None	No	0.002631	Param Intra 1 of 2
Manganese (mg/L)	**MW-9**	**0.01**	**n/a**	**4/18/2024**	**0.233**	**Yes**	**7**	**n/a**	**n/a**	**100**	**n/a**	**n/a**	**0.02765**	**NP Intra (NDs) 1 of 2**
pH (SU)	MW-6	8.447	6.002	4/18/2024	7.16	No	7	7.224	0.4554	0	None	No	0.001315	Param Intra 1 of 2
pH (SU)	MW-8	7.831	6.361	4/18/2024	6.99	No	7	7.096	0.2738	0	None	No	0.001315	Param Intra 1 of 2
pH (SU)	MW-9	7.714	6.213	4/18/2024	6.92	No	7	6.964	0.2794	0	None	No	0.001315	Param Intra 1 of 2
Selenium (mg/L)	MW-9	0.00721	n/a	4/18/2024	0.005ND	No	8	n/a	n/a	62.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Sulfate (mg/L)	MW-6	549.7	n/a	4/18/2024	368	No	8	388.5	65.55	0	None	No	0.002631	Param Intra 1 of 2
Sulfate (mg/L)	MW-8	337	n/a	4/18/2024	187	No	8	241.4	38.87	0	None	No	0.002631	Param Intra 1 of 2
Sulfate (mg/L)	MW-9	1358	n/a	4/18/2024	1190	No	8	1161	80.08	0	None	No	0.002631	Param Intra 1 of 2
Zinc (mg/L)	MW-8	0.0214	n/a	4/18/2024	0.02ND	No	8	n/a	n/a	87.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Zinc (mg/L)	**MW-9**	**0.02**	**n/a**	**4/18/2024**	**0.0232**	**Yes**	**8**	**n/a**	**n/a**	**100**	**n/a**	**n/a**	**0.02144**	**NP Intra (NDs) 1 of 2**

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on natural log transformation): Mean=-3.715, Std. Dev.=0.1991, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.854, critical = 0.851. Kappa = 2.46 (c=10, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.002631.

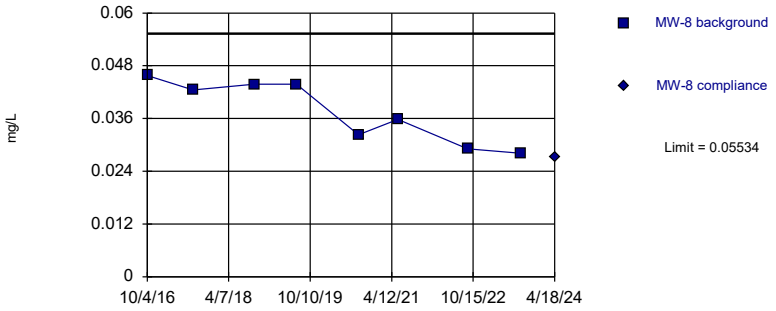
Constituent: Barium Analysis Run 6/25/2024 2:00 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.03765, Std. Dev.=0.007191, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8698, critical = 0.851. Kappa = 2.46 (c=10, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.002631.

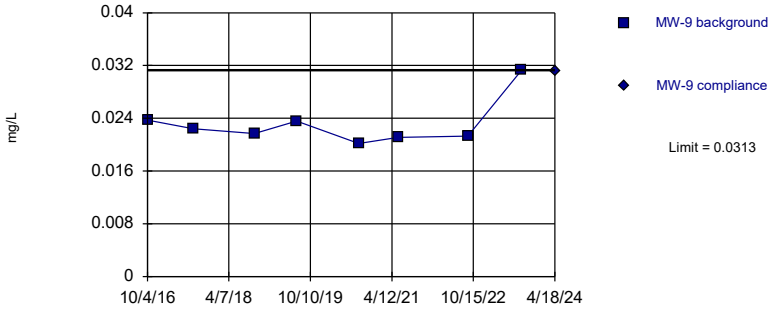
Constituent: Barium Analysis Run 6/25/2024 2:00 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.1 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

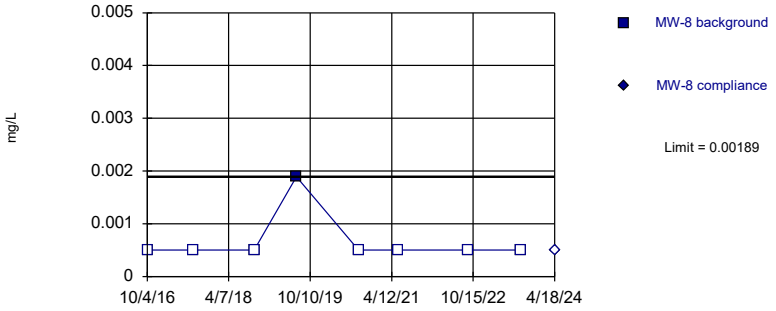
Constituent: Barium Analysis Run 6/25/2024 2:00 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Cobalt Analysis Run 6/25/2024 2:00 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6	MW-6
10/4/2016	0.0317	
8/10/2017	0.0334	
9/26/2018	0.024	
7/8/2019	0.0261	
9/1/2020	0.0201	
5/25/2021	0.021	
9/8/2022	0.0213	
9/6/2023	0.0207	
4/18/2024		0.0239

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-8	MW-8
10/4/2016	0.0458	
8/10/2017	0.0425	
9/26/2018	0.0438	
7/8/2019	0.0438	
9/1/2020	0.0323	
5/25/2021	0.0358	
9/8/2022	0.0291	
9/6/2023	0.0281	
4/18/2024		0.0272

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-9	MW-9
10/4/2016	0.0237	
8/10/2017	0.0224	
9/26/2018	0.0217	
7/8/2019	0.0236	
9/1/2020	0.0202	
5/25/2021	0.0211	
9/8/2022	0.0213	
9/6/2023	0.0313	
4/18/2024		0.0311

Prediction Limit

Constituent: Cobalt (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

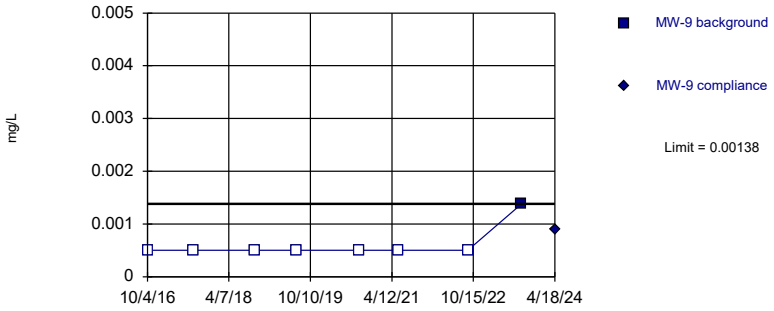
	MW-8	MW-8
10/4/2016	<0.0005	
8/10/2017	<0.0005	
9/26/2018	<0.0005	
7/8/2019	0.00189	
9/1/2020	<0.0005	
5/25/2021	<0.0005	
9/8/2022	<0.0005	
9/6/2023	<0.0005	
4/18/2024		<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Sanitas™ v.10.0.19c Software licensed to . UG
Hollow symbols indicate censored values.
Within Limit

Prediction Limit

Intrawell Non-parametric



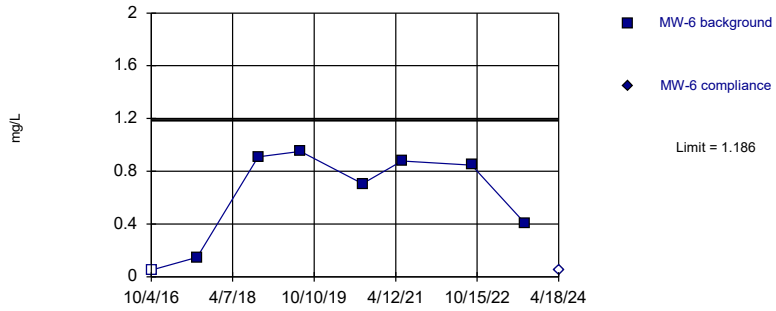
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Cobalt Analysis Run 6/25/2024 2:00 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG
Hollow symbols indicate censored values.
Within Limit

Prediction Limit

Intrawell Parametric



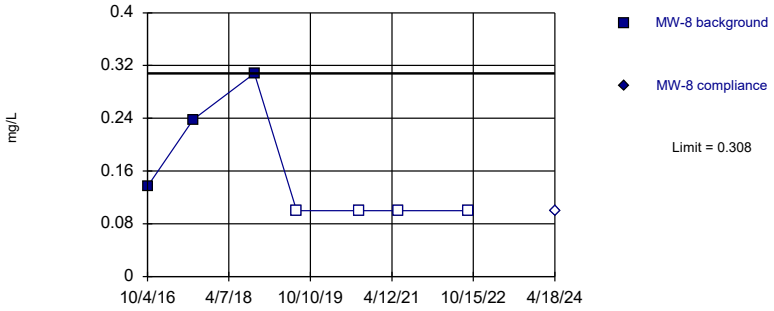
Background Data Summary (based on square transformation): Mean=0.4878, Std. Dev.=0.3739, n=8, 12.5% NDs. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8619, critical = 0.851. Kappa = 2.46 (c=10, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.002631.

Constituent: Iron Analysis Run 6/25/2024 2:00 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG
Hollow symbols indicate censored values.
Within Limit

Prediction Limit

Intrawell Non-parametric



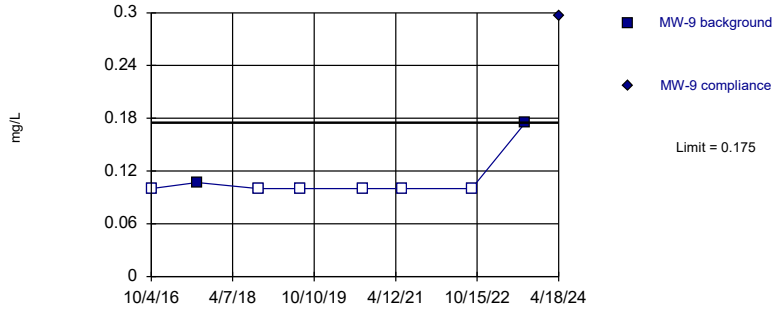
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 7 background values. 57.14% NDs. Well-constituent pair annual alpha = 0.05455. Individual comparison alpha = 0.02765 (1 of 2).

Constituent: Iron Analysis Run 6/25/2024 2:00 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG
Hollow symbols indicate censored values.
Exceeds Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Iron Analysis Run 6/25/2024 2:00 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Prediction Limit

Constituent: Cobalt (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-9	MW-9
10/4/2016	<0.0005	
8/10/2017	<0.0005	
9/26/2018	<0.0005	
7/8/2019	<0.0005	
9/1/2020	<0.0005	
5/25/2021	<0.0005	
9/8/2022	<0.0005	
9/6/2023	0.00138	
4/18/2024		0.000904

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6	MW-6
10/4/2016	<0.1	
8/10/2017	0.148	
9/26/2018	0.909	
7/8/2019	0.951	
9/1/2020	0.706	
5/25/2021	0.877	
9/8/2022	0.847	
9/6/2023	0.403	
4/18/2024		<0.1

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-8	MW-8
10/4/2016	0.137	
8/10/2017	0.238	
9/26/2018	0.308	
7/8/2019	<0.1	
9/1/2020	<0.1	
5/25/2021	<0.1	
9/8/2022	<0.1	
9/6/2023	1.27 (o)	
4/18/2024		<0.1

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-9	MW-9
10/4/2016	<0.1	
8/10/2017	0.107	
9/26/2018	<0.1	
7/8/2019	<0.1	
9/1/2020	<0.1	
5/25/2021	<0.1	
9/8/2022	<0.1	
9/6/2023	0.175	
4/18/2024		0.296

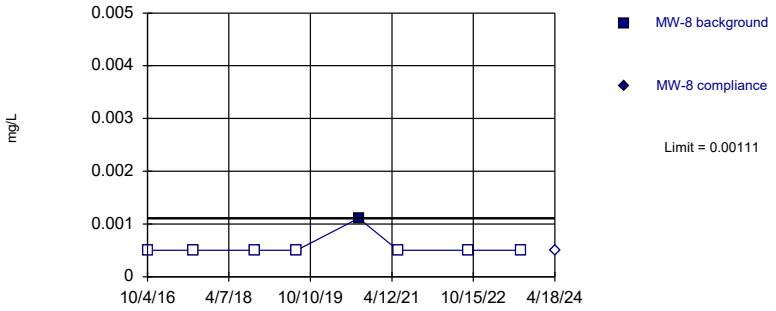
ND substitution: RL or RL/2 if <15% NDs.

Sanitas™ v.10.0.19c Software licensed to . UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

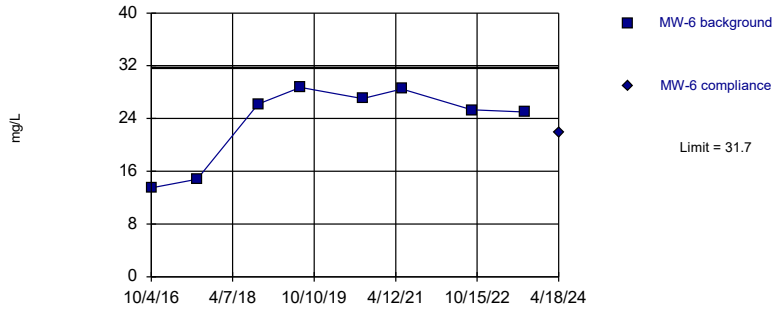
Constituent: Lead Analysis Run 6/25/2024 2:00 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on x^4 transformation): Mean=402799, Std. Dev.=246672, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8795, critical = 0.851. Kappa = 2.46 (c=10, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.002631.

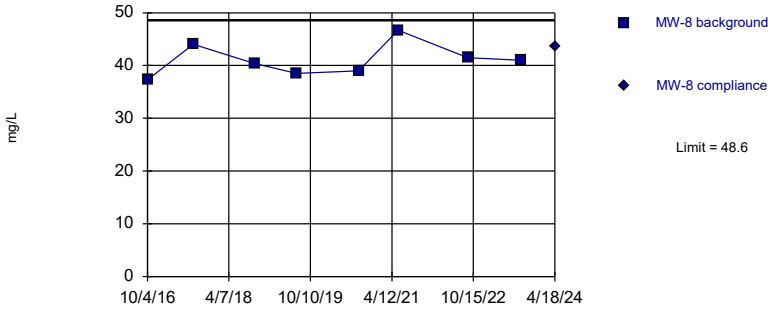
Constituent: Magnesium Analysis Run 6/25/2024 2:00 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=41.05, Std. Dev.=3.071, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.945, critical = 0.851. Kappa = 2.46 (c=10, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.002631.

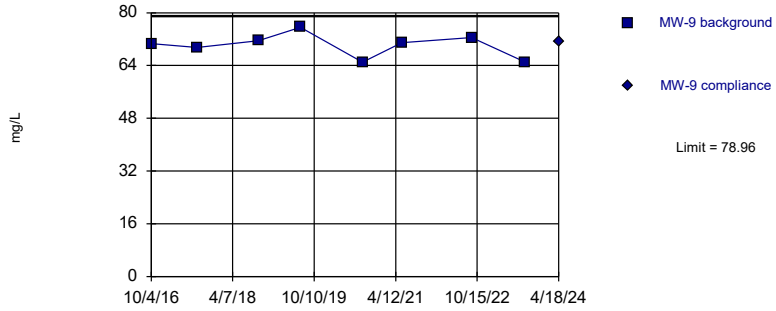
Constituent: Magnesium Analysis Run 6/25/2024 2:00 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=70.08, Std. Dev.=3.61, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9184, critical = 0.851. Kappa = 2.46 (c=10, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.002631.

Constituent: Magnesium Analysis Run 6/25/2024 2:00 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Prediction Limit

Constituent: Lead (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-8	MW-8
10/4/2016	<0.0005	
8/10/2017	<0.0005	
9/26/2018	<0.0005	
7/8/2019	<0.0005	
9/1/2020	0.00111	
5/25/2021	<0.0005	
9/8/2022	<0.0005	
9/6/2023	<0.0005	
4/18/2024		<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6	MW-6
10/4/2016	13.5	
8/10/2017	14.8	
9/26/2018	26.2	
7/8/2019	28.7	
9/1/2020	27	
5/25/2021	28.5	
9/8/2022	25.3	
9/6/2023	25	
4/18/2024		21.9

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-8	MW-8
10/4/2016	37.3	
8/10/2017	44	
9/26/2018	40.4	
7/8/2019	38.5	
9/1/2020	39	
5/25/2021	46.7	
9/8/2022	41.5	
9/6/2023	41	
4/18/2024		43.5

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

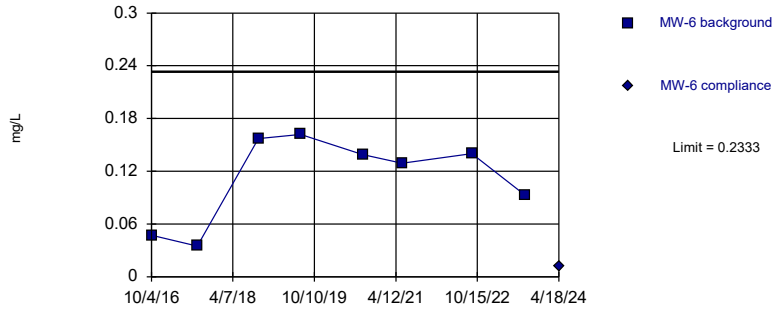
	MW-9	MW-9
10/4/2016	70.6	
8/10/2017	69.5	
9/26/2018	71.5	
7/8/2019	75.6	
9/1/2020	65	
5/25/2021	70.9	
9/8/2022	72.5	
9/6/2023	65	
4/18/2024		71.3

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.1127, Std. Dev.=0.049, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8623, critical = 0.851. Kappa = 2.46 (c=10, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.002631.

Constituent: Manganese Analysis Run 6/25/2024 2:00 PM View: Unit 01 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

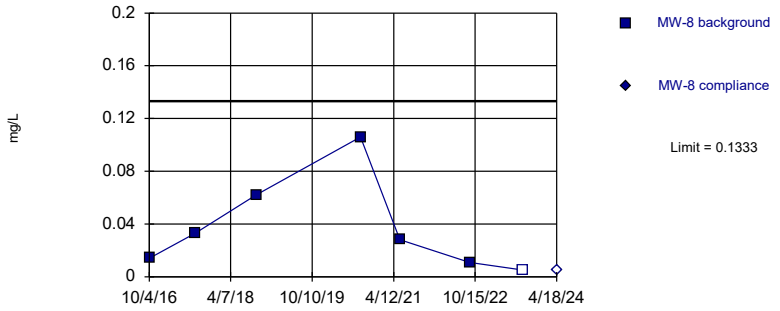
Sanitas™ v.10.0.19c Software licensed to . UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.037, Std. Dev.=0.03585, n=7, 14.29% NDs. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8523, critical = 0.838. Kappa = 2.685 (c=10, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.002631.

Constituent: Manganese Analysis Run 6/25/2024 2:00 PM View: Unit 01 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

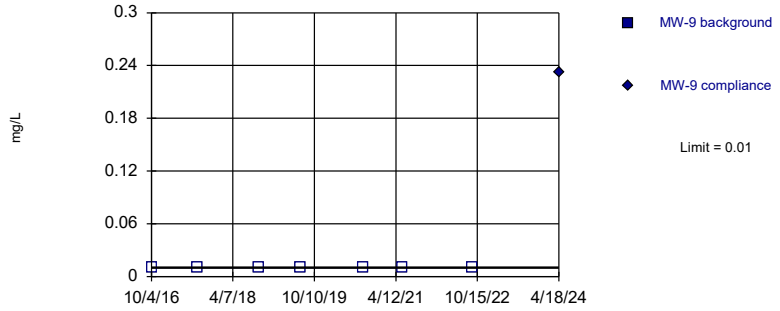
Sanitas™ v.10.0.19c Software licensed to . UG

Hollow symbols indicate censored values.

Exceeds Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 7) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.05455. Individual comparison alpha = 0.02765 (1 of 2).

Constituent: Manganese Analysis Run 6/25/2024 2:00 PM View: Unit 01 Prediction Limits

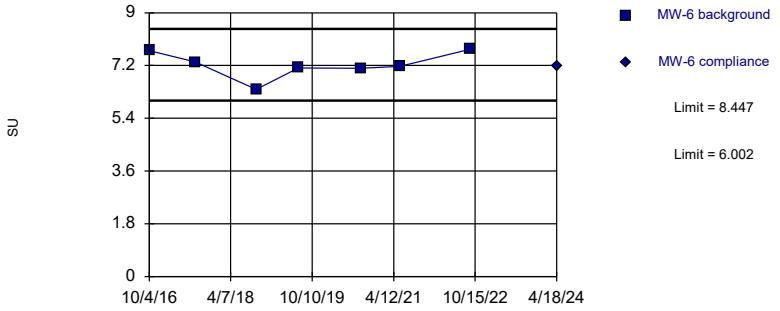
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.224, Std. Dev.=0.4554, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8988, critical = 0.838. Kappa = 2.685 (c=10, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.002631.

Constituent: pH Analysis Run 6/25/2024 2:00 PM View: Unit 01 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Prediction Limit

Constituent: Manganese (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-6	MW-6
10/4/2016	0.0474	
8/10/2017	0.035	
9/26/2018	0.157	
7/8/2019	0.162	
9/1/2020	0.139	
5/25/2021	0.129	
9/8/2022	0.14	
9/6/2023	0.0924	
4/18/2024		0.0122

Prediction Limit

Constituent: Manganese (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-8	MW-8
10/4/2016	0.014	
8/10/2017	0.033	
9/26/2018	0.062	
7/8/2019	0.751 (o)	
9/1/2020	0.106	
5/25/2021	0.028	
9/8/2022	0.011	
9/6/2023	<0.01	
4/18/2024		<0.01

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Manganese (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-9	MW-9
10/4/2016	<0.01	
8/10/2017	<0.01	
9/26/2018	<0.01	
7/8/2019	<0.01	
9/1/2020	<0.01	
5/25/2021	<0.01	
9/8/2022	<0.01	
9/6/2023	0.341 (o)	
4/18/2024		0.233

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: pH (SU) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

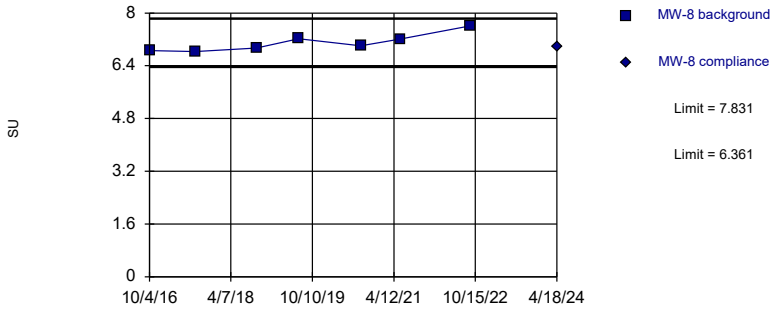
	MW-6	MW-6
10/4/2016	7.71	
8/10/2017	7.32	
9/26/2018	6.39	
7/8/2019	7.12	
9/1/2020	7.11	
5/25/2021	7.17 (D)	
9/8/2022	7.75	
4/18/2024		7.16

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.096, Std. Dev.=0.2738, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8895, critical = 0.838. Kappa = 2.685 (c=10, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.002631.

Constituent: pH Analysis Run 6/25/2024 2:01 PM View: Unit 01 Prediction Limits

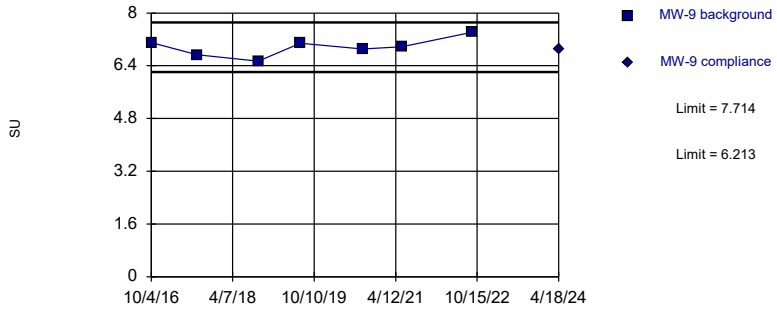
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=6.964, Std. Dev.=0.2794, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.982, critical = 0.838. Kappa = 2.685 (c=10, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.002631.

Constituent: pH Analysis Run 6/25/2024 2:01 PM View: Unit 01 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

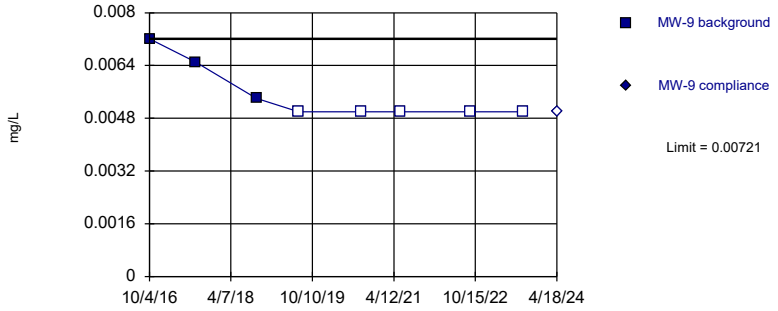
Sanitas™ v.10.0.19c Software licensed to . UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 62.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Selenium Analysis Run 6/25/2024 2:01 PM View: Unit 01 Prediction Limits

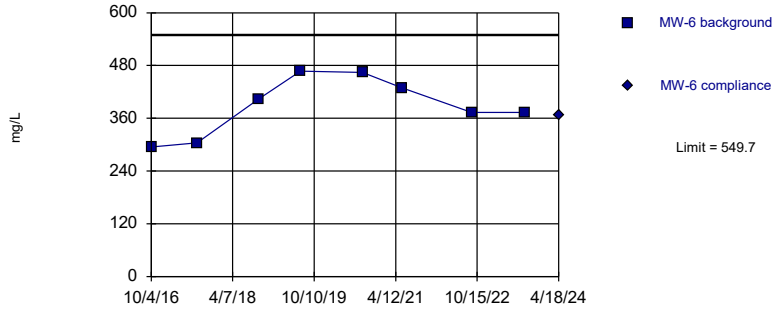
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=388.5, Std. Dev.=65.55, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.918, critical = 0.851. Kappa = 2.46 (c=10, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.002631.

Constituent: Sulfate Analysis Run 6/25/2024 2:01 PM View: Unit 01 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Prediction Limit

Constituent: pH (SU) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-8	MW-8
10/4/2016	6.86	
8/10/2017	6.83	
9/26/2018	6.94	
7/8/2019	7.22	
9/1/2020	7.01	
5/25/2021	7.205 (D)	
9/8/2022	7.61	
4/18/2024		6.99

Prediction Limit

Constituent: pH (SU) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-9	MW-9
10/4/2016	7.1	
8/10/2017	6.73	
9/26/2018	6.54	
7/8/2019	7.08	
9/1/2020	6.91	
5/25/2021	6.975 (D)	
9/8/2022	7.41	
4/18/2024		6.92

Prediction Limit

Constituent: Selenium (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-9	MW-9
10/4/2016	0.00721	
8/10/2017	0.00651	
9/26/2018	0.0054	
7/8/2019	<0.005	
9/1/2020	<0.005	
5/25/2021	<0.005	
9/8/2022	<0.005	
9/6/2023	<0.005	
4/18/2024		<0.005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

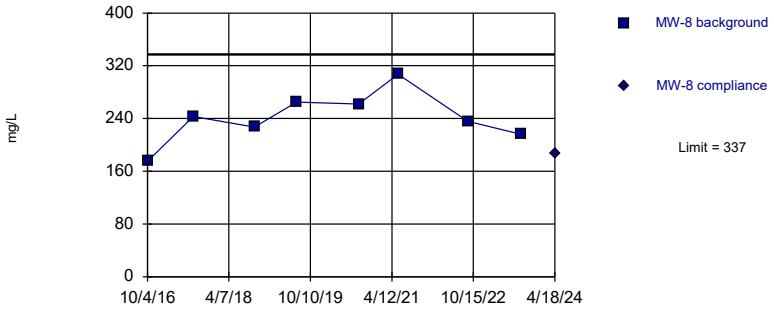
	MW-6	MW-6
10/4/2016	295	
8/10/2017	304	
9/26/2018	403	
7/8/2019	467	
9/1/2020	464	
5/25/2021	429	
9/8/2022	373	
9/6/2023	373	
4/18/2024		368

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=241.4, Std. Dev.=38.87, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9813, critical = 0.851. Kappa = 2.46 (c=10, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.002631.

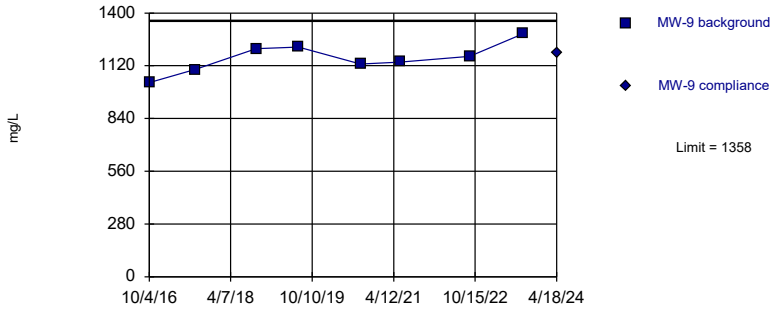
Constituent: Sulfate Analysis Run 6/25/2024 2:01 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1161, Std. Dev.=80.08, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9913, critical = 0.851. Kappa = 2.46 (c=10, w=2, 1 of 2, event alpha = 0.05132). Report alpha = 0.002631.

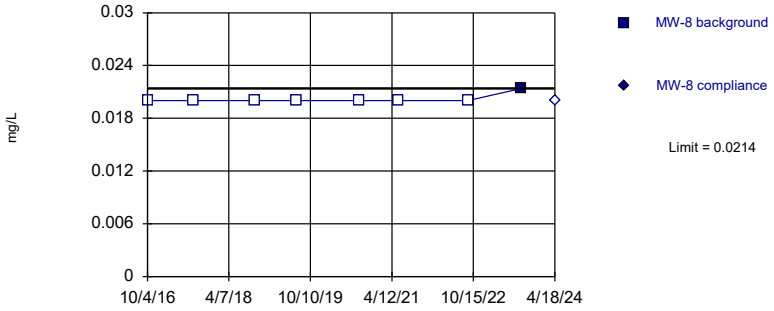
Constituent: Sulfate Analysis Run 6/25/2024 2:01 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

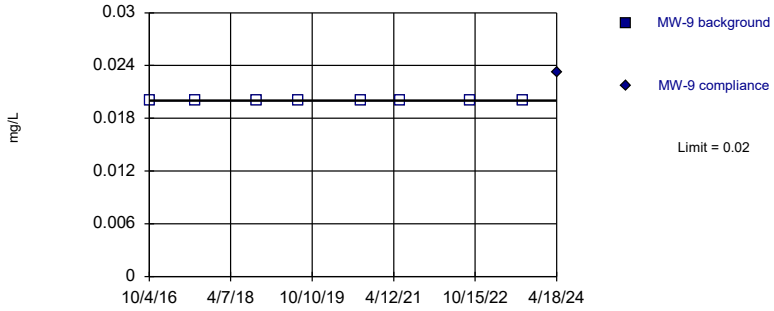
Constituent: Zinc Analysis Run 6/25/2024 2:01 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG
Hollow symbols indicate censored values.

Exceeds Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Zinc Analysis Run 6/25/2024 2:01 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-8	MW-8
10/4/2016	175	
8/10/2017	243	
9/26/2018	227	
7/8/2019	265	
9/1/2020	262	
5/25/2021	307	
9/8/2022	236	
9/6/2023	216	
4/18/2024		187

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-9	MW-9
10/4/2016	1030	
8/10/2017	1100	
9/26/2018	1210	
7/8/2019	1220	
9/1/2020	1130	
5/25/2021	1140	
9/8/2022	1170	
9/6/2023	1290	
4/18/2024		1190

Prediction Limit

Constituent: Zinc (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-8	MW-8
10/4/2016	<0.02	
8/10/2017	<0.02	
9/26/2018	<0.02	
7/8/2019	<0.02	
9/1/2020	<0.02	
5/25/2021	<0.02	
9/8/2022	<0.02	
9/6/2023	0.0214	
4/18/2024		<0.02

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Zinc (mg/L) Analysis Run 6/25/2024 2:02 PM View: Unit 01 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-9	MW-9
10/4/2016	<0.02	
8/10/2017	<0.02	
9/26/2018	<0.02	
7/8/2019	<0.02	
9/1/2020	<0.02	
5/25/2021	<0.02	
9/8/2022	<0.02	
9/6/2023	<0.02	
4/18/2024		0.0232

ND substitution: RL or RL/2 if <15% NDs.

Intrawell Prediction Limits Summary Table - 02 Wells - Significant Results

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill Printed 6/25/2024, 2:09 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Chloride (mg/L)	**MW-10**	**5.18**	**n/a**	**4/17/2024**	**6.76**	**Yes**	**8**	**n/a**	**n/a**	**87.5**	**n/a**	**n/a**	**0.02144**	**NP Intra (NDs) 1 of 2**
Chloride (mg/L)	**MW-13R**	**24.53**	**n/a**	**4/18/2024**	**28**	**Yes**	**8**	**10.2**	**4.464**	**12.5**	**None**	**No**	**0.0006839**	**Param Intra 1 of 2**
Zinc (mg/L)	**MW-11**	**0.0556**	**n/a**	**4/17/2024**	**0.235**	**Yes**	**6**	**n/a**	**n/a**	**16.67**	**n/a**	**n/a**	**0.03391**	**NP Intra (normality) 1 of 2**

Intrawell Prediction Limits Summary Table - 02 Wells - All Results

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill Printed 6/25/2024, 2:09 PM

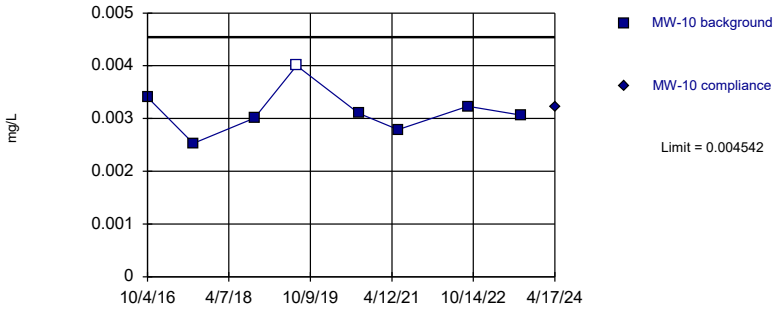
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	MW-10	0.004542	n/a	4/17/2024	0.00322	No	8	0.00314	0.0004367	12.5	None	No	0.0006839	Param Intra 1 of 2
Arsenic (mg/L)	MW-11	0.0035	n/a	4/17/2024	0.002ND	No	8	n/a	n/a	62.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	MW-13R	0.00825	n/a	4/18/2024	0.002ND	No	8	n/a	n/a	50	n/a	n/a	0.02144	NP Intra (normality) 1 of 2
Barium (mg/L)	MW-10	0.0178	n/a	4/17/2024	0.0148	No	8	0.015	0.0008734	0	None	No	0.0006839	Param Intra 1 of 2
Barium (mg/L)	MW-11	0.0489	n/a	4/17/2024	0.0306	No	8	n/a	n/a	0	n/a	n/a	0.02144	NP Intra (normality) 1 of 2
Barium (mg/L)	MW-12R	0.0313	n/a	4/17/2024	0.0153	No	7	n/a	n/a	0	n/a	n/a	0.02765	NP Intra (normality) 1 of 2
Barium (mg/L)	MW-13R	0.08581	n/a	4/18/2024	0.0202	No	8	0.02868	0.0178	0	None	No	0.0006839	Param Intra 1 of 2
Chloride (mg/L)	**MW-10**	**5.18**	**n/a**	**4/17/2024**	**6.76**	**Yes**	**8**	**n/a**	**n/a**	**87.5**	**n/a**	**n/a**	**0.02144**	**NP Intra (NDs) 1 of 2**
Chloride (mg/L)	MW-11	14	n/a	4/17/2024	6.56	No	8	6.176	2.439	12.5	None	No	0.0006839	Param Intra 1 of 2
Chloride (mg/L)	MW-12R	9.829	n/a	4/17/2024	7.57	No	7	7.283	0.7058	0	None	No	0.0006839	Param Intra 1 of 2
Chloride (mg/L)	**MW-13R**	**24.53**	**n/a**	**4/18/2024**	**28**	**Yes**	**8**	**10.2**	**4.464**	**12.5**	**None**	**No**	**0.0006839**	**Param Intra 1 of 2**
Cobalt (mg/L)	MW-10	0.02012	n/a	4/17/2024	0.0189	No	8	0.01848	0.000512	0	None	No	0.0006839	Param Intra 1 of 2
Cobalt (mg/L)	MW-11	0.06036	n/a	4/17/2024	0.0441	No	8	0.03759	0.007093	0	None	No	0.0006839	Param Intra 1 of 2
Cobalt (mg/L)	MW-12R	0.01073	n/a	4/17/2024	0.0034	No	7	0.005467	0.00146	0	None	No	0.0006839	Param Intra 1 of 2
Cobalt (mg/L)	MW-13R	0.08521	n/a	4/18/2024	0.0322	No	7	0.05656	0.007944	0	None	No	0.0006839	Param Intra 1 of 2
Iron (mg/L)	FlyAshNorth#002	22.75	n/a	4/17/2024	5.84	No	10	9.912	4.504	0	None	No	0.0006839	Param Intra 1 of 2
Iron (mg/L)	GypsumWest005	88.81	n/a	4/18/2024	77.1	No	8	55.66	10.33	0	None	No	0.0006839	Param Intra 1 of 2
Iron (mg/L)	MW-10	6.02	n/a	4/17/2024	5.83	No	8	n/a	n/a	0	n/a	n/a	0.02144	NP Intra (normality) 1 of 2
Iron (mg/L)	MW-11	57.38	n/a	4/17/2024	16.9	No	8	18.77	12.03	0	None	No	0.0006839	Param Intra 1 of 2
Iron (mg/L)	MW-12R	6.339	n/a	4/17/2024	3.6	No	7	4.063	0.6309	0	None	No	0.0006839	Param Intra 1 of 2
Iron (mg/L)	MW-13R	18.73	n/a	4/18/2024	1.05	No	8	7.784	3.411	0	None	No	0.0006839	Param Intra 1 of 2
Iron (mg/L)	MW-26	4.494	n/a	4/17/2024	0.111	No	8	0.7727	0.4197	25	Kaplan-Meier	sqrt(x)	0.0006839	Param Intra 1 of 2
Lead (mg/L)	MW-12R	0.000708	n/a	4/17/2024	0.0005ND	No	7	n/a	n/a	71.43	n/a	n/a	0.02765	NP Intra (NDs) 1 of 2
Lead (mg/L)	MW-13R	0.008931	n/a	4/18/2024	0.0005ND	No	7	0.03756	0.01579	42.86	Kaplan-Meier	sqrt(x)	0.0006839	Param Intra 1 of 2
Magnesium (mg/L)	FlyAshNorth#002	454.9	n/a	4/17/2024	344	No	11	311.8	52.05	0	None	No	0.0006839	Param Intra 1 of 2
Magnesium (mg/L)	GypsumWest005	296.3	n/a	4/18/2024	249	No	10	216.1	28.12	0	None	No	0.0006839	Param Intra 1 of 2
Magnesium (mg/L)	MW-10	224.4	n/a	4/17/2024	186	No	8	194	9.457	0	None	No	0.0006839	Param Intra 1 of 2
Magnesium (mg/L)	MW-11	158	n/a	4/17/2024	109	No	8	n/a	n/a	0	n/a	n/a	0.02144	NP Intra (normality) 1 of 2
Magnesium (mg/L)	MW-12R	293	n/a	4/17/2024	194	No	7	n/a	n/a	0	n/a	n/a	0.02765	NP Intra (normality) 1 of 2
Magnesium (mg/L)	MW-13R	321.9	n/a	4/18/2024	294	No	8	207.3	35.71	0	None	No	0.0006839	Param Intra 1 of 2
Magnesium (mg/L)	MW-26	445	n/a	4/17/2024	307	No	8	282.6	50.6	0	None	No	0.0006839	Param Intra 1 of 2
Manganese (mg/L)	FlyAshNorth#002	15.86	n/a	4/17/2024	2.92	No	11	2.267	0.6242	0	None	sqrt(x)	0.0006839	Param Intra 1 of 2
Manganese (mg/L)	GypsumWest005	22.84	n/a	4/18/2024	15	No	10	9.545	4.662	0	None	No	0.0006839	Param Intra 1 of 2
Manganese (mg/L)	MW-10	9.169	n/a	4/17/2024	6.86	No	8	7.163	0.6252	0	None	No	0.0006839	Param Intra 1 of 2
Manganese (mg/L)	MW-11	10.1	n/a	4/17/2024	7.17	No	8	6.495	1.124	0	None	No	0.0006839	Param Intra 1 of 2
Manganese (mg/L)	MW-12R	2.496	n/a	4/17/2024	0.771	No	7	0.01037	0.2507	0	None	ln(x)	0.0006839	Param Intra 1 of 2
Manganese (mg/L)	MW-13R	24.41	n/a	4/18/2024	8.5	No	7	17.53	1.907	0	None	No	0.0006839	Param Intra 1 of 2
Manganese (mg/L)	MW-26	70.59	n/a	4/17/2024	38.8	No	8	31.55	12.16	0	None	No	0.0006839	Param Intra 1 of 2
pH (SU)	FlyAshNorth#002	7.443	6.08	4/17/2024	6.66	No	11	6.762	0.248	0	None	No	0.000342	Param Intra 1 of 2
pH (SU)	GypsumWest005	7.187	5.829	4/18/2024	6.39	No	10	6.508	0.2383	0	None	No	0.000342	Param Intra 1 of 2
pH (SU)	MW-10	7.423	5.51	4/17/2024	6.5	No	7	6.466	0.2653	0	None	No	0.000342	Param Intra 1 of 2
pH (SU)	MW-11	6.624	5.666	4/17/2024	6.3	No	7	6.145	0.1329	0	None	No	0.000342	Param Intra 1 of 2
pH (SU)	MW-12R	7.386	5.33	4/17/2024	6.38	No	6	6.358	0.2567	0	None	No	0.000342	Param Intra 1 of 2
pH (SU)	MW-13R	7.451	5.469	4/18/2024	6.46	No	7	6.46	0.2748	0	None	No	0.000342	Param Intra 1 of 2
pH (SU)	MW-26	7.077	2.983	4/17/2024	5.09	No	7	5.03	0.5675	0	None	No	0.000342	Param Intra 1 of 2
Sulfate (mg/L)	FlyAshNorth#002	3035	n/a	4/17/2024	2320	No	11	2522	186.6	0	None	No	0.0006839	Param Intra 1 of 2
Sulfate (mg/L)	GypsumWest005	2370	n/a	4/18/2024	2140	No	10	1971	140	0	None	No	0.0006839	Param Intra 1 of 2
Sulfate (mg/L)	MW-10	2051	n/a	4/17/2024	1800	No	7	1814	65.54	0	None	No	0.0006839	Param Intra 1 of 2
Sulfate (mg/L)	MW-11	891.6	n/a	4/17/2024	751	No	7	735	43.41	0	None	No	0.0006839	Param Intra 1 of 2
Sulfate (mg/L)	MW-12R	2740	n/a	4/17/2024	2200	No	7	n/a	n/a	0	n/a	n/a	0.02765	NP Intra (normality) 1 of 2
Sulfate (mg/L)	MW-13R	2825	n/a	4/18/2024	2380	No	8	1893	290.4	0	None	No	0.0006839	Param Intra 1 of 2
Sulfate (mg/L)	MW-26	3182	n/a	4/17/2024	2240	No	8	4423913	1776559	0	None	x^2	0.0006839	Param Intra 1 of 2
Zinc (mg/L)	**MW-11**	**0.0556**	**n/a**	**4/17/2024**	**0.235**	**Yes**	**6**	**n/a**	**n/a**	**16.67**	**n/a**	**n/a**	**0.03391**	**NP Intra (normality) 1 of 2**
Zinc (mg/L)	MW-13R	0.06359	n/a	4/18/2024	0.0233	No	7	0.0209	0.01183	42.86	Kaplan-Meier	No	0.0006839	Param Intra 1 of 2

Sanitas™ v.10.0.19c Software licensed to . UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.00314, Std. Dev.=0.0004367, n=8, 12.5% NDs. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9452, critical = 0.851. Kappa = 3.21 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

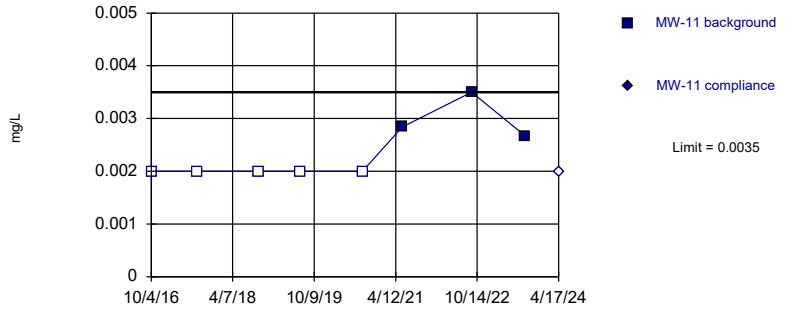
Constituent: Arsenic Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 62.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

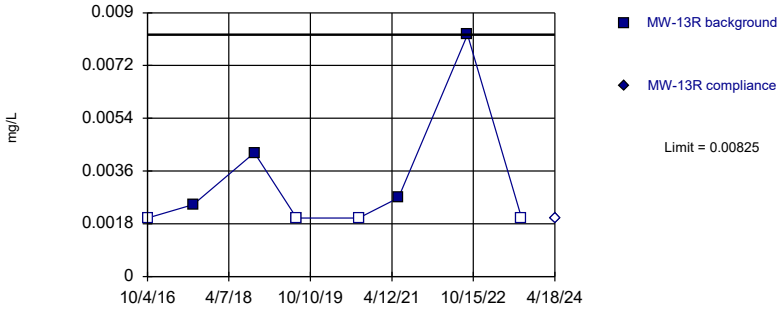
Constituent: Arsenic Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.1 alpha level. Limit is highest of 8 background values. 50% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

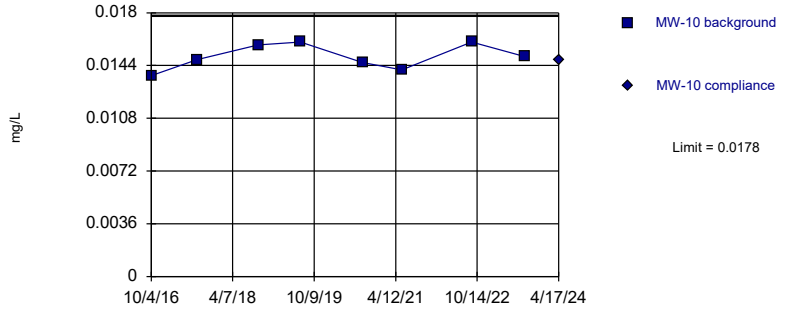
Constituent: Arsenic Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.015, Std. Dev.=0.0008734, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9175, critical = 0.851. Kappa = 3.21 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

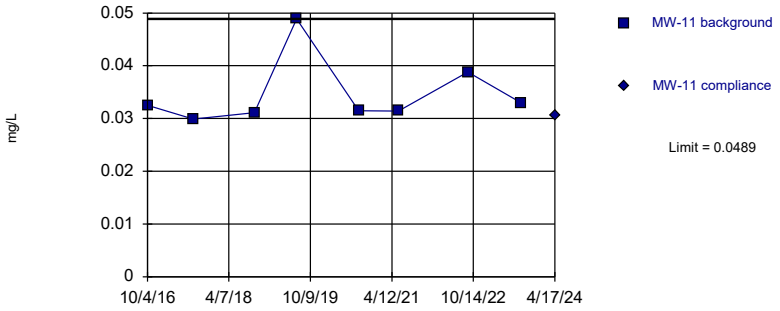
Constituent: Barium Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.1 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

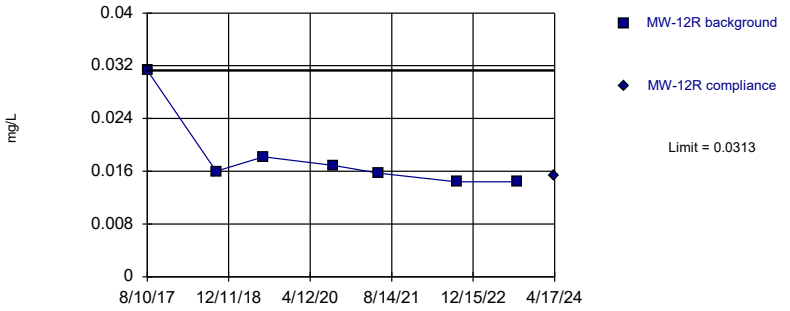
Constituent: Barium Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.1 alpha level. Limit is highest of 7 background values. Well-constituent pair annual alpha = 0.05455. Individual comparison alpha = 0.02765 (1 of 2).

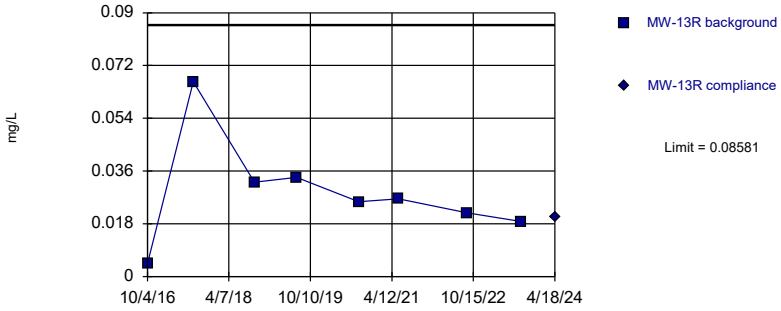
Constituent: Barium Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.02868, Std. Dev.=0.0178, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8805, critical = 0.851. Kappa = 3.21 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

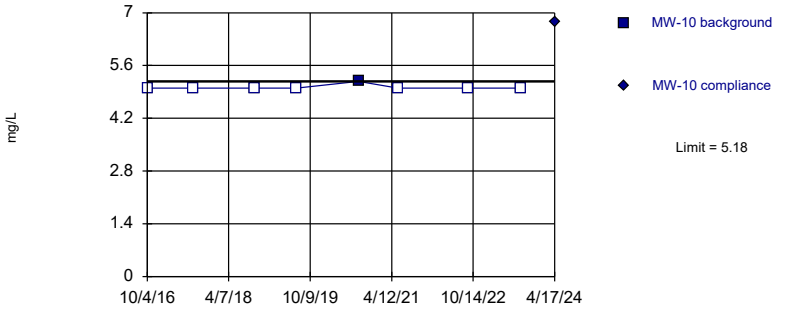
Constituent: Barium Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG
Hollow symbols indicate censored values.

Exceeds Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

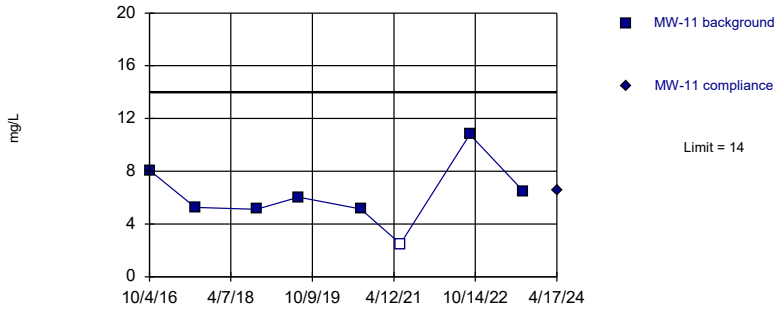
Constituent: Chloride Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=6.176, Std. Dev.=2.439, n=8, 12.5% NDs. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9331, critical = 0.851. Kappa = 3.21 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Chloride Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

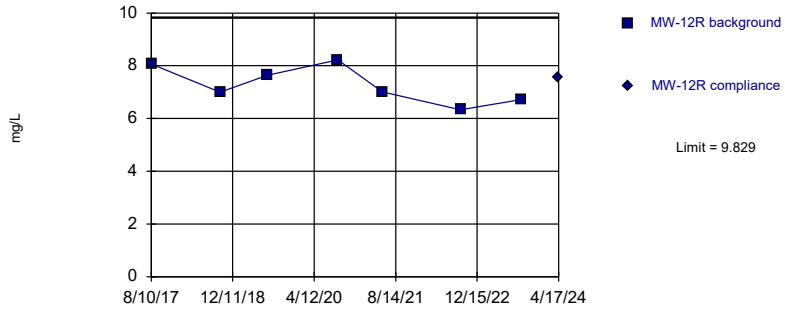
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.283, Std. Dev.=0.7058, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9374, critical = 0.838. Kappa = 3.607 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Chloride Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

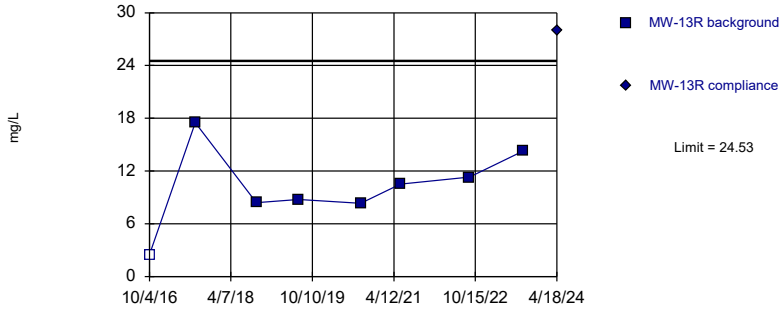
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG
Hollow symbols indicate censored values.

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=10.2, Std. Dev.=4.464, n=8, 12.5% NDs. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9595, critical = 0.851. Kappa = 3.21 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Chloride Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

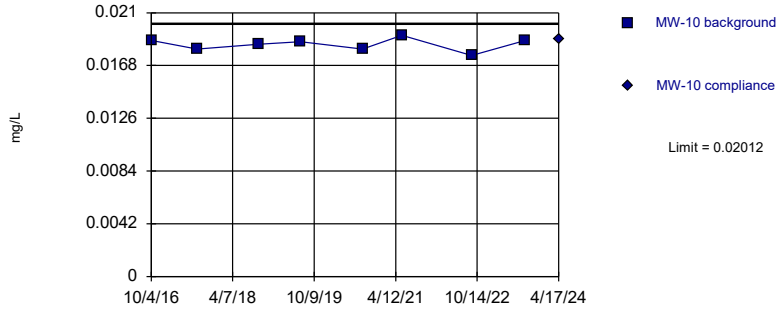
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.01848, Std. Dev.=0.000512, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9539, critical = 0.851. Kappa = 3.21 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Cobalt Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

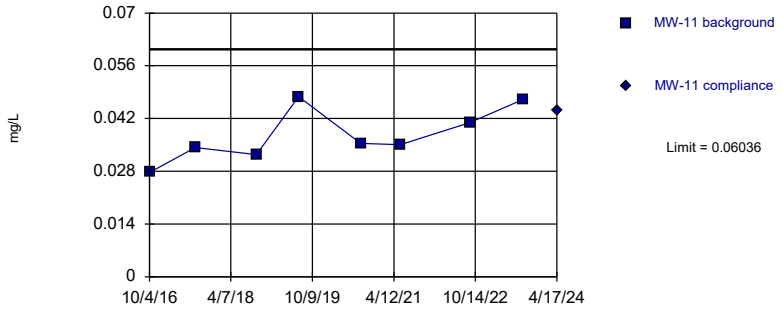
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.03759, Std. Dev.=0.007093, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9182, critical = 0.851. Kappa = 3.21 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

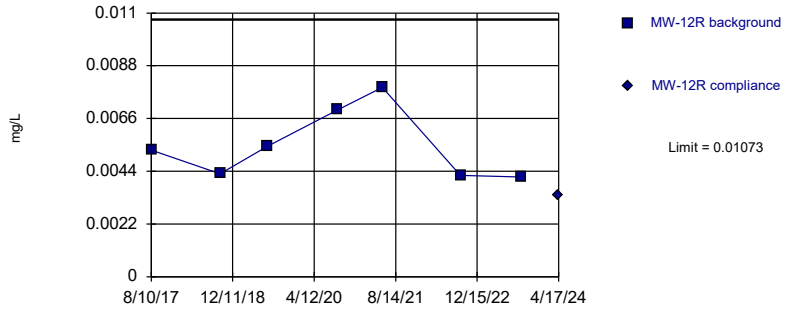
Constituent: Cobalt Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.005467, Std. Dev.=0.00146, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8613, critical = 0.838. Kappa = 3.607 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

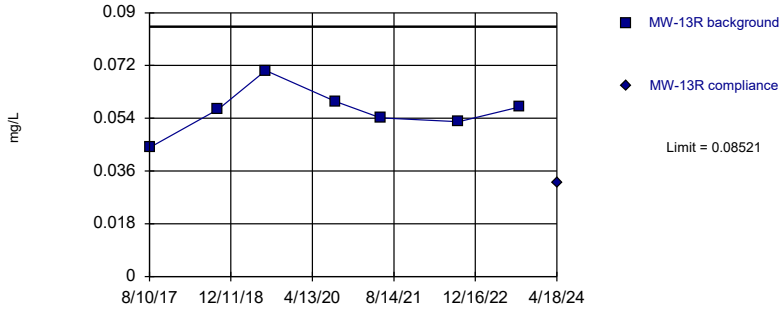
Constituent: Cobalt Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.05656, Std. Dev.=0.007944, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.955, critical = 0.838. Kappa = 3.607 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

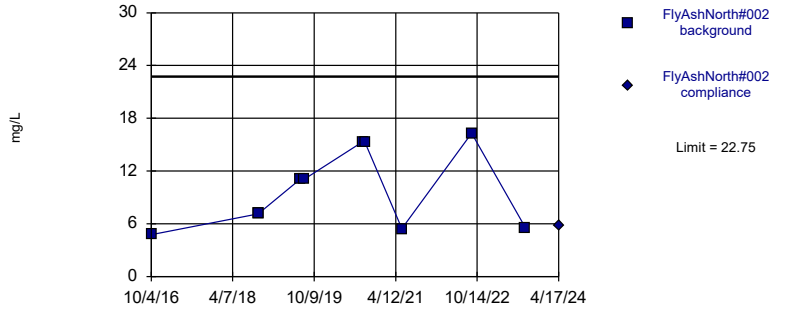
Constituent: Cobalt Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=9.912, Std. Dev.=4.504, n=10. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8688, critical = 0.842. Kappa = 2.851 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

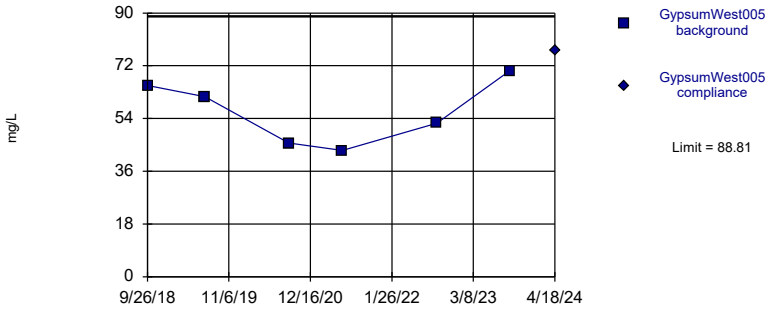
Constituent: Iron Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=55.66, Std. Dev.=10.33, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9042, critical = 0.851. Kappa = 3.21 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Iron Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

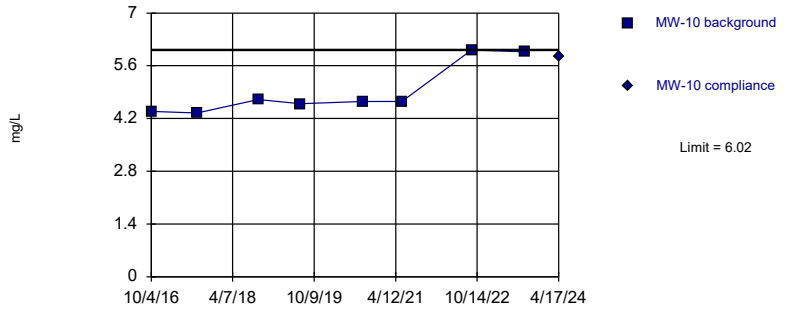
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.1 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Iron Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

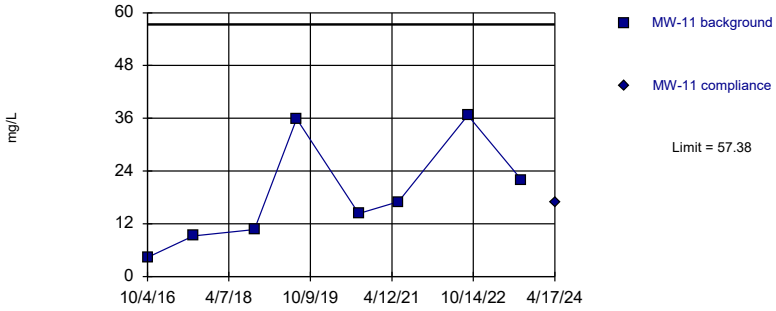
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=18.77, Std. Dev.=12.03, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8972, critical = 0.851. Kappa = 3.21 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Iron Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

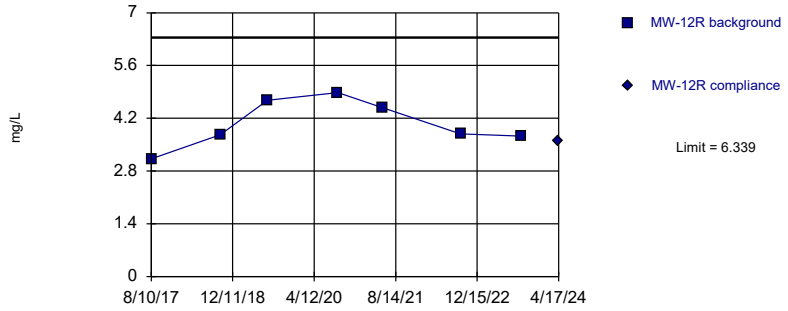
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=4.063, Std. Dev.=0.6309, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9243, critical = 0.838. Kappa = 3.607 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Iron Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

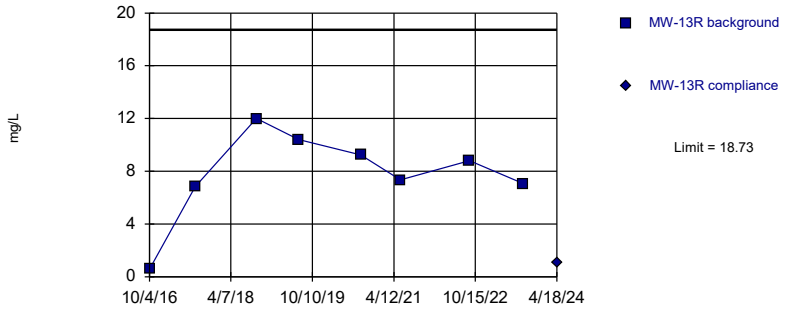
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.784, Std. Dev.=3.411, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8881, critical = 0.851. Kappa = 3.21 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Iron Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

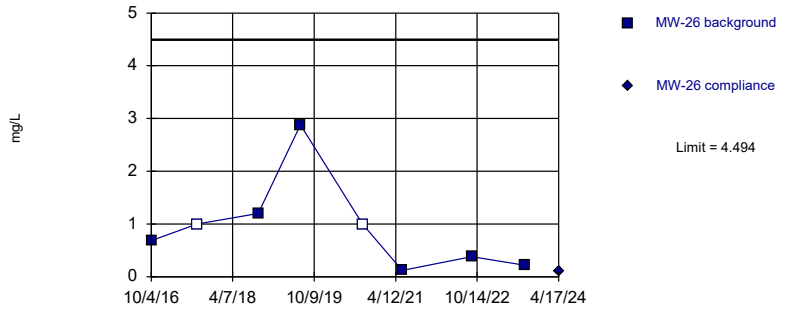
Sanitas™ v.10.0.19c Software licensed to . UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation) (after Kaplan-Meier Adjustment): Mean=0.7727, Std. Dev.=0.4197, n=8, 25% NDs. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9388, critical = 0.851. Kappa = 3.21 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Iron Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

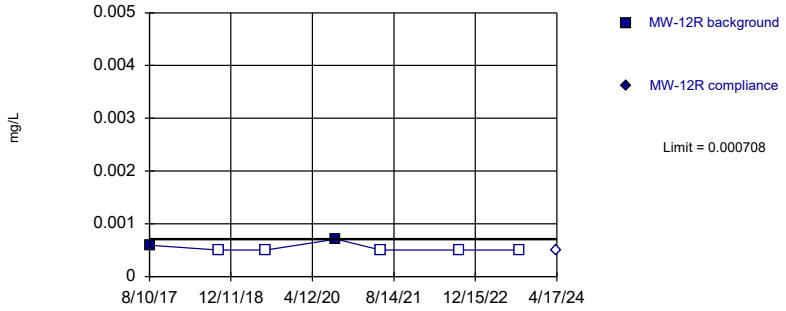
Sanitas™ v.10.0.19c Software licensed to . UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 7 background values. 71.43% NDs. Well-constituent pair annual alpha = 0.05455. Individual comparison alpha = 0.02765 (1 of 2).

Constituent: Lead Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

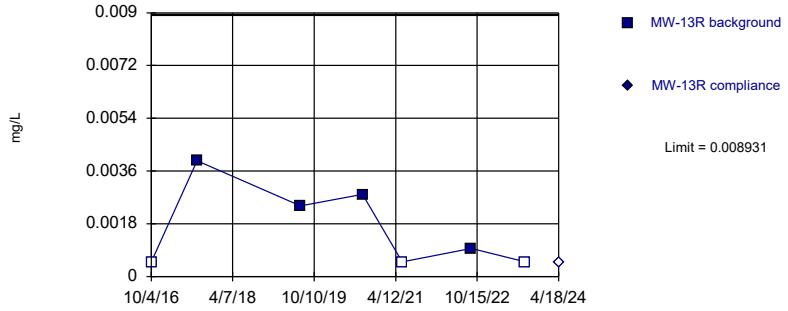
Sanitas™ v.10.0.19c Software licensed to . UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation) (after Kaplan-Meier Adjustment): Mean=0.03756, Std. Dev.=0.01579, n=7, 42.86% NDs. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8383, critical = 0.838. Kappa = 3.607 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Lead Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

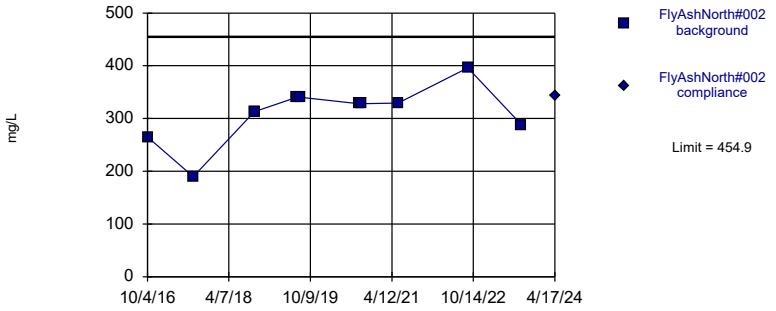
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=311.8, Std. Dev.=52.05, n=11. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8904, critical = 0.85. Kappa = 2.749 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Magnesium Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

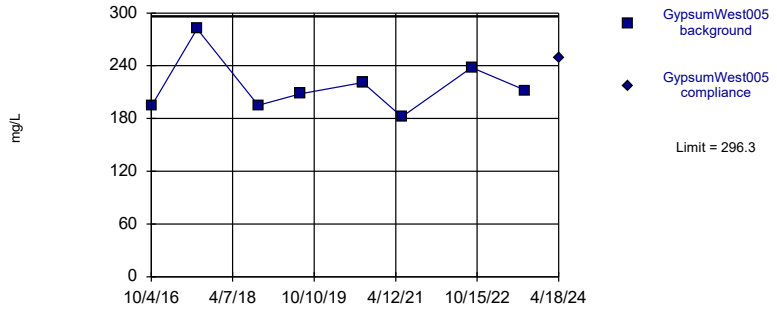
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=216.1, Std. Dev.=28.12, n=10. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8813, critical = 0.842. Kappa = 2.851 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Magnesium Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

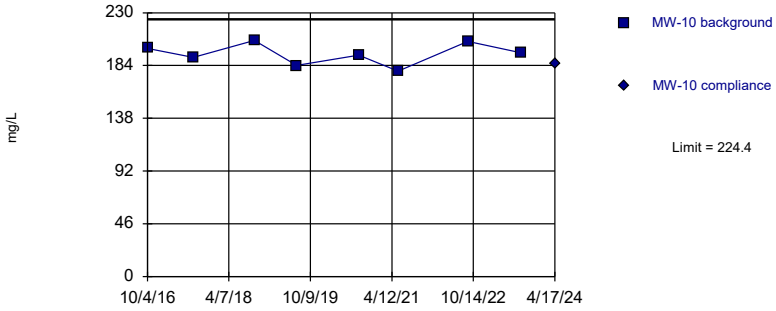
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=194, Std. Dev.=9.457, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9582, critical = 0.851. Kappa = 3.21 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Magnesium Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

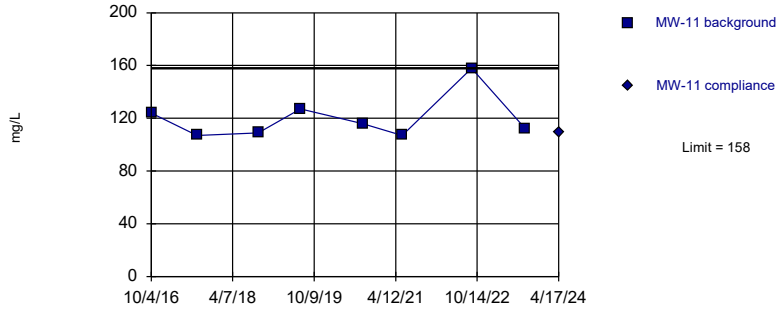
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.1 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Magnesium Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

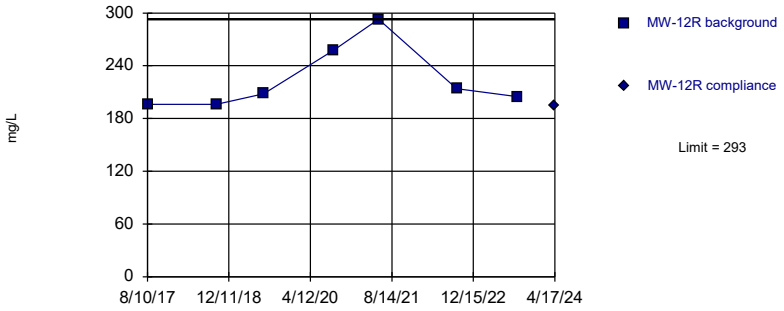
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.1 alpha level. Limit is highest of 7 background values. Well-constituent pair annual alpha = 0.05455. Individual comparison alpha = 0.02765 (1 of 2).

Constituent: Magnesium Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

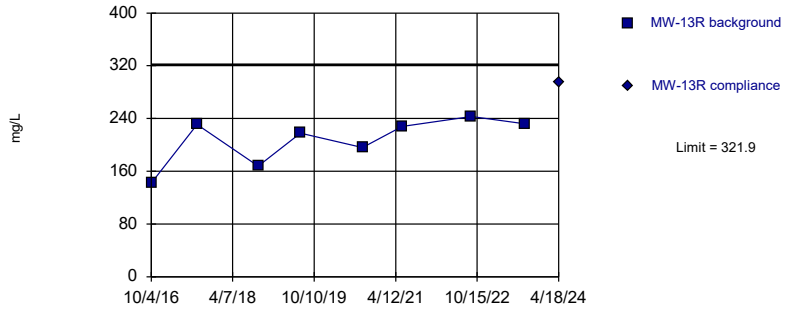
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=207.3, Std. Dev.=35.71, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8683, critical = 0.851. Kappa = 3.21 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Magnesium Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

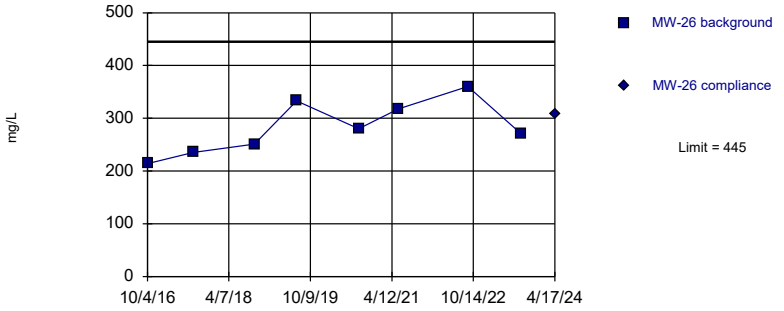
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=282.6, Std. Dev.=50.6, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9665, critical = 0.851. Kappa = 3.21 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Magnesium Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

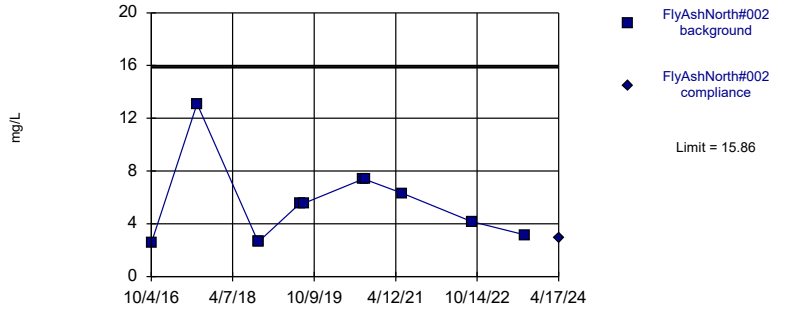
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=2.267, Std. Dev.=0.6242, n=11. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9004, critical = 0.85. Kappa = 2.749 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Manganese Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

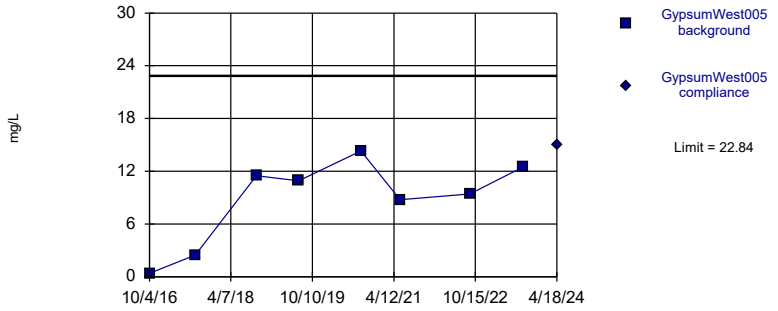
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=9.545, Std. Dev.=4.662, n=10. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8537, critical = 0.842. Kappa = 2.851 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Manganese Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

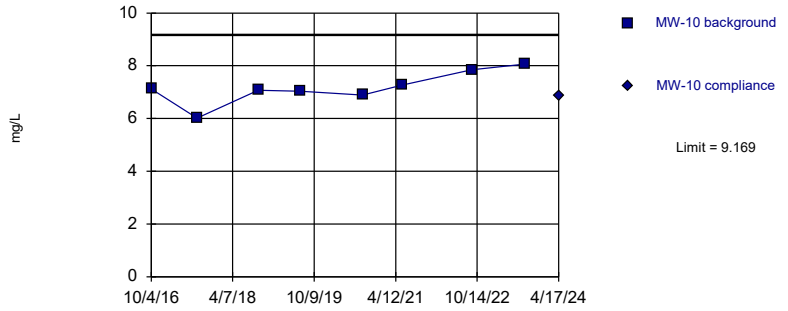
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.163, Std. Dev.=0.6252, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9279, critical = 0.851. Kappa = 3.21 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Manganese Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

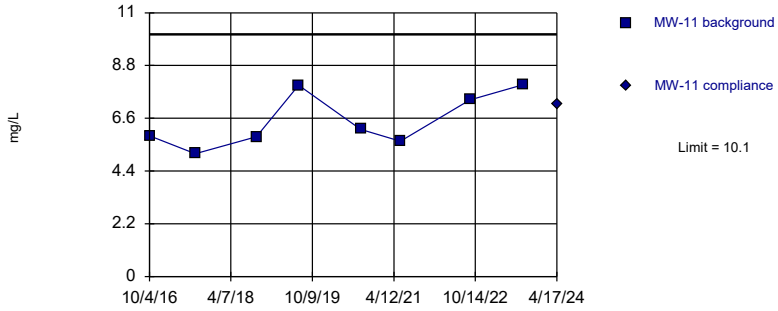
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=6.495, Std. Dev.=1.124, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8692, critical = 0.851. Kappa = 3.21 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Manganese Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

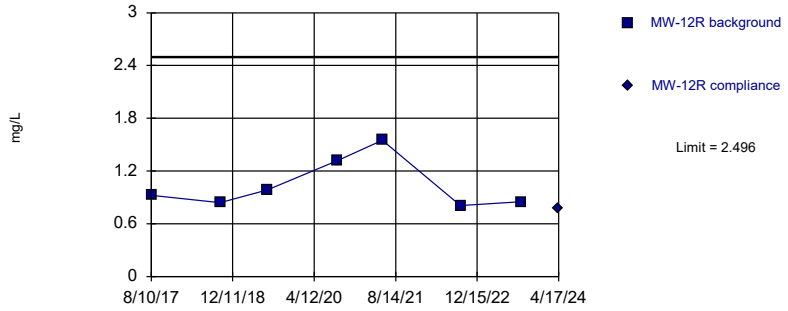
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on natural log transformation): Mean=0.01037, Std. Dev.=0.2507, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8431, critical = 0.838. Kappa = 3.607 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Manganese Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

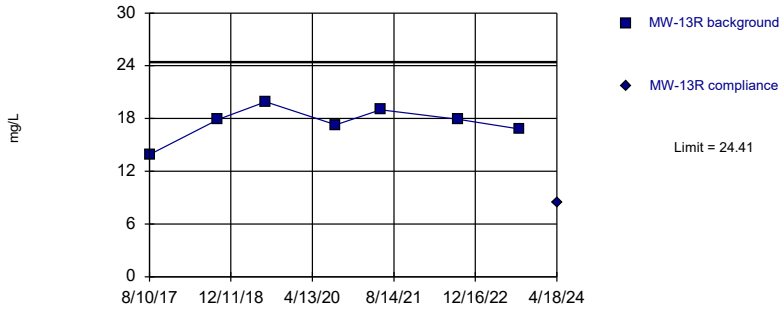
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=17.53, Std. Dev.=1.907, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9244, critical = 0.838. Kappa = 3.607 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Manganese Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

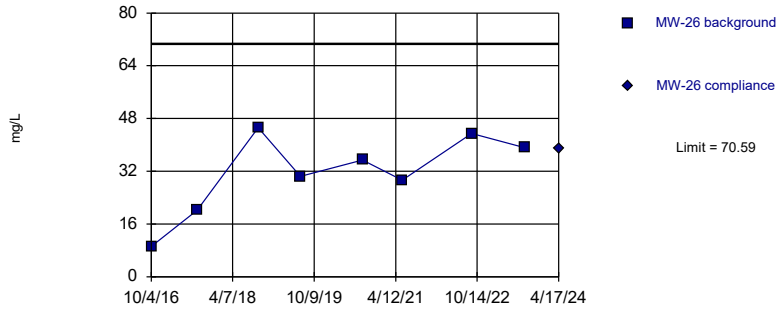
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=31.55, Std. Dev.=12.16, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9366, critical = 0.851. Kappa = 3.21 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Manganese Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

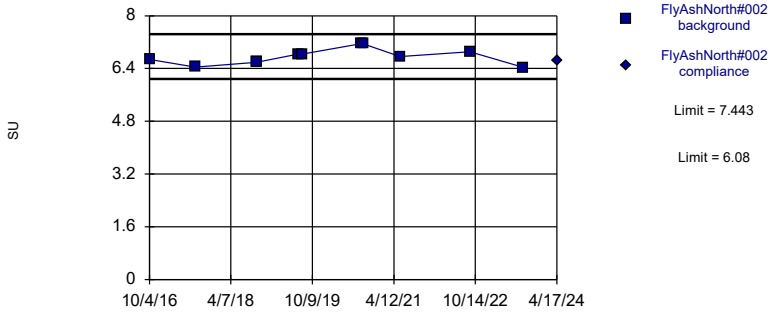
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=6.762, Std. Dev.=0.248, n=11. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9338, critical = 0.85. Kappa = 2.749 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: pH Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

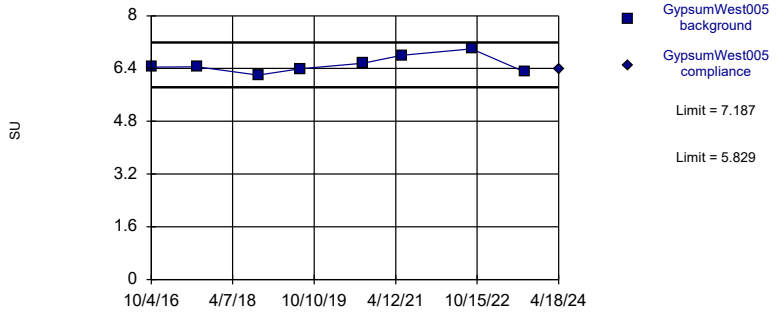
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=6.508, Std. Dev.=0.2383, n=10. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9172, critical = 0.842. Kappa = 2.851 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: pH Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

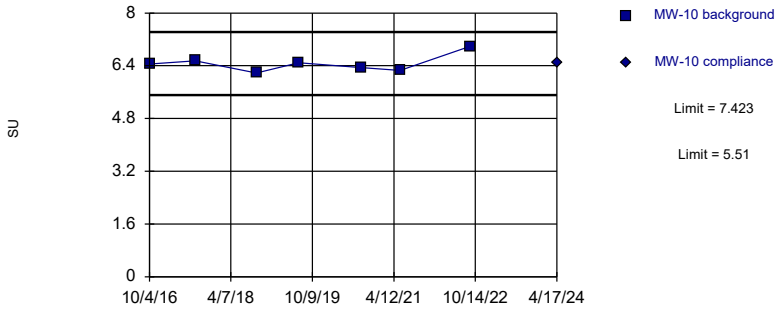
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=6.466, Std. Dev.=0.2653, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8926, critical = 0.838. Kappa = 3.607 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: pH Analysis Run 6/25/2024 2:03 PM View: Unit 02 Prediction Limits

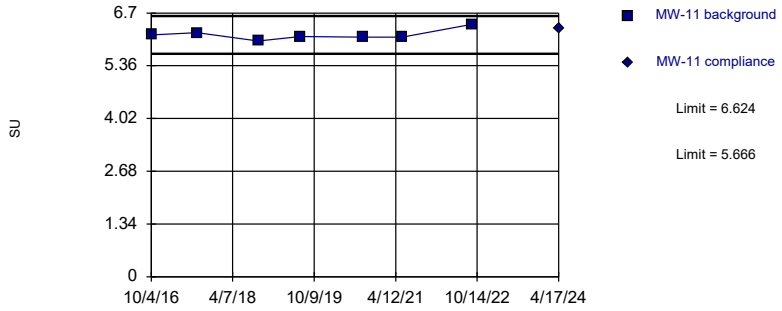
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=6.145, Std. Dev.=0.1329, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8702, critical = 0.838. Kappa = 3.607 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: pH Analysis Run 6/25/2024 2:04 PM View: Unit 02 Prediction Limits

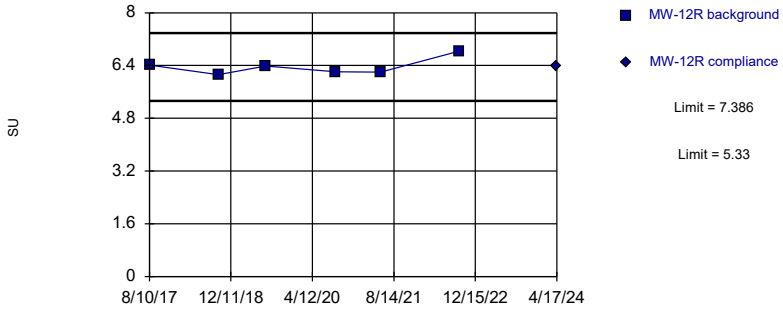
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=6.358, Std. Dev.=0.2567, n=6. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8538, critical = 0.826. Kappa = 4.004 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: pH Analysis Run 6/25/2024 2:04 PM View: Unit 02 Prediction Limits

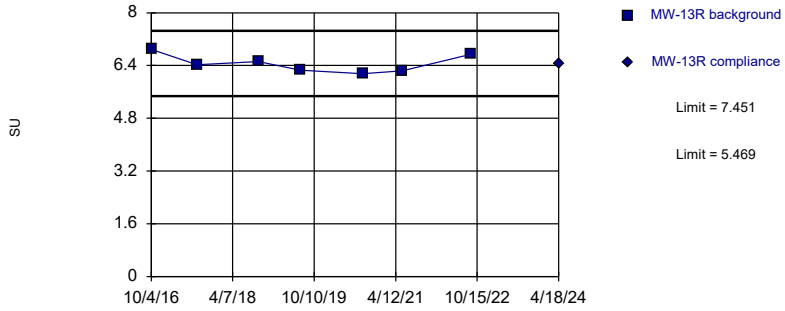
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=6.46, Std. Dev.=0.2748, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9304, critical = 0.838. Kappa = 3.607 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: pH Analysis Run 6/25/2024 2:04 PM View: Unit 02 Prediction Limits

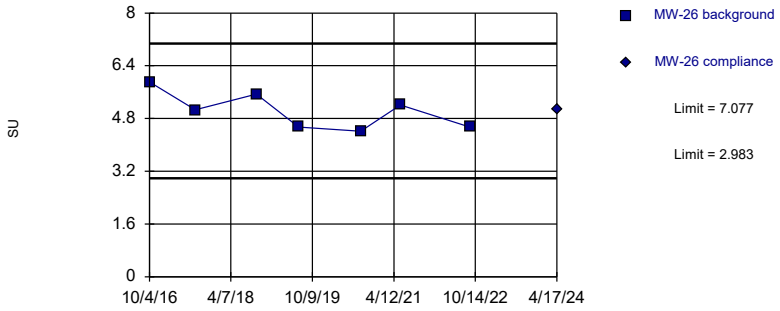
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=5.03, Std. Dev.=0.5675, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.918, critical = 0.838. Kappa = 3.607 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

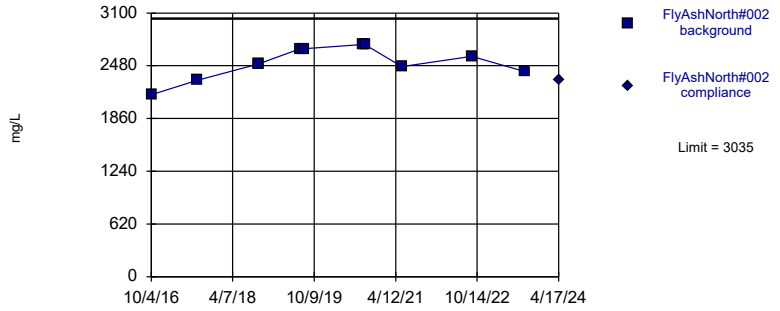
Constituent: pH Analysis Run 6/25/2024 2:04 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2522, Std. Dev.=186.6, n=11. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9233, critical = 0.85. Kappa = 2.749 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

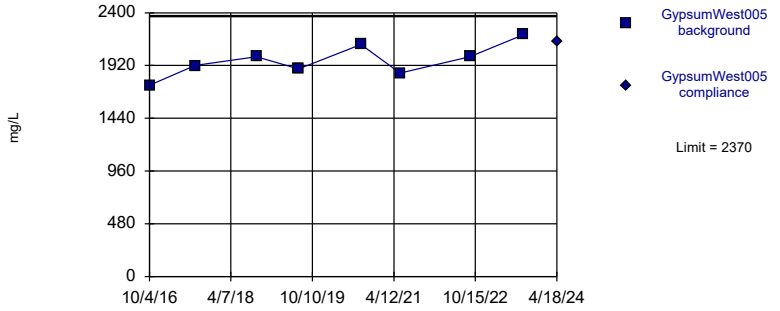
Constituent: Sulfate Analysis Run 6/25/2024 2:04 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1971, Std. Dev.=140, n=10. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9679, critical = 0.842. Kappa = 2.851 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

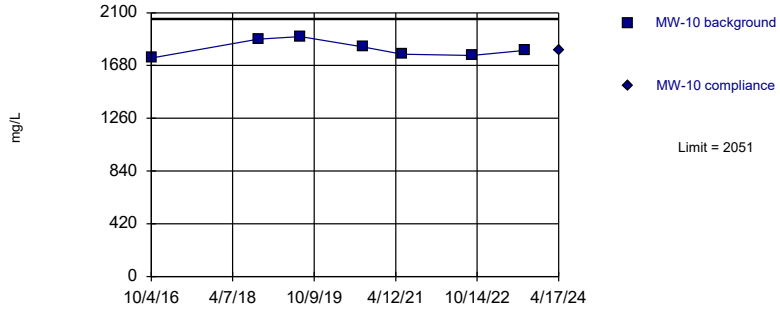
Constituent: Sulfate Analysis Run 6/25/2024 2:04 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1814, Std. Dev.=65.54, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9175, critical = 0.838. Kappa = 3.607 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

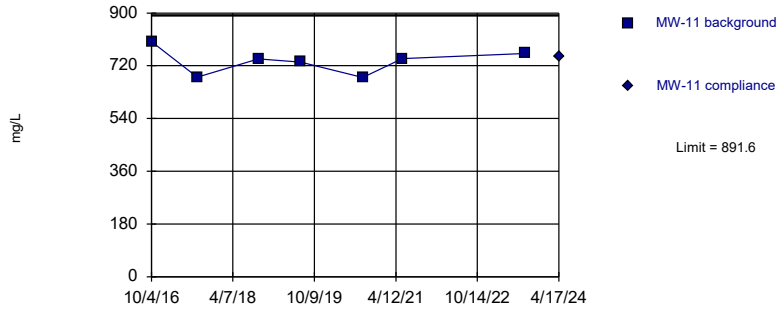
Constituent: Sulfate Analysis Run 6/25/2024 2:04 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=735, Std. Dev.=43.41, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9225, critical = 0.838. Kappa = 3.607 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

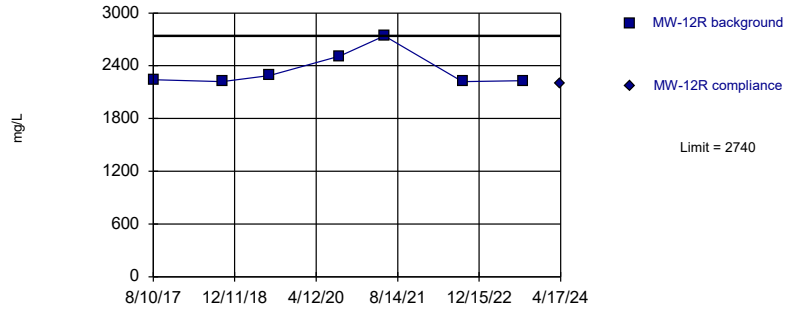
Constituent: Sulfate Analysis Run 6/25/2024 2:04 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.1 alpha level. Limit is highest of 7 background values. Well-constituent pair annual alpha = 0.05455. Individual comparison alpha = 0.02765 (1 of 2).

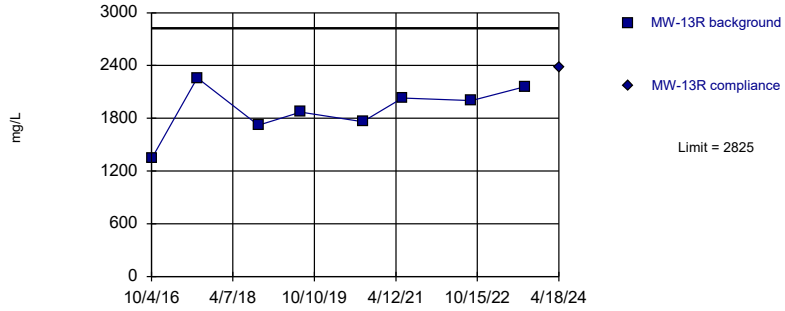
Constituent: Sulfate Analysis Run 6/25/2024 2:04 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1893, Std. Dev.=290.4, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.954, critical = 0.851. Kappa = 3.21 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

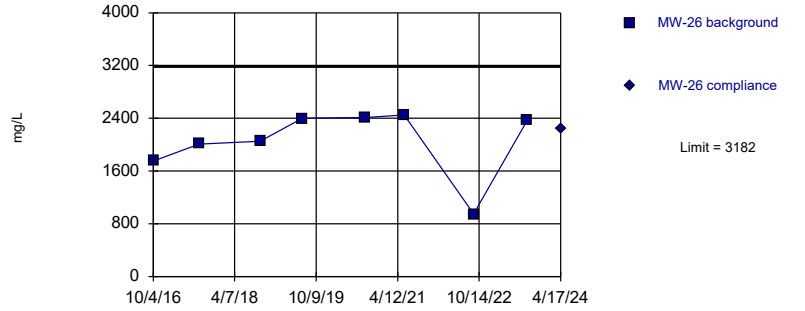
Constituent: Sulfate Analysis Run 6/25/2024 2:04 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square transformation): Mean=4423913, Std. Dev.=1776559, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8512, critical = 0.851. Kappa = 3.21 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

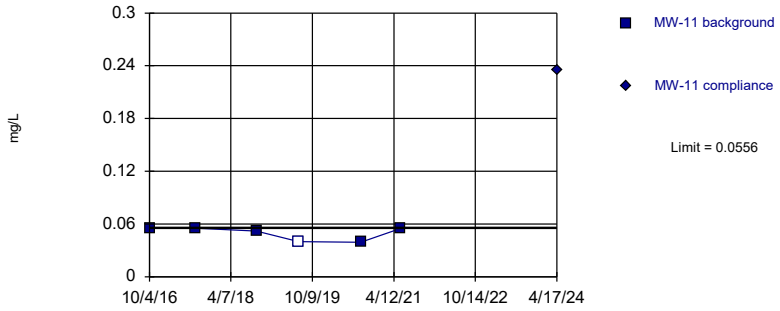
Constituent: Sulfate Analysis Run 6/25/2024 2:04 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG
Hollow symbols indicate censored values.

Exceeds Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.1 alpha level. Limit is highest of 6 background values. 16.67% NDs. Well-constituent pair annual alpha = 0.06667. Individual comparison alpha = 0.03391 (1 of 2).

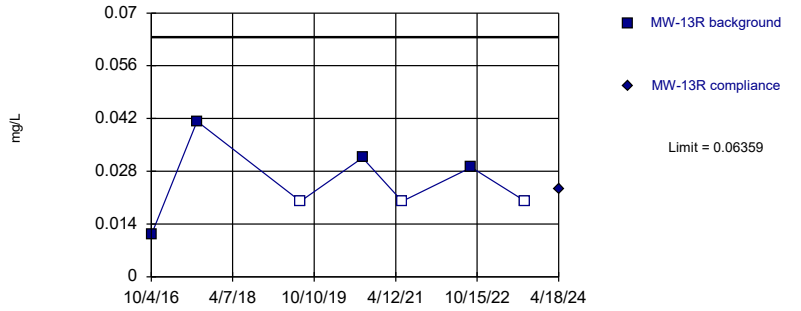
Constituent: Zinc Analysis Run 6/25/2024 2:04 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19c Software licensed to . UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.0209, Std. Dev.=0.01183, n=7, 42.86% NDs. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9394, critical = 0.838. Kappa = 3.607 (c=11, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839.

Constituent: Zinc Analysis Run 6/25/2024 2:04 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Prediction Limit

Constituent: Arsenic (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-10	MW-10
10/4/2016	0.0034	
8/10/2017	0.00253	
9/26/2018	0.00301	
7/8/2019	<0.008	
9/1/2020	0.0031	
5/25/2021	0.00279	
9/7/2022	0.00323	
9/6/2023	0.00306	
4/17/2024		0.00322

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Arsenic (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-11	MW-11
10/4/2016	<0.002	
8/10/2017	<0.002	
9/26/2018	<0.002	
7/8/2019	<0.002	
9/1/2020	<0.002	
5/26/2021	0.00284	
9/8/2022	0.0035	
9/5/2023	0.00267	
4/17/2024		<0.002

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Arsenic (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-13R	MW-13R
10/4/2016	<0.002	
8/10/2017	0.00246	
9/26/2018	0.00422	
7/8/2019	<0.002	
9/1/2020	<0.002	
5/26/2021	0.00268	
9/7/2022	0.00825	
9/6/2023	<0.002	
4/18/2024		<0.002

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-10	MW-10
10/4/2016	0.0137	
8/10/2017	0.0148	
9/26/2018	0.0158	
7/8/2019	0.016	
9/1/2020	0.0146	
5/25/2021	0.0141	
9/7/2022	0.016	
9/6/2023	0.015	
4/17/2024		0.0148

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-11	MW-11
10/4/2016	0.0325	
8/10/2017	0.0299	
9/26/2018	0.0311	
7/8/2019	0.0489	
9/1/2020	0.0315	
5/26/2021	0.0314	
9/8/2022	0.0388	
9/5/2023	0.0329	
4/17/2024		0.0306

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-12R	MW-12R
8/10/2017	0.0313	
9/26/2018	0.016	
7/8/2019	0.0182	
9/1/2020	0.0169	
5/26/2021	0.0157	
9/7/2022	0.0144	
9/6/2023	0.0144	
4/17/2024		0.0153

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-13R	MW-13R
10/4/2016	0.00446	
8/10/2017	0.0665	
9/26/2018	0.0322	
7/8/2019	0.0338	
9/1/2020	0.0255	
5/26/2021	0.0265	
9/7/2022	0.0217	
9/6/2023	0.0188	
4/18/2024		0.0202

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-10	MW-10
10/4/2016	<5	
8/10/2017	<5	
9/26/2018	<5	
7/8/2019	<5	
9/1/2020	5.18	
5/25/2021	<5	
9/7/2022	<5	
9/6/2023	<5	
4/17/2024		6.76

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-11	MW-11
10/4/2016	8.08	
8/10/2017	5.26	
9/26/2018	5.12	
7/8/2019	6.03	
9/1/2020	5.15	
5/26/2021	<5	
9/8/2022	10.8	
9/5/2023	6.47	
4/17/2024		6.56

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-12R	MW-12R
8/10/2017	8.06	
9/26/2018	7	
7/8/2019	7.64	
9/1/2020	8.22	
5/26/2021	7.01	
9/7/2022	6.33	
9/6/2023	6.72	
4/17/2024		7.57

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-13R	MW-13R
10/4/2016	<5	
8/10/2017	17.5	
9/26/2018	8.41	
7/8/2019	8.75	
9/1/2020	8.33	
5/26/2021	10.5	
9/7/2022	11.3	
9/6/2023	14.3	
4/18/2024		28

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Cobalt (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-10	MW-10
10/4/2016	0.0188	
8/10/2017	0.0181	
9/26/2018	0.0185	
7/8/2019	0.0187	
9/1/2020	0.0181	
5/25/2021	0.0192	
9/7/2022	0.0176	
9/6/2023	0.0188	
4/17/2024		0.0189

Prediction Limit

Constituent: Cobalt (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-11	MW-11
10/4/2016	0.0277	
8/10/2017	0.0343	
9/26/2018	0.0324	
7/8/2019	0.0478	
9/1/2020	0.0354	
5/26/2021	0.0351	
9/8/2022	0.0409	
9/5/2023	0.0471	
4/17/2024		0.0441

Prediction Limit

Constituent: Cobalt (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-12R	MW-12R
8/10/2017	0.00528	
9/26/2018	0.0043	
7/8/2019	0.00544	
9/1/2020	0.00696	
5/26/2021	0.0079	
9/7/2022	0.00423	
9/6/2023	0.00416	
4/17/2024		0.0034

Prediction Limit

Constituent: Cobalt (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-13R	MW-13R
10/4/2016	<0.0005 (o)	
8/10/2017	0.044	
9/26/2018	0.0571	
7/8/2019	0.0703	
9/1/2020	0.0597	
5/26/2021	0.0541	
9/7/2022	0.0528	
9/6/2023	0.0579	
4/18/2024		0.0322

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	FlyAshNorth#002
10/4/2016	4.76	
8/10/2017	71.7 (o)	
9/26/2018	7.12	
9/27/2018	7.12	
7/8/2019	11.1	
8/5/2019	11.1	
9/1/2020	15.3	
9/16/2020	15.3	
5/25/2021	5.44	
9/8/2022	16.3	
9/5/2023	5.58	
4/17/2024		5.84

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	GypsumWest005	GypsumWest005
10/4/2016	4.17 (o)	
8/10/2017	4.95 (o)	
9/26/2018	65.3	
7/8/2019	61.5	
7/9/2019	61.5	
9/1/2020	45.6	
9/2/2020	45.6	
5/25/2021	43.1	
9/8/2022	52.4	
9/6/2023	70.3	
4/18/2024		77.1

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-10	MW-10
10/4/2016	4.39	
8/10/2017	4.35	
9/26/2018	4.7	
7/8/2019	4.59	
9/1/2020	4.65	
5/25/2021	4.65	
9/7/2022	6.02	
9/6/2023	5.97	
4/17/2024		5.83

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-11	MW-11
10/4/2016	4.33	
8/10/2017	9.25	
9/26/2018	10.7	
7/8/2019	35.9	
9/1/2020	14.3	
5/26/2021	17	
9/8/2022	36.7	
9/5/2023	22	
4/17/2024		16.9

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-12R	MW-12R
8/10/2017	3.12	
9/26/2018	3.76	
7/8/2019	4.68	
9/1/2020	4.88	
5/26/2021	4.48	
9/7/2022	3.79	
9/6/2023	3.73	
4/17/2024		3.6

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-13R	MW-13R
10/4/2016	0.569	
8/10/2017	6.85	
9/26/2018	12	
7/8/2019	10.4	
9/1/2020	9.25	
5/26/2021	7.34	
9/7/2022	8.8	
9/6/2023	7.06	
4/18/2024		1.05

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-26	MW-26
10/4/2016	0.685	
8/10/2017	<1	
9/26/2018	1.2	
7/8/2019	2.88	
9/1/2020	<1	
5/26/2021	0.123	
9/8/2022	0.38	
9/5/2023	0.216	
4/17/2024		0.111

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Lead (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-12R	MW-12R
8/10/2017	0.000591	
9/26/2018	<0.0005	
7/8/2019	<0.0005	
9/1/2020	0.000708	
5/26/2021	<0.0005	
9/7/2022	<0.0005	
9/6/2023	<0.0005	
4/17/2024		<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Lead (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-13R	MW-13R
10/4/2016	<0.0005	
8/10/2017	0.00395	
9/26/2018	0.00989 (o)	
7/8/2019	0.00241	
9/1/2020	0.0028	
5/26/2021	<0.0005	
9/7/2022	0.00096	
9/6/2023	<0.0005	
4/18/2024		<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	FlyAshNorth#002
10/4/2016	265	
8/10/2017	190	
9/26/2018	313	
9/27/2018	313	
7/8/2019	340	
8/5/2019	340	
9/1/2020	328	
9/16/2020	328	
5/25/2021	329	
9/8/2022	396	
9/5/2023	288	
4/17/2024		344

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	GypsumWest005	GypsumWest005
10/4/2016	194	
8/10/2017	282	
9/26/2018	195	
7/8/2019	208	
7/9/2019	208	
9/1/2020	221	
9/2/2020	221	
5/25/2021	182	
9/8/2022	238	
9/6/2023	212	
4/18/2024		249

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-10	MW-10
10/4/2016	199	
8/10/2017	191	
9/26/2018	206	
7/8/2019	184	
9/1/2020	193	
5/25/2021	179	
9/7/2022	205	
9/6/2023	195	
4/17/2024		186

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-11	MW-11
10/4/2016	124	
8/10/2017	107	
9/26/2018	109	
7/8/2019	127	
9/1/2020	116	
5/26/2021	107	
9/8/2022	158	
9/5/2023	112	
4/17/2024		109

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-12R	MW-12R
8/10/2017	196	
9/26/2018	196	
7/8/2019	208	
9/1/2020	258	
5/26/2021	293	
9/7/2022	214	
9/6/2023	205	
4/17/2024		194

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-13R	MW-13R
10/4/2016	142	
8/10/2017	231	
9/26/2018	168	
7/8/2019	218	
9/1/2020	196	
5/26/2021	228	
9/7/2022	243	
9/6/2023	232	
4/18/2024		294

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-26	MW-26
10/4/2016	214	
8/10/2017	235	
9/26/2018	251	
7/8/2019	333	
9/1/2020	280	
5/26/2021	318	
9/8/2022	360	
9/5/2023	270	
4/17/2024		307

Prediction Limit

Constituent: Manganese (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	FlyAshNorth#002
10/4/2016	2.55	
8/10/2017	13.1	
9/26/2018	2.62	
9/27/2018	2.62	
7/8/2019	5.58	
8/5/2019	5.58	
9/1/2020	7.38	
9/16/2020	7.38	
5/25/2021	6.32	
9/8/2022	4.16	
9/5/2023	3.15	
4/17/2024		2.92

Prediction Limit

Constituent: Manganese (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	GypsumWest005	GypsumWest005
10/4/2016	0.411	
8/10/2017	2.47	
9/26/2018	11.5	
7/8/2019	10.9	
7/9/2019	10.9	
9/1/2020	14.3	
9/2/2020	14.3	
5/25/2021	8.75	
9/8/2022	9.42	
9/6/2023	12.5	
4/18/2024		15

Prediction Limit

Constituent: Manganese (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-10	MW-10
10/4/2016	7.12	
8/10/2017	6.01	
9/26/2018	7.07	
7/8/2019	7.03	
9/1/2020	6.89	
5/25/2021	7.26	
9/7/2022	7.85	
9/6/2023	8.07	
4/17/2024		6.86

Prediction Limit

Constituent: Manganese (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-11	MW-11
10/4/2016	5.87	
8/10/2017	5.12	
9/26/2018	5.83	
7/8/2019	7.98	
9/1/2020	6.14	
5/26/2021	5.64	
9/8/2022	7.37	
9/5/2023	8.01	
4/17/2024		7.17

Prediction Limit

Constituent: Manganese (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-12R	MW-12R
8/10/2017	0.923	
9/26/2018	0.84	
7/8/2019	0.987	
9/1/2020	1.32	
5/26/2021	1.55	
9/7/2022	0.808	
9/6/2023	0.85	
4/17/2024		0.771

Prediction Limit

Constituent: Manganese (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-13R	MW-13R
10/4/2016	1.74 (o)	
8/10/2017	13.9	
9/26/2018	17.9	
7/8/2019	19.9	
9/1/2020	17.3	
5/26/2021	19	
9/7/2022	17.9	
9/6/2023	16.8	
4/18/2024		8.5

Prediction Limit

Constituent: Manganese (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-26	MW-26
10/4/2016	9.2	
8/10/2017	20.2	
9/26/2018	45.2	
7/8/2019	30.5	
9/1/2020	35.4	
5/26/2021	29.3	
9/8/2022	43.5	
9/5/2023	39.1	
4/17/2024		38.8

Prediction Limit

Constituent: pH (SU) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	FlyAshNorth#002
10/4/2016	6.68	
8/10/2017	6.44	
9/26/2018	6.59	
9/27/2018	6.59	
7/8/2019	6.84	
8/5/2019	6.84	
9/1/2020	7.15 (HF)	
9/16/2020	7.15	
5/25/2021	6.76	
9/8/2022	6.91	
9/5/2023	6.43	
4/17/2024		6.66

Prediction Limit

Constituent: pH (SU) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	GypsumWest005	GypsumWest005
10/4/2016	6.44	
8/10/2017	6.45	
9/26/2018	6.2	
7/8/2019	6.39	
7/9/2019	6.39	
9/1/2020	6.56	
9/2/2020	6.56	
5/25/2021	6.8	
9/8/2022	7	
9/6/2023	6.29	
4/18/2024		6.39

Prediction Limit

Constituent: pH (SU) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-10	MW-10
10/4/2016	6.45	
8/10/2017	6.55	
9/26/2018	6.18	
7/8/2019	6.49	
9/1/2020	6.35	
5/25/2021	6.255 (D)	
9/7/2022	6.99	
4/17/2024		6.5

Prediction Limit

Constituent: pH (SU) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-11	MW-11
10/4/2016	6.14	
8/10/2017	6.2	
9/26/2018	5.99	
7/8/2019	6.1	
9/1/2020	6.09	
5/26/2021	6.085 (D)	
9/8/2022	6.41	
4/17/2024		6.3

Prediction Limit

Constituent: pH (SU) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-12R	MW-12R
8/10/2017	6.41	
9/26/2018	6.12	
7/8/2019	6.38	
9/1/2020	6.21	
5/26/2021	6.2 (D)	
9/7/2022	6.83	
4/17/2024		6.38

Prediction Limit

Constituent: pH (SU) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-13R	MW-13R
10/4/2016	6.89	
8/10/2017	6.42	
9/26/2018	6.52	
7/8/2019	6.26	
9/1/2020	6.15	
5/26/2021	6.24 (D)	
9/7/2022	6.74	
4/18/2024		6.46

Prediction Limit

Constituent: pH (SU) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-26	MW-26
10/4/2016	5.91	
8/10/2017	5.06	
9/26/2018	5.54	
7/8/2019	4.54	
9/1/2020	4.41	
5/26/2021	5.21 (D)	
9/8/2022	4.54	
4/17/2024		5.09

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	FlyAshNorth#002	FlyAshNorth#002
10/4/2016	2140	
8/10/2017	2310	
9/26/2018	2500	
9/27/2018	2500	
7/8/2019	2680	
8/5/2019	2680	
9/1/2020	2730	
9/16/2020	2730	
5/25/2021	2470	
9/8/2022	2590	
9/5/2023	2410	
4/17/2024		2320

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	GypsumWest005	GypsumWest005
10/4/2016	1740	
8/10/2017	1920	
9/26/2018	2000	
7/8/2019	1890	
7/9/2019	1890	
9/1/2020	2110	
9/2/2020	2110	
5/25/2021	1850	
9/8/2022	2000	
9/6/2023	2200	
4/18/2024		2140

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-10	MW-10
10/4/2016	1740	
8/10/2017	3600 (o)	
9/26/2018	1890	
7/8/2019	1910	
9/1/2020	1830	
5/25/2021	1770	
9/7/2022	1760	
9/6/2023	1800	
4/17/2024		1800

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-11	MW-11
10/4/2016	802	
8/10/2017	681	
9/26/2018	743	
7/8/2019	733	
9/1/2020	680	
5/26/2021	744	
9/8/2022	1300 (o)	
9/5/2023	762	
4/17/2024		751

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-12R	MW-12R
8/10/2017	2240	
9/26/2018	2220	
7/8/2019	2290	
9/1/2020	2510	
5/26/2021	2740	
9/7/2022	2220	
9/6/2023	2230	
4/17/2024		2200

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-13R	MW-13R
10/4/2016	1340	
8/10/2017	2260	
9/26/2018	1720	
7/8/2019	1870	
9/1/2020	1760	
5/26/2021	2030	
9/7/2022	2000	
9/6/2023	2160	
4/18/2024		2380

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-26	MW-26
10/4/2016	1750	
8/10/2017	2010	
9/26/2018	2050	
7/8/2019	2400	
9/1/2020	2410	
5/26/2021	2450	
9/8/2022	948	
9/5/2023	2370	
4/17/2024		2240

Prediction Limit

Constituent: Zinc (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-11	MW-11
10/4/2016	0.0556	
8/10/2017	0.0554	
9/26/2018	0.0521	
7/8/2019	<0.08	
9/1/2020	0.0392	
5/26/2021	0.055	
9/8/2022	0.82 (o)	
9/5/2023	0.438 (o)	
4/17/2024		0.235

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Zinc (mg/L) Analysis Run 6/25/2024 2:09 PM View: Unit 02 Prediction Limits

Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

	MW-13R	MW-13R
10/4/2016	0.0111	
8/10/2017	0.0413	
9/26/2018	0.0911 (o)	
7/8/2019	<0.02	
9/1/2020	0.0316	
5/26/2021	<0.02	
9/7/2022	0.029	
9/6/2023	<0.02	
4/18/2024		0.0233

ND substitution: RL or RL/2 if <15% NDs.

Appendix E

Mann-Kendall Trend Data

Trend Tests 01 Wells - Prediction Limit Exceedances - All Results (No Significant)

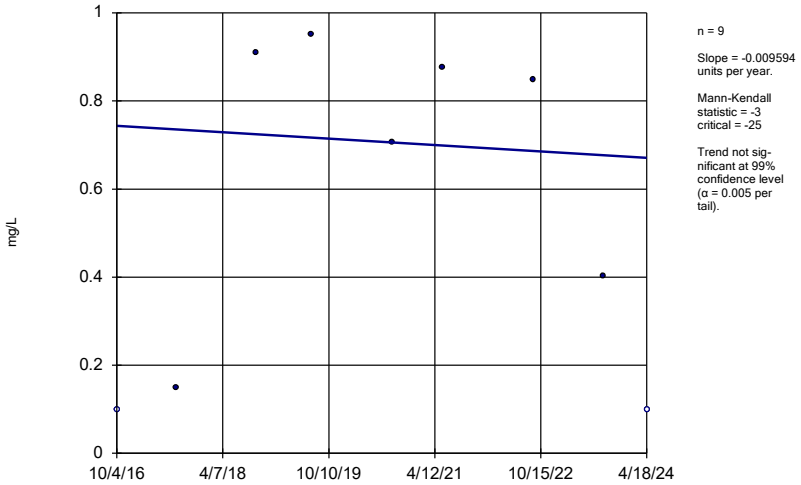
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill Printed 6/19/2024, 1:17 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Iron (mg/L)	MW-6 (bg)	-0.009594	-3	-25	No	9	22.22	n/a	0.01	NP
Iron (mg/L)	MW-9	0	11	25	No	9	66.67	n/a	0.01	NP
Manganese (mg/L)	MW-6 (bg)	-0.005801	-6	-25	No	9	0	n/a	0.01	NP
Manganese (mg/L)	MW-9	0	7	21	No	8	87.5	n/a	0.01	NP
Zinc (mg/L)	MW-6 (bg)	0	0	25	No	9	100	n/a	0.01	NP
Zinc (mg/L)	MW-9	0	8	25	No	9	88.89	n/a	0.01	NP

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-6 (bg)



n = 9

Slope = -0.009594 units per year.

Mann-Kendall statistic = -3
critical = -25

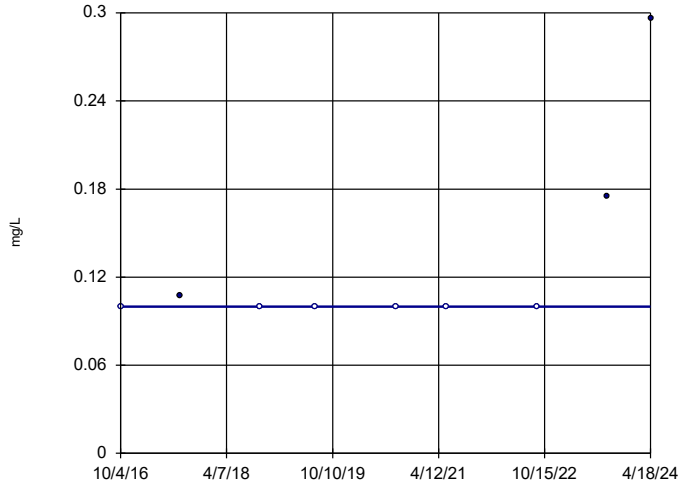
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 6/19/2024 1:16 PM View: Unit 01 Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-9



n = 9

Slope = 0 units per year.

Mann-Kendall statistic = 11
critical = 25

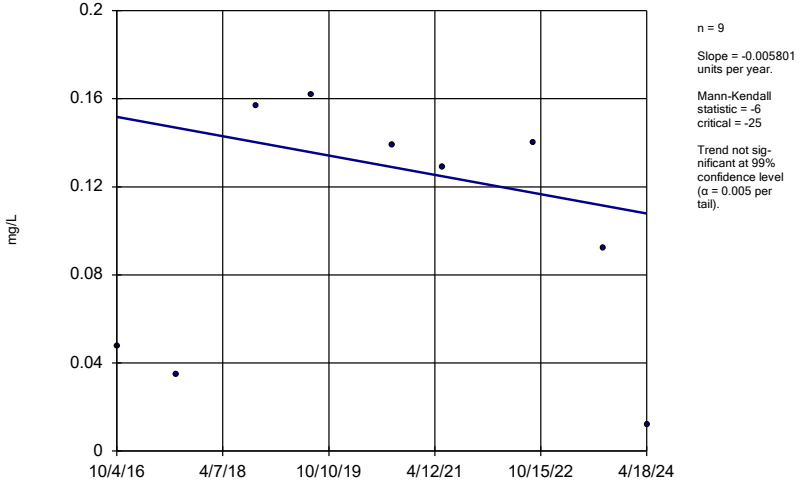
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 6/19/2024 1:16 PM View: Unit 01 Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG

Sen's Slope Estimator

MW-6 (bg)



n = 9

Slope = -0.005801 units per year.

Mann-Kendall statistic = -6
critical = -25

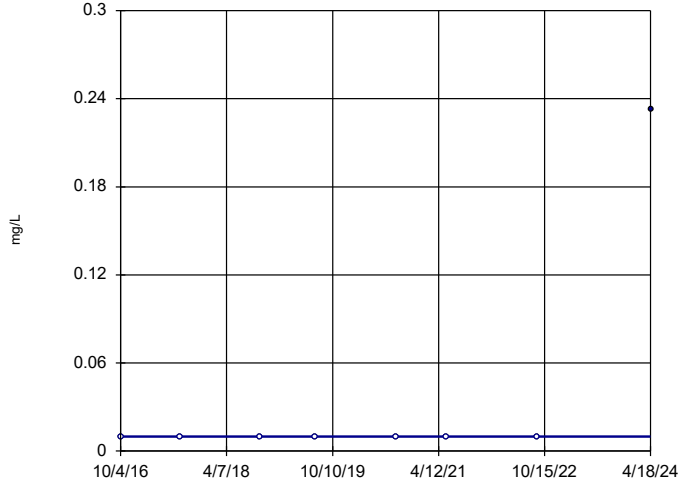
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Manganese Analysis Run 6/19/2024 1:16 PM View: Unit 01 Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-9



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 7
critical = 21

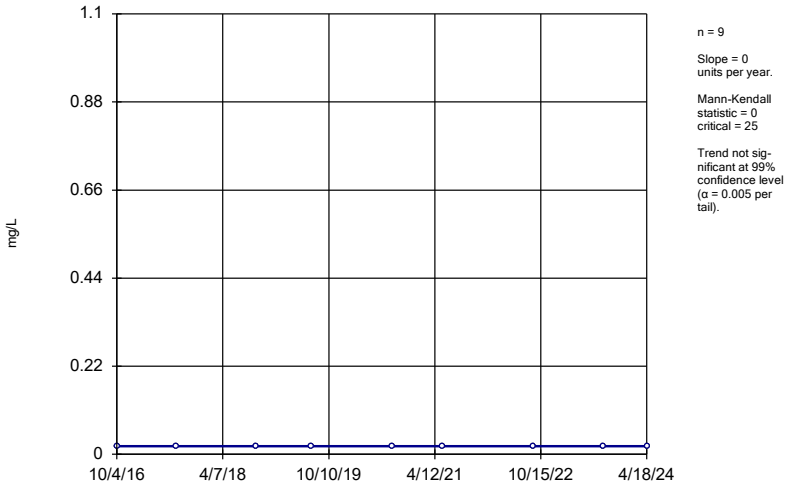
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Manganese Analysis Run 6/19/2024 1:16 PM View: Unit 01 Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-6 (bg)



n = 9

Slope = 0 units per year.

Mann-Kendall statistic = 0 critical = 25

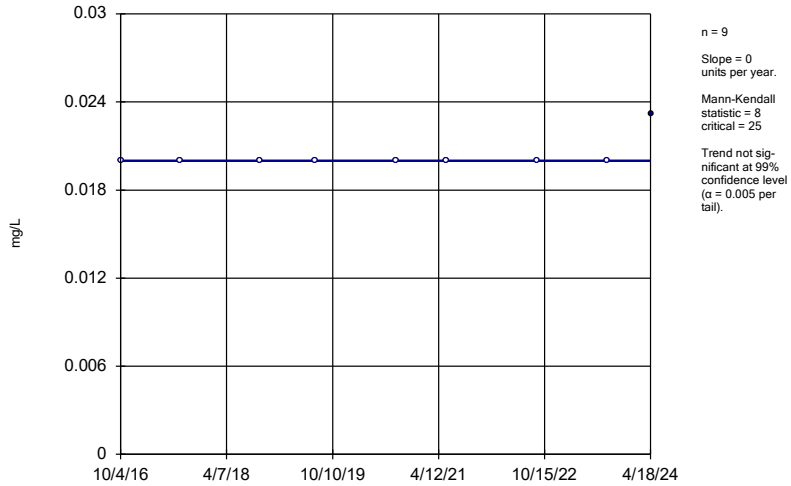
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Zinc Analysis Run 6/19/2024 1:16 PM View: Unit 01 Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-9



n = 9

Slope = 0 units per year.

Mann-Kendall statistic = 8 critical = 25

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

Constituent: Zinc Analysis Run 6/19/2024 1:16 PM View: Unit 01 Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Trend Tests 02 Wells - Prediction Limit Exceedances - All Results (No Significant)

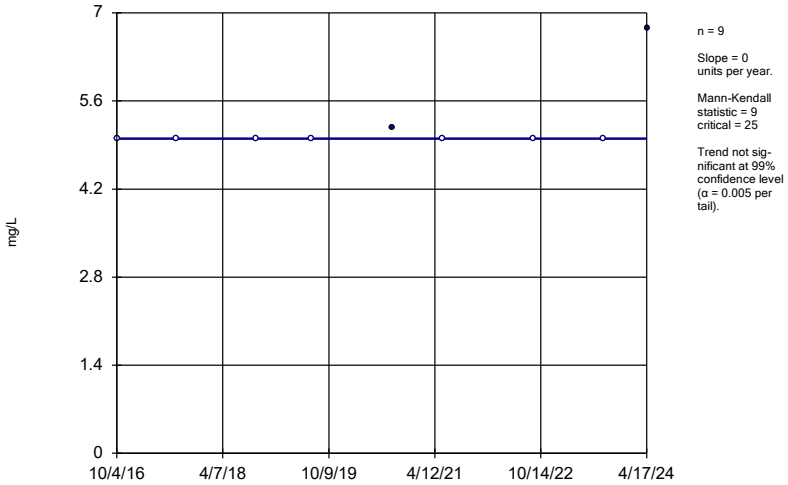
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill Printed 6/19/2024, 2:52 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Chloride (mg/L)	MW-10	0	9	25	No	9	77.78	n/a	0.01	NP
Chloride (mg/L)	MW-13R	1.487	20	25	No	9	11.11	n/a	0.01	NP
Zinc (mg/L)	MW-11	-0.0001292	-3	-18	No	7	14.29	n/a	0.01	NP

Sanitas™ v.10.0.19 Software licensed to . EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10

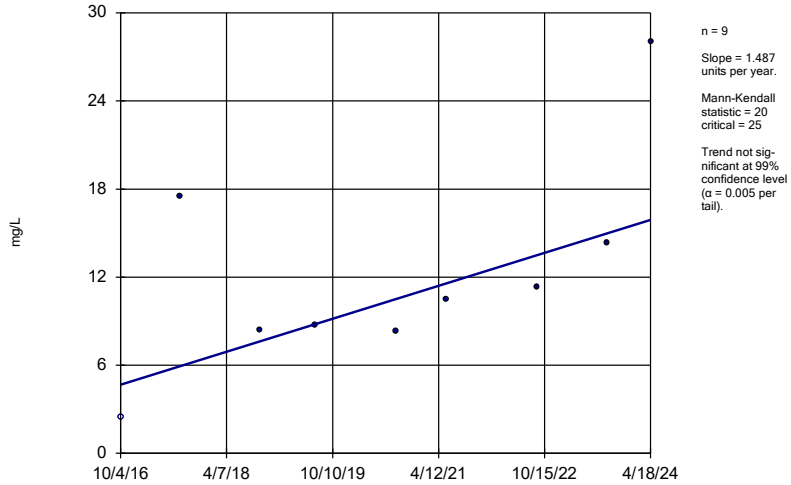


Constituent: Chloride Analysis Run 6/19/2024 2:52 PM View: Unit 02 Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-13R

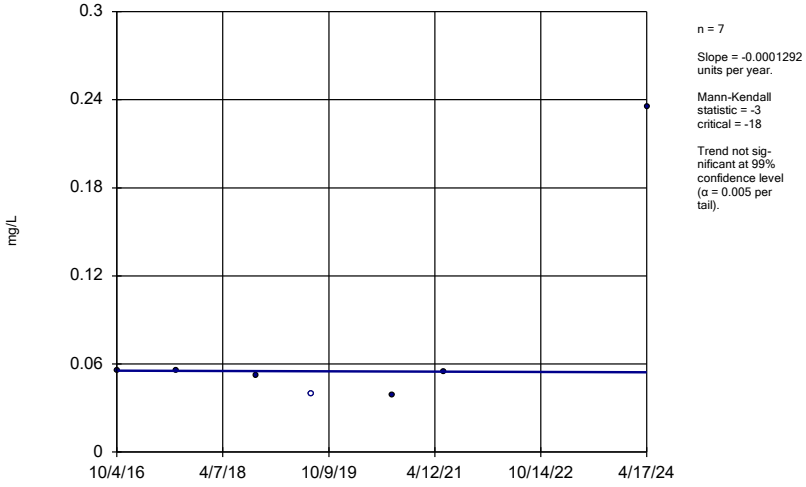


Constituent: Chloride Analysis Run 6/19/2024 2:52 PM View: Unit 02 Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Sanitas™ v.10.0.19 Software licensed to . EPA
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-11



Constituent: Zinc Analysis Run 6/19/2024 2:52 PM View: Unit 02 Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill CCR Landfill

Appendix F

Statistical Methodology Justification Supporting Documents

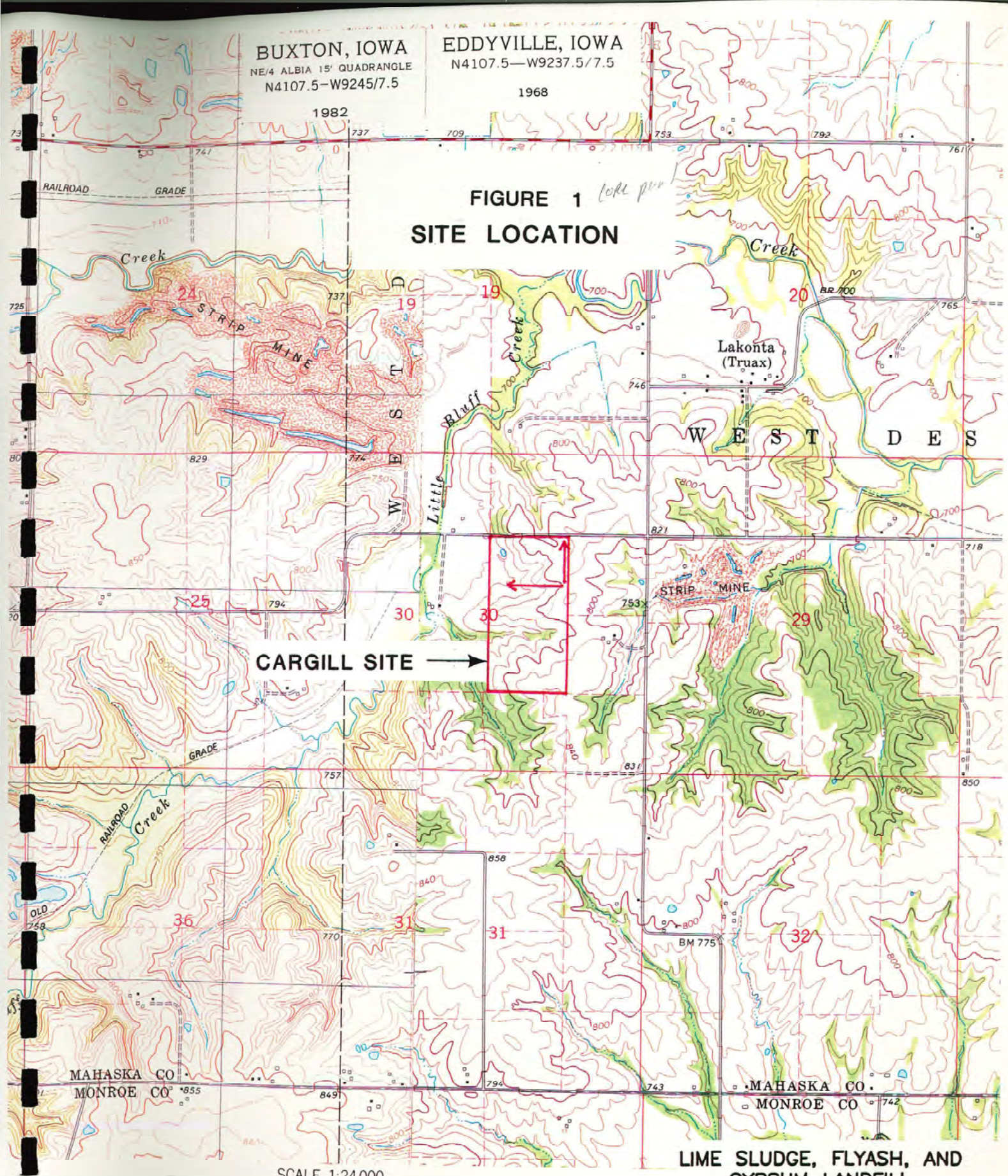
#163620 (Gene Fritch)

GHF copy

HYDROGEOLOGIC STUDY
AND
PROPOSED MONITORING PLAN

LIME SLUDGE/FLY ASH/GYPSUM LANDFILL
CARGILL, INC.
MAHASKA COUNTY, IOWA

1989



LIME SLUDGE, FLYASH, AND GYPSUM LANDFILL

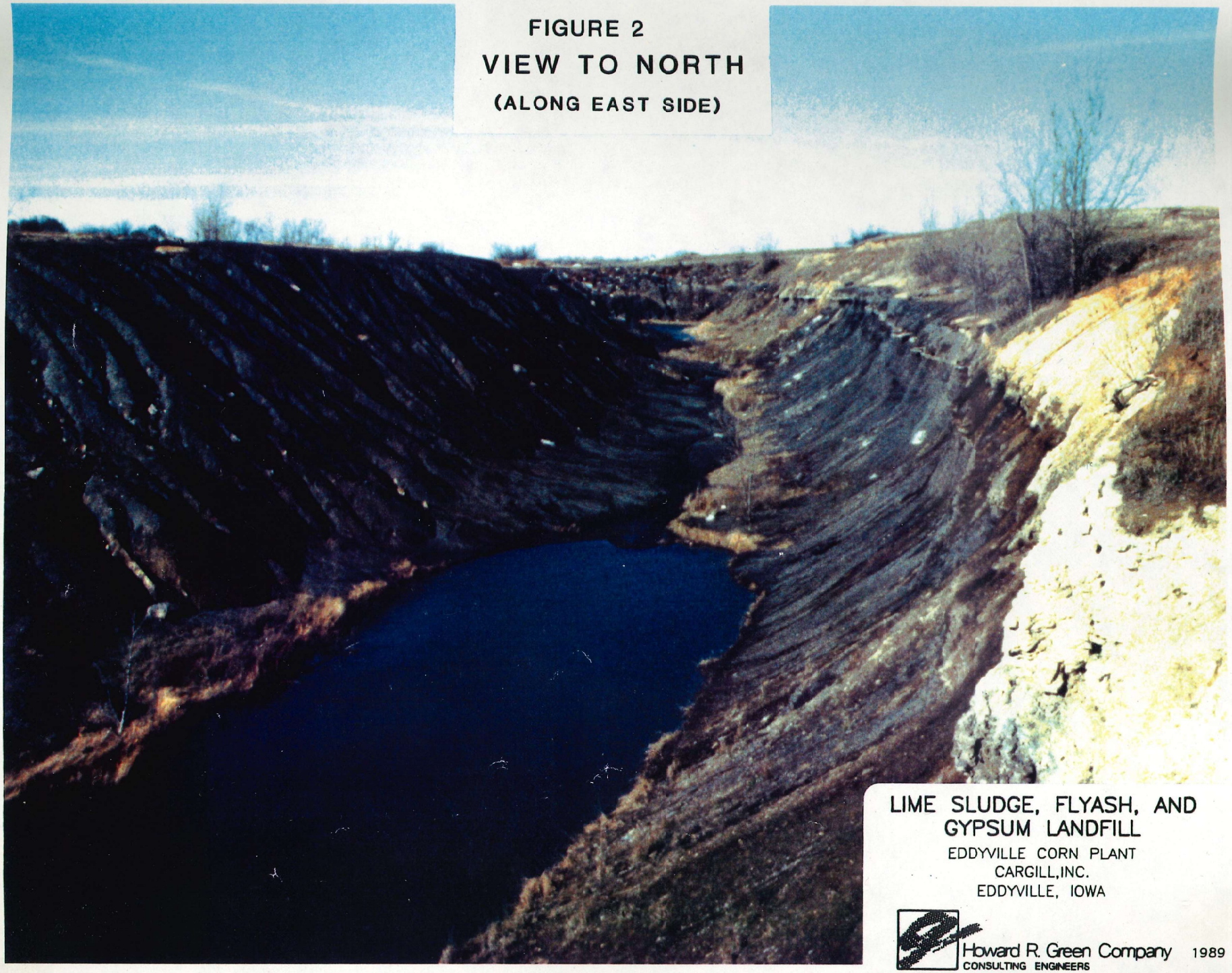
EDDYVILLE CORN PLANT
CARGILL, INC.
EDDYVILLE, IOWA

Howard R. Green Company
CONSULTING ENGINEERS
1989

FIGURE 2

VIEW TO NORTH

(ALONG EAST SIDE)



LIME SLUDGE, FLYASH, AND GYPSUM LANDFILL

EDDYVILLE CORN PLANT
CARGILL,INC.
EDDYVILLE, IOWA

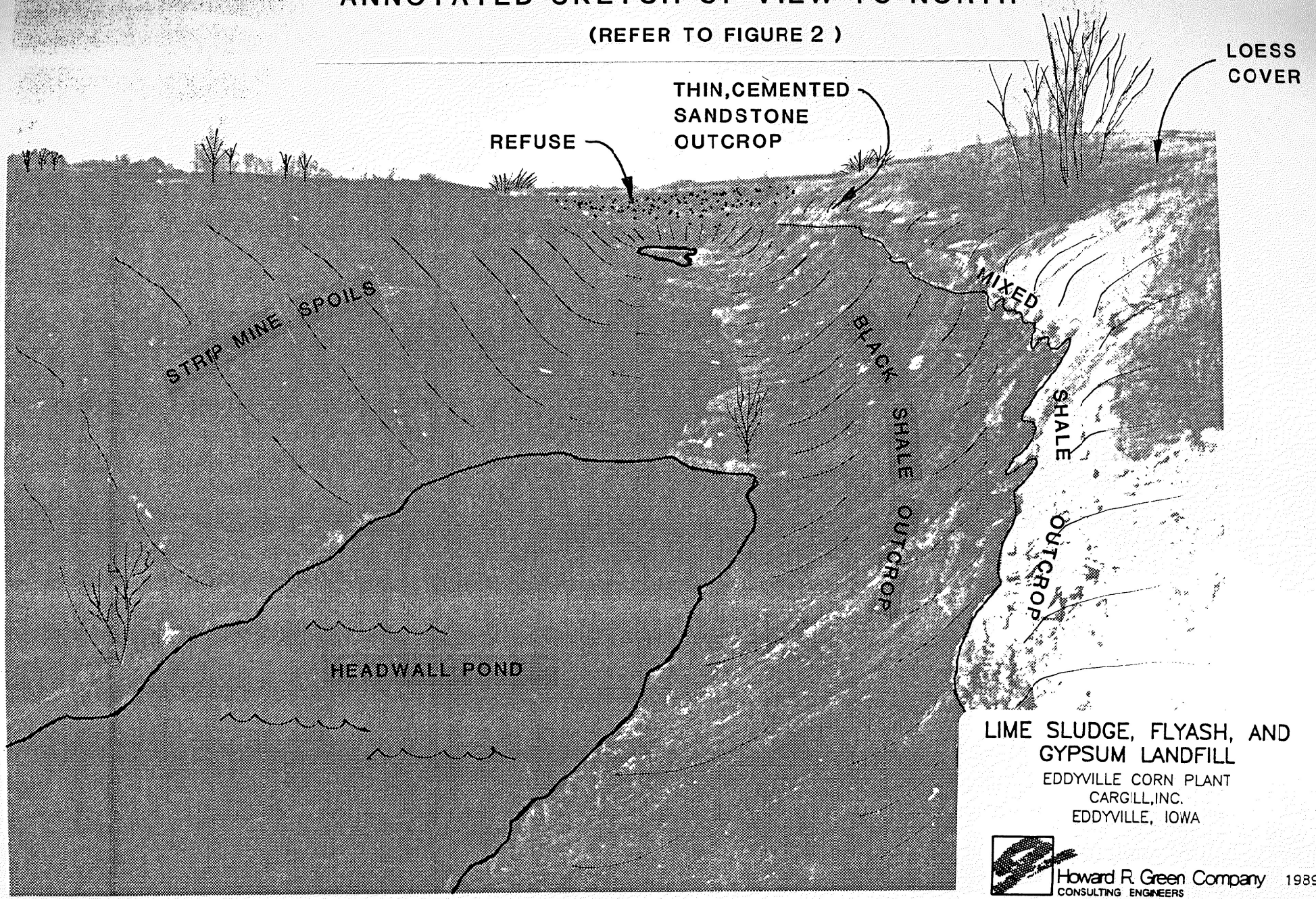
Howard R. Green Company
CONSULTING ENGINEERS

1989

FIGURE 3

ANNOTATED SKETCH OF VIEW TO NORTH

(REFER TO FIGURE 2)



LIME SLUDGE, FLYASH, AND GYPSUM LANDFILL

EDDYVILLE CORN PLANT
CARGILL, INC.
EDDYVILLE, IOWA

Howard R. Green Company
CONSULTING ENGINEERS

1989

FIGURE 4

VIEW TO WEST

(ACROSS CENTER)

LIME SLUDGE, FLYASH, AND GYPSUM LANDFILL

EDDYVILLE CORN PLANT
CARGILL,INC.
EDDYVILLE, IOWA

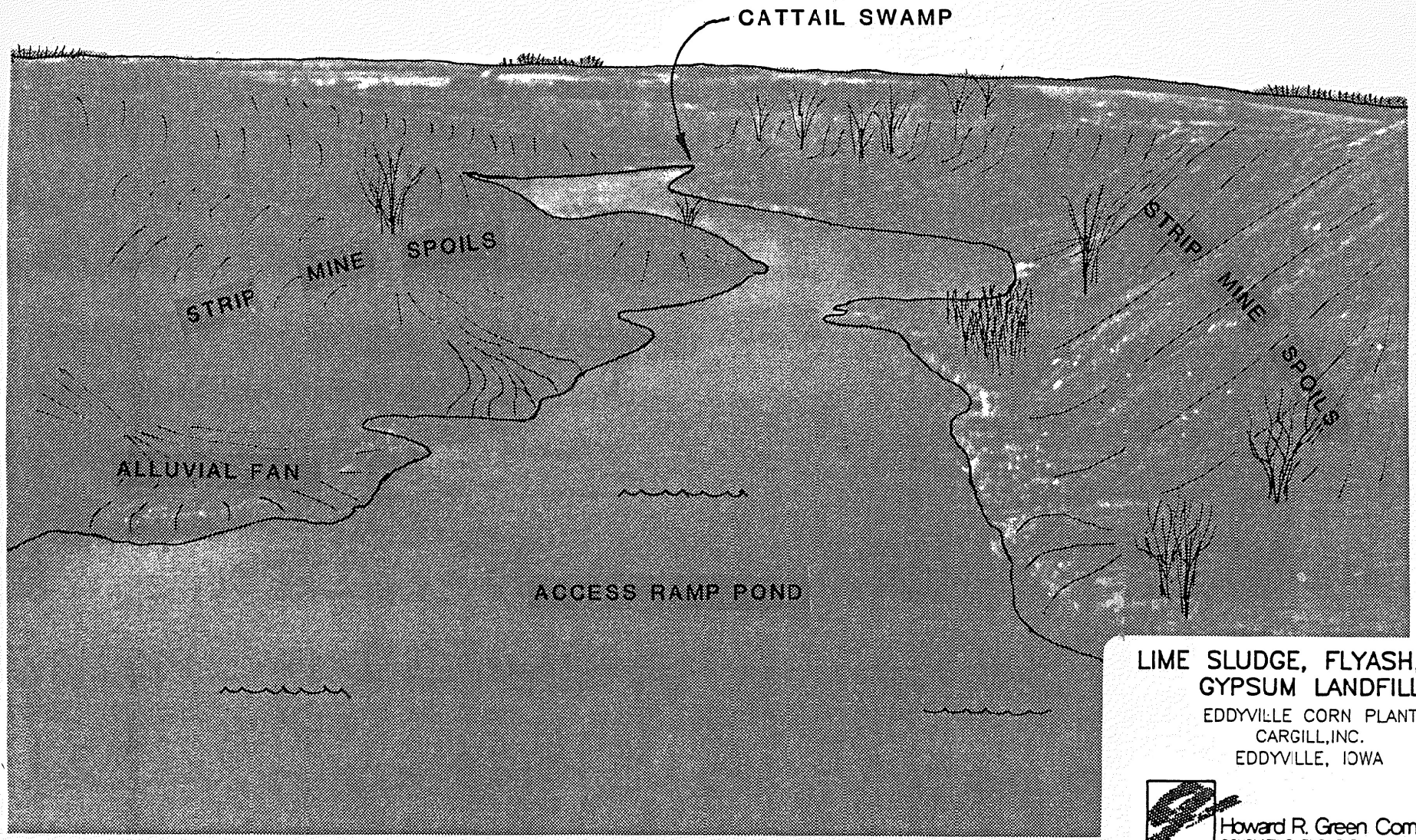
Howard R. Green Company
CONSULTING ENGINEERS

1989

FIGURE 5

ANNOTATED SKETCH OF VIEW TO WEST

(REFER TO FIGURE 4)

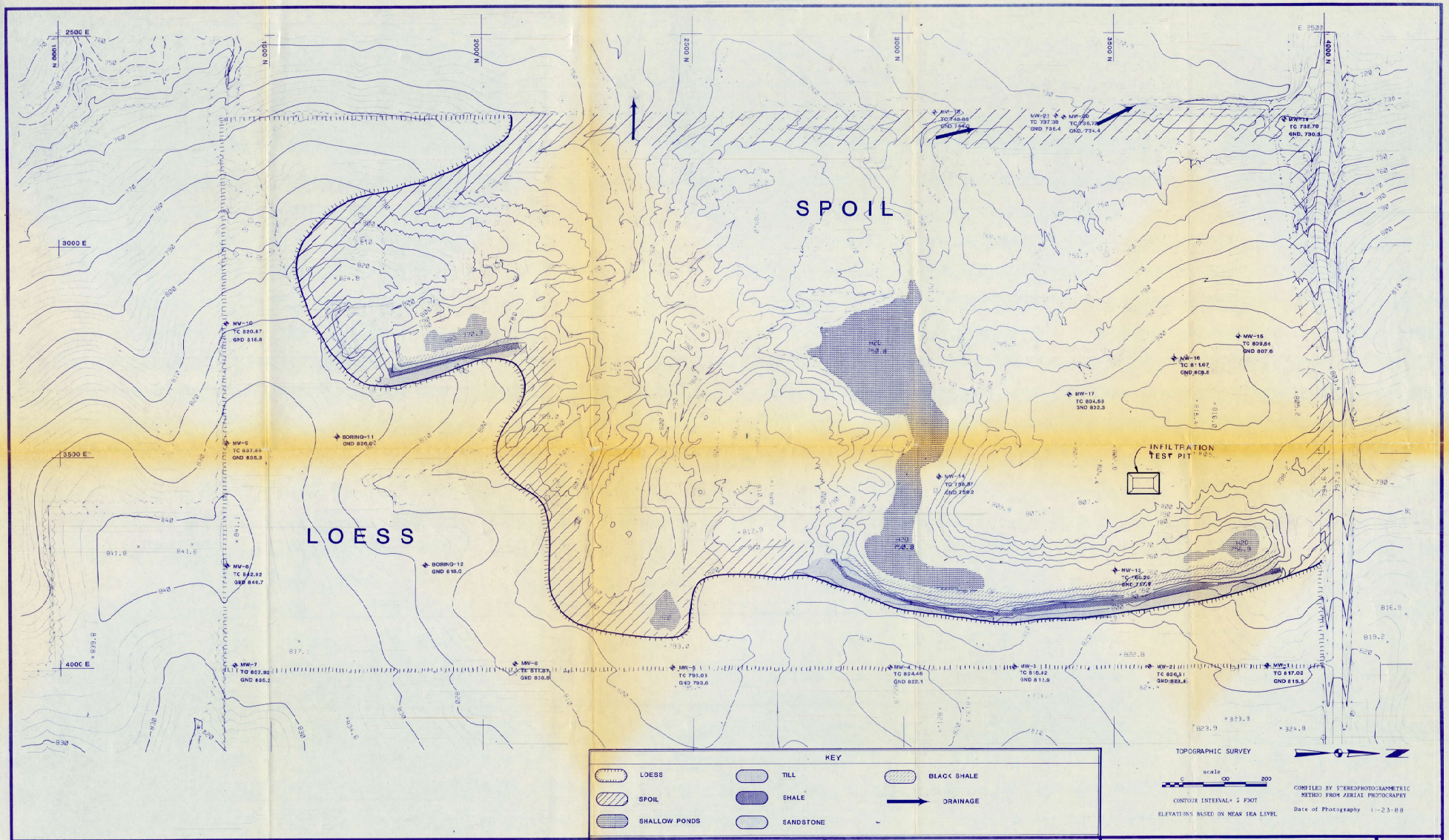


LIME SLUDGE, FLYASH, AND GYPSUM LANDFILL

EDDYVILLE CORN PLANT
CARGILL, INC.
EDDYVILLE, IOWA

Howard R. Green Company
CONSULTING ENGINEERS

1989



DRAWN: _____ SURVEYED: _____
APPROVED: _____ FIELD BOOK NO. _____
DATE: _____ JOB NO. 135052 & 135053

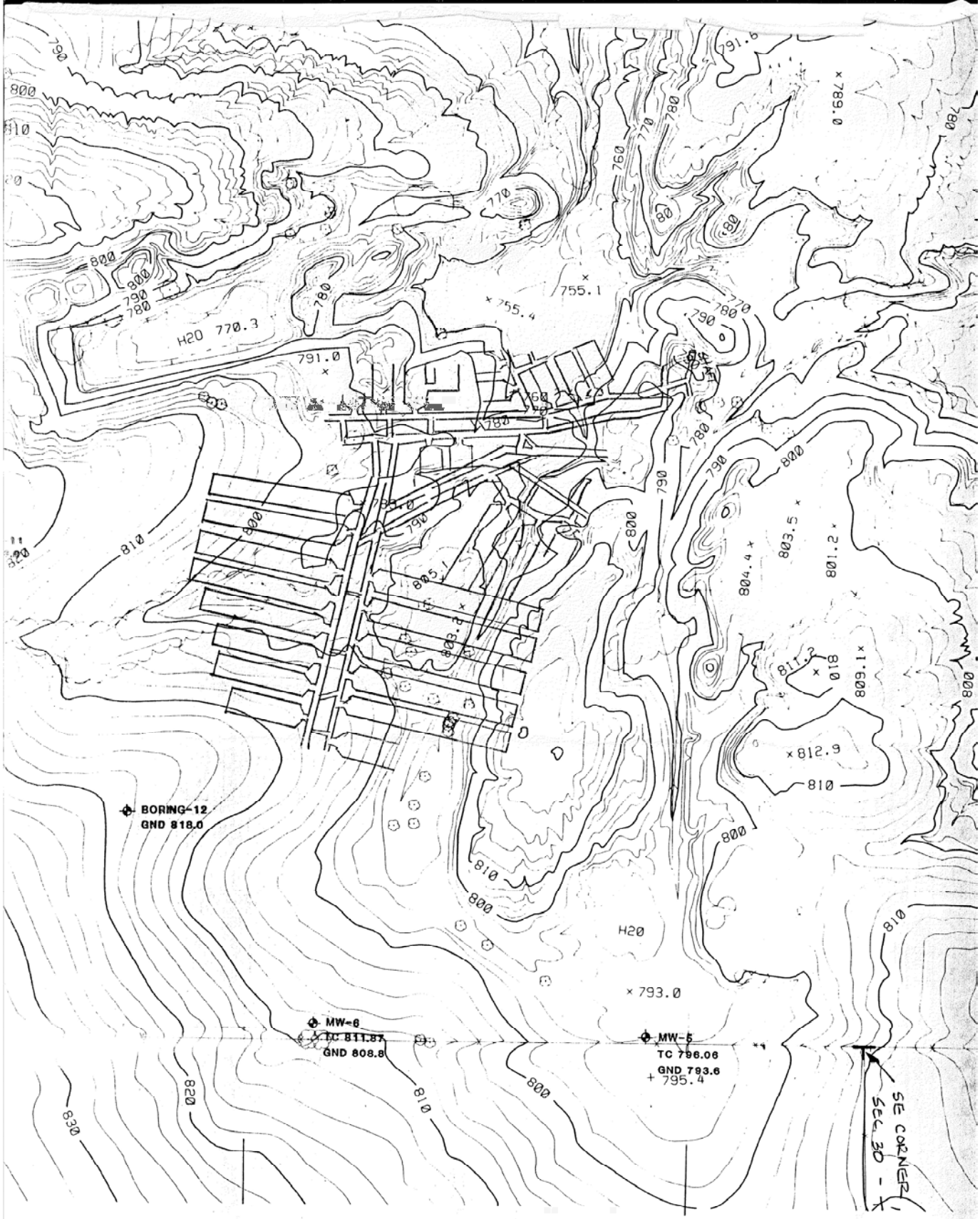
NO.	DATE	BY	REVISION DESCRIPTION

Howard R. Green Company
CONSULTING ENGINEERS

CARGILL, INC.
EDDYVILLE CORN PLANT
EDDYVILLE, IOWA
1989

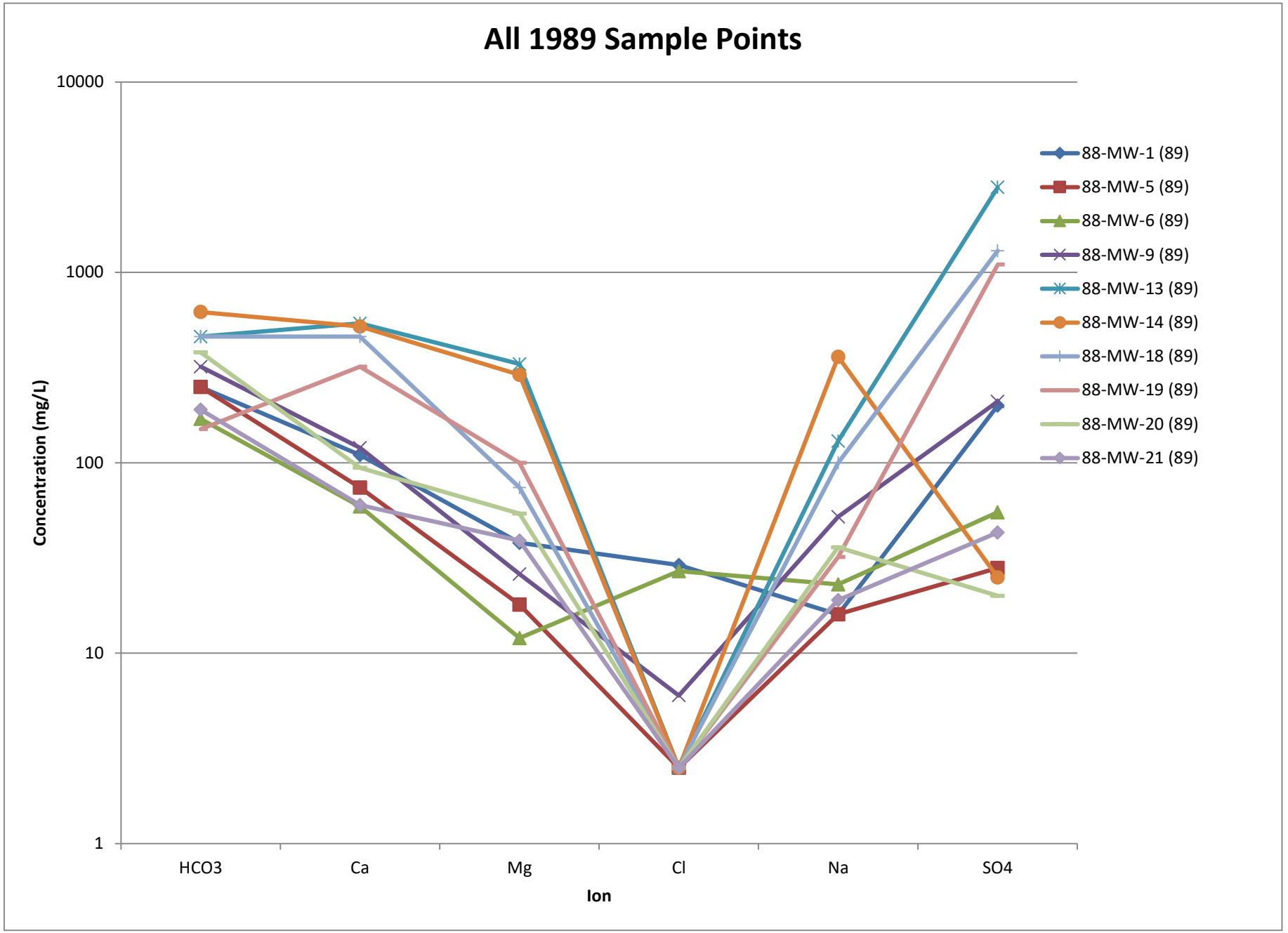
LIME SLUDGE, FLYASH, AND GYPSUM LANDFILL
EXPOSED GEOLOGY OF SITE

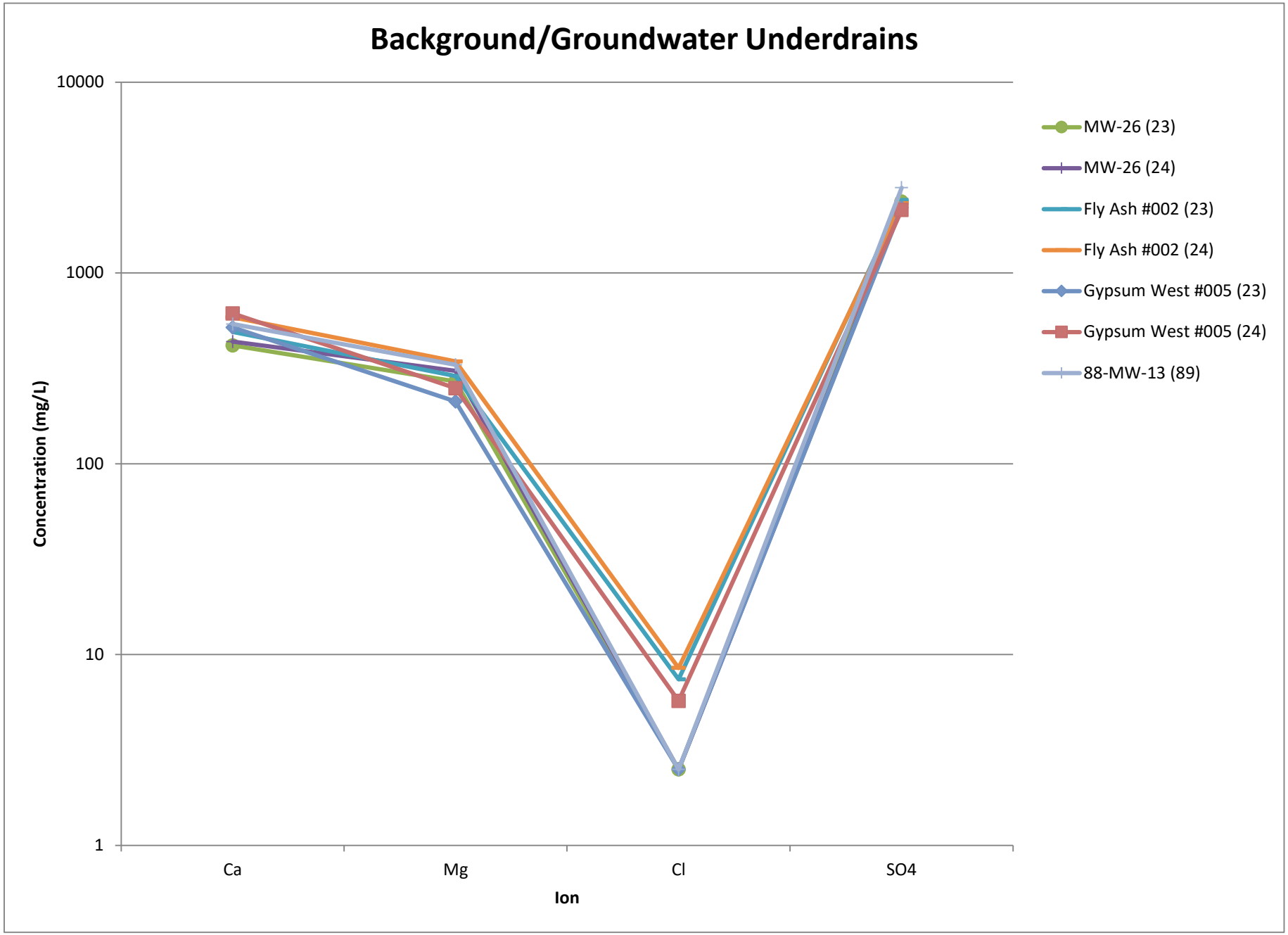
SHEET NO.
FIGURE
6



REVISION DESCRIPTION

Howard R. Green Company


All 1989 Sample Points
10000
1000
100
10
1
Concentration (mg/L)
HCO3
Ca
Mg
Cl
Na
SO4
Ion
88-MW-1 (89)
88-MW-5 (89)
88-MW-6 (89)
88-MW-9 (89)
88-MW-13 (89)
88-MW-14 (89)
88-MW-18 (89)
88-MW-19 (89)
88-MW-20 (89)
88-MW-21 (89)


Background/Groundwater Underdrains
10000
1000
100
10
1
Concentration (mg/L)
Ca
Mg
Cl
SO4
Ion
MW-26 (23)
MW-26 (24)
Fly Ash #002 (23)
Fly Ash #002 (24)
Gypsum West #005 (23)
Gypsum West #005 (24)
88-MW-13 (89)

Appendix G

Proposed Statistical Methodology for Intrawell Prediction Limits

Statistical Method and Output

Purpose

The purpose of this document is to provide the process of statistical evaluation of groundwater analytical data collected from the monitoring network.

Diagnostic and Exploratory Evaluations and Tests of Assumptions

The detection and assessment monitoring statistical programs include diagnostic and exploratory evaluations and statistical tests of assumptions, as appropriate, including the following:

- Time Series Plots
- Shapiro-Wilk test for normality
- Ohio Environmental Protection Agency (EPA) Method for outliers
- Mann-Kendall/Sen's Slope trend test

Management of Non-Detect Data

Non-detect values in the dataset are managed using simple substitution or the Kaplan-Meier estimator. If less than 15% of the data were non-detects, simple substitution is used, where non-detect values are assigned a concentration of one-half (½) of the practical quantification limit (PQL). If greater than 15% but less than 50% of the data are non-detects, the Kaplan-Meier estimator is used to define the distribution for the dataset. If non-detects comprise greater than 50% of the available data, non-parametric statistical methods are used.

Management of Outliers

Background datasets are evaluated for outliers using the Ohio EPA Method as included in the Sanitas™ statistical software program and described below, which includes the use of Dixon's, Rosner's, and Tukey's outlier tests, as appropriate based on the diagnostic tests, for the datasets that contain less than 75% of the measured concentrations below the PQL. Outliers are not confirmed unless a physical cause or explanation for the outlier is determined.

Management of Data (ND data < 75%)

If less than 75% of the background dataset is below the PQL, outliers are statistically evaluated using the following guidelines.

- A parametric dataset with n < 20 was evaluated with the Dixon's outlier test.
- A parametric dataset with n ≥ 20 was evaluated with the Rosner's outlier test.
- A non-parametric dataset was evaluated with the Tukey's outlier test.

In accordance with the Ohio EPA Method, if a statistically significant outlier is not found using the above tests, but the highest value data point exceeds the second highest data point by an order of magnitude, the highest point is considered an outlier.

Management of Data (ND data ≥ 75%)

If greater than or equal to 75% of the background dataset is less than the PQL, outliers are statistically evaluated using the following guidelines.

- Single detection ≥ the PQL:
  - If ≥ 50% of the background dataset has detections ≥ the method detection limit (MDL), any value ≥ two times the PQL of background is considered an outlier.
  - If < 50% of the background dataset has detections ≥ the MDL, any value ≥ the PQL of background is considered an outlier.

- Two or more detections ≥ the PQL:
  - If ≥ 50% of the background dataset has detections ≥ the MDL, any value ≥ three times the PQL of background is considered an outlier.
  - If < 50% of the background dataset has detections ≥ the MDL, any value ≥ two times the PQL of background is considered an outlier.

Confirmed outliers, if any, are shown in the Summary of Groundwater Chemistry included in the Annual Water Quality Report.

Detection Monitoring Statistical Program

The detection monitoring statistical program for the Cargill Sweeteners - North America - CCR Landfill is based on the EPA's Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities (EPA 530/R-09-007). Intrawell prediction limits with retesting were selected as the appropriate statistical method for the determination of statistically significant increases (SSIs) over background for inorganic constituents with historical detections in the background dataset. Prediction limits are established using the process below. Data from the most recent sampling event is compared to the prediction limits for the determination of SSIs.

Intrawell Prediction Limits with Retesting

- If the dataset has a normal distribution (or can be transformed to a normal distribution using Ladder of Powers), parametric intrawell prediction limits are calculated if at least six datasets have been collected.
- If the dataset does not have a normal distribution (and cannot be transformed to a normal distribution using Ladder of Powers) or has greater than 50% non-detects, nonparametric intrawell prediction limits are calculated if at least six datasets have been collected.
- If an SSI above the prediction limit is indicated, retesting samples using the 1-of-3 retesting scheme should be collected prior to the next regularly scheduled sampling event with temporal sample spacing consideration to provide samples with greater independence. If the retesting results are both above the prediction limit, the SSI is confirmed, and the monitoring well should be placed into the assessment monitoring program or discharge from the monitoring point should be treated with the leachate for groundwater underdrains. If any retesting sample concentration is below the prediction limit, the SSI is not confirmed, and the monitoring point continues in the detection monitoring program.

Updating the Background Dataset for Intrawell Prediction Limits

If no SSI is confirmed for any two-year period, the intrawell background dataset will be updated using the following procedure:

- Test for normality (normal distribution) of the dataset either outright or through a transformation using Ladder of Powers:
  - Shapiro-Wilk test
- Test for statistically significant trends:
  - Mann-Kendall/Sen's Slope trend test

If an increasing trend is detected, the monitoring point will be placed into the assessment monitoring program or the discharge treated with the leachate for groundwater underdrain discharge points.

- If the dataset has a normal distribution and no trend is present, conduct a two-sample Welch's t-test at a 0.01 significance level to compare current background to the most recent two years of detection monitoring data.

If Welch's t-test test is significant and shows that the most recent two years of concentration data appear to be increasing, the background will not be updated.

- If the dataset does not a have normal distribution and no trend is present, conduct a two-sample non-parametric Wilcoxon rank-sum test (also known as the Mann-Whitney test) at a 0.01 significance level to compare current background to the most recent two years of detection monitoring data.

If the Wilcoxon rank-sum test is significant and shows that the most recent two years of concentration data appear to be increasing, the background will not be updated.

- If the Welch's t-test and the Wilcoxon rank-sum test are not significant, the most recent two years of detection monitoring data will be added to the intrawell background dataset.
- Establish prediction limits based on the updated intrawell background dataset.

The process will repeat every two years in which an SSI is not confirmed.

Double Quantification Method

The quasi-statistical "double quantification" method is used for constituents not detected in the associated background data set. If a constituent is detected in the compliance dataset that has not been historically detected in the background dataset, that constituent must be retested before the next regularly scheduled sampling event. If the retesting results confirm the original detection with a quantifiable detection, the SSI is confirmed, and the monitoring point must be placed into the assessment monitoring program.

Assessment Monitoring Statistical Program

Confidence intervals or confidence bands, as appropriate, were selected as the appropriate statistical methods for comparison of the groundwater analytical data against a fixed groundwater protection standard (GWPS). The assessment monitoring statistical evaluations are performed using the most recent eight samples or all samples if less than eight samples were available. The confidence intervals or confidence bands used for the assessment monitoring statistical evaluation are established using the process below. Transformation of the distribution is not considered.

Confidence Intervals or Confidence Bands

- A parametric confidence interval around a normal mean is calculated if the dataset has a normal distribution and no statistically significant trend is present.
- A non-parametric confidence interval around a median is calculated if the dataset does not have a normal distribution and no statistically significant trend is present.
- Non-parametric confidence bands around a Theil-Sen trend line are calculated if the dataset has a statistically significant trend.

Appendix H

2024 Leachate Control System Performance Evaluation Report

Table H1
Leachate Management Summary
2024 Leachate Control System Performance Evaluation Report
Cargill CCR Landfill
Permit No. 62-SDP-04-89C

Date of Measurement	Manhole Leachate Head (ft)																			Volume Applied to Final Landfill Cover (gal)	Discharge to Ottumwa POTW (gal)	Discharge to Cargill-Eddyville Treatment Plant (gal)	Precipitation (in)
	MH 1	MH 2	MH 3	MH 4	MH 5	MH 6	MH 7	MH 8	MH 9	MH 10	MH 11	MH 12	MH 13	MH LF	MH 14	MH 15	MH 16*	CS 1*	SW MH				
December 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.30
January 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.45
February 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.18
March 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.56
April 2024	0.84	0.43	0.78	0.65	Dry	Dry	Dry	Dry	Dry	0.38	Dry	Dry	Dry	0.25	0.64	0.55	6.87	2.74	1.42	-	-	-	5.42
May 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	204,000	5.20
June 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30,000	2.16
July 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.00
August 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.00
September 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	90,000	0.71
October 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	2.89
Reporting Period Total																				0	0	324,000	33.87

Notes:
1) *MH 16 is the mine manhole (MH) that extends beneath the liner. CS 1 is the outfall manhole of the lagoon. Both are not applicable to head levels on the liner.
2) Precipitation data for December 2023 - October 2024 obtained from weather.gov.

Comments:

Reporting Period: December 2023 - October 2024.
Approved Changes to Leachate Collection System: None.
Proposed Changes to Leachate Collection System: None.
Maintenance Performed on Leachate Collection System: None.
Volume of Leachate Recirculated or Applied to Landfill Cover: None.
Volume of Leachate Treated Off-Site: 324,000 gallons were transported to the Cargill-Eddyville Treatment Plant.

Leachate Control System Performance Evaluation

Legend

- Leachate Manhole
- Approximate Location of Leachate Line
- Monitoring Well
- Approximate Location of Fence
- Approximate Location of Waste Boundary
- Approximate Location of Property Boundary
- Office Structure

Cargill CCR Landfill
Eddyville, IA
Project No: 27224433.00
Drawing Date: November 2024

Figure 1

N E S W

0 145 290 580 Feet

SCS ENGINEERS
environmental consultants and contractors

Esri, CGIAR, USGS, Esri, TomTom, Garmin, Foursquare, FAO, METI/NASA, USGS, USDA NAIP, Iowa State University GIS Facility

Path: C:\Users\lmadison\OneDrive - SCS Engineers\Desktop\GIS\Maps\Cargill - Eddyville\2024 AWOR\Cargill-2024-AWOR.aprx
User: lmadison
Date Saved: 10/31/2024 10:57 AM

Appendix I

Monthly Post-Closure Landfill Inspection Reports

Landfill Post-Closure Monthly Observation Checklist					
Facility Information					
Facility:	Cargill Eddyville CCR Landfill	**Permit #**	Post Closure Permit Not issued yet		
Location:	Eddyville, Iowa	**Type:**	CCR Landfill		
Inspection Conditions					
Inspector	Ben Johannsen		**Date and Time**	12:00 5/23/24	
Leachate Pond Level	23', Ecosystems hauling				
Weather Conditions					
Wind:	11 MPH	**Temperature:**	70°F	**Other:**	

A. General Conditions			
1. Are Storm Water Control Structures (Sedimentation basns, Terraces, Letdowns, Culverts) in good condition?	**Yes** X	**No**	**Comments**
B. Final Cover			
1) Is there adequate growth of grass on the final cover?	**Yes** X	**No**	**Comments**
2) Is there Evidence of settlement or depressions in the final cover?	**Yes**	**No** X	**Comments**
3) Is there evidence of ponding water on the final cover?	**Yes**	**No** X	**Comments** Ponding visable not over cells
4) Is there Evidence of erosion of the final cover?	**Yes**	**No** X	**Comments**
5) Is there evidence of sediment build-up in the storm water structures on or off-site?	**Yes**	**No** X	**Comments**
6) Are there trees, shrubs, or other unwated plants growing on the final cover?	**Yes**	**No** X	**Comments**
C. Miscellaneous Requirements			
1) Is there evidence of leachate seeps? If yes, not if flowing or not?	**Yes**	**No** X	**Comments**

Note any Repairs to be made or that have been made, include locations on a site map or describe below

CCR Landfill SWPPP inspection					
Frequency:	monthly				
Weekly required if construction activities are occurring for closure or Quarterly if no construction is					
This inspection is:		Weekly (Construction	X	Quarterly (no construction occuring)	
Inspector:	Ben Johannsen				
Date:	5/23/24				

Items covered in Inspection:		
Adequate	Inadequate*	must document corrective actions if any finding is inadequate
X		Cover materials are applied prior to adverse weather and to prevent
X		Leachate load and haul area is accessible and well maintained.
X		The site is graded and drains in a manner which prevents water flow onto
X		The finished surface of the fill area is covered with soil and seeded
X		Two (2) feet of compacted earth cover is applied to areas not utilized for
X		The SWPPP is correct and the GP1 is adequate for the coverage period.

*Corrective Action or Comment on Inspection:

Landfill Post-Closure Monthly Observation Checklist					
Facility Information					
Facility:	Cargill Eddyville CCR Landfill		**Permit #**	Post Closure Permit Not issued yet	
Location:	Eddyville, Iowa		**Type:**	CCR Landfill	
Inspection Conditions					
Inspector	Ben Johannsen			**Date and Time**	6/7/24 14:39
Leachate Pond Level	67"				
Weather Conditions					
Wind:	4 mph	**Temperature:**	84°	**Other:**	Sunny

A. General Conditions			
1. Are Storm Water Control Structures (Sedimentation basns, Terraces, Letdowns, Culverts) in good condition?	**Yes** X	**No**	**Comments**
B. Final Cover			
1) Is there adequate growth of grass on the final cover?	**Yes** X	**No**	**Comments**
2) Is there Evidence of settlement or depressions in the final cover?	**Yes**	**No** X	**Comments**
3) Is there evidence of ponding water on the final cover?	**Yes**	**No** X	**Comments**
4) Is there Evidence of erosion of the final cover?	**Yes**	**No** X	**Comments**
5) Is there evidence of sediment build-up in the storm water structures on or off-site?	**Yes**	**No** X	**Comments**
6) Are there trees, shrubs, or other unwated plants growing on the final cover?	**Yes**	**No** X	**Comments**
C. Miscellaneous Requirements			
1) Is there evidence of leachate seeps? If yes, not if flowing or not?	**Yes**	**No** X	**Comments**

Note any Repairs to be made or that have been made, include locations on a site map or describe below

CCR Landfill SWPPP inspection					
Frequency:					
Weekly required if construction activities are occurring for closure or Quarterly if no construction is					
This inspection is:		**Weekly (Construction**	X	**Quarterly (no construction occuring)**	X
Inspector:	Ben Johansen				
Date:	6/7/2024				

Items covered in Inspection:		
Adequate	**Inadequate***	**must document corrective actions if any finding is inadequate**
X		**Cover materials are applied prior to adverse weather and to prevent**
X		**Leachate load and haul area is accessible and well maintained.**
X		**The site is graded and drains in a manner which prevents water flow onto**
X		**The finished surface of the fill area is covered with soil and seeded**
X		**Two (2) feet of compacted earth cover is applied to areas not utilized for**
X		**The SWPPP is correct and the GP1 is adequate for the coverage period.**

***Corrective Action or Comment on Inspection:**

may need to look into erosion repair on side of the road between cells

Landfill Post-Closure Monthly Observation Checklist					
Facility Information					
Facility:	Cargill Eddyville CCR Landfill		**Permit #**	Post Closure Permit Not issued yet	
Location:	Eddyville, Iowa		**Type:**	CCR Landfill	
Inspection Conditions					
Inspector	Ben Johannsen			**Date and Time**	7/12/2024 2:30pm
Leachate Pond Level	59"				
Weather Conditions					
Wind:	4 west	**Temperature:**	82F	**Other:**	Sunny

A. General Conditions			
1. Are Storm Water Control Structures (Sedimentation basns, Terraces, Letdowns, Culverts) in good condition?	**Yes**	**No**	**Comments**
	X		

B. Final Cover			
1) Is there adequate growth of grass on the final cover?	**Yes**	**No**	**Comments**
	X		
2) Is there Evidence of settlement or depressions in the final cover?	**Yes**	**No**	**Comments**
		X	
3) Is there evidence of ponding water on the final cover?	**Yes**	**No**	**Comments**
		X	
4) Is there Evidence of erosion of the final cover?	**Yes**	**No**	**Comments**
		X	
5) Is there evidence of sediment build-up in the storm water structures on or off-site?	**Yes**	**No**	**Comments**
		X	
6) Are there trees, shrubs, or other unwated plants growing on the final cover?	**Yes**	**No**	**Comments**
		X	

C. Miscellaneous Requirements			
1) Is there evidence of leachate seeps? If yes, not if flowing or not?	**Yes**	**No**	**Comments**
		X	

Note any Repairs to be made or that have been made, include locations on a site map or describe below

CCR Landfill SWPPP inspection				
Frequency:				
Weekly required if construction activities are occurring for closure or Quarterly if no construction is				
This inspection is:		**Weekly (Construction**	**X**	**Quarterly (no construction occuring)**
Inspector:	**Benjamin Johannsen**			
Date:	**7/12/2024**			

Items covered in Inspection:		
Adequate	**Inadequate***	**must document corrective actions if any finding is inadequate**
X		**Cover materials are applied prior to adverse weather and to prevent excessive dust.**
X		**Leachate load and haul area is accessible and well maintained.**
X		**The site is graded and drains in a manner which prevents water flow onto fill areas, significant erosion, and ponding.**
X		**The finished surface of the fill area is covered with soil and seeded**
X		**Two (2) feet of compacted earth cover is applied to areas not utilized for more than two (2) months.**
X		**The SWPPP is correct and the GP1 is adequate for the coverage period.**

***Corrective Action or Comment on Inspection:**

LANDFILL POST-CLOSURE MONTHLY OBSERVATION CHECKLIST

FACILITY INFORMATION

Facility:	Cargill Sweeteners - North America Landfill - CCR	Permit No.:	62-SDP-04-89C
Location:	Eddyville, Iowa	Permit Issued:	July 12, 2024
Type:	CCR Landfill (Closed)	Permit Expires:	May 16, 2034

INSPECTION INFORMATION

Inspector:	Kevin Jensen	Date and Time:	8/28/24 8:00 am
Other:	Steve Phillips, Mike Septer		

WEATHER CONDITIONS

Wind:	0-5 mph	Temperature:	70 °F
Other:	Dew		

A. GENERAL CRITERIA	Yes	No	Comments
1) Are storm water control structures (sedimentation basins, terraces, letdowns, culverts) in good condition?	X		

B FINAL COVER	Yes	No	Comments
1) Is there adequate growth of grass on the final cover?	X		
2) Is there evidence of settlement or depressions in the final cover?		X	
3) Is there evidence of ponding water on the final cover?		X	
4) Is there evidence of erosion of the final cover?		X	
5) Is there evidence of sediment build-up in storm water structures on- or off-site?		X	
6) Are there trees, shrubs, or other unwanted plants growing on the final cover?		X	

C. MISCELLANEOUS REQUIREMENTS	Yes	No	Comments
1) Is there evidence of leachate seeps? If yes, note if flowing or not.		X	

Note any repairs that need to be made or that were made. Include locations on a site map or describe below.

LANDFILL POST-CLOSURE MONTHLY OBSERVATION CHECKLIST

FACILITY INFORMATION

Facility:	Cargill Sweeteners - North America Landfill - CCR	Permit No.:	62-SDP-04-89C
Location:	Eddyville, Iowa	Permit Issued:	July 12, 2024
Type:	CCR Landfill (Closed)	Permit Expires:	May 16, 2034

INSPECTION INFORMATION

Inspector:	Kevin Jensen	Date and Time:	9/27/24 9:30am
Other:	Semir Omerovic		

WEATHER CONDITIONS

Wind:	0-5 mph	Temperature:	65° F.
Other:	Dry		

A. GENERAL CRITERIA	Yes	No	Comments
1) Are storm water control structures (sedimentation basins, terraces, letdowns, culverts) in good condition?	X		

B FINAL COVER	Yes	No	Comments
1) Is there adequate growth of grass on the final cover?	X		
2) Is there evidence of settlement or depressions in the final cover?		X	
3) Is there evidence of ponding water on the final cover?		X	
4) Is there evidence of erosion of the final cover?		X	
5) Is there evidence of sediment build-up in storm water structures on- or off-site?		X	
6) Are there trees, shrubs, or other unwanted plants growing on the final cover?		X	

C. MISCELLANEOUS REQUIREMENTS	Yes	No	Comments
1) Is there evidence of leachate seeps? If yes, note if flowing or not.		X	

Note any repairs that need to be made or that were made. Include locations on a site map or describe below.

LANDFILL POST-CLOSURE MONTHLY OBSERVATION CHECKLIST

FACILITY INFORMATION

Facility: Cargill Sweeteners - North America Landfill - CCR
Location: Eddyville, Iowa
Type: CCR Landfill (Closed)
Permit No.: 62-SDP-04-89C
Permit Issued: July 12, 2024
Permit Expires: May 16, 2034

INSPECTION INFORMATION

Inspector: Semir Omerovic
Other:
Date and Time: 10/16/24 at 11:27

WEATHER CONDITIONS

Wind: 9 mph
Other: Dry
Temperature: 59 °F.

	Yes	No	Comments
A. GENERAL CRITERIA			
1) Are storm water control structures (sedimentation basins, terraces, letdowns, culverts) in good condition?	X		
B FINAL COVER	Yes	No	Comments
1) Is there adequate growth of grass on the final cover?	X		
2) Is there evidence of settlement or depressions in the final cover?		X	
3) Is there evidence of ponding water on the final cover?		X	
4) Is there evidence of erosion of the final cover?		X	
5) Is there evidence of sediment build-up in storm water structures on- or off-site?		X	
6) Are there trees, shrubs, or other unwanted plants growing on the final cover?		X	
C. MISCELLANEOUS REQUIREMENTS	Yes	No	Comments
1) Is there evidence of leachate seeps? If yes, note if flowing or not.		X	

Note any repairs that need to be made or that were made. Include locations on a site map or describe below.

LANDFILL POST-CLOSURE MONTHLY OBSERVATION CHECKLIST

FACILITY INFORMATION

Facility:	Cargill Sweeteners - North America Landfill - CCR	Permit No.:	62-SDP-04-89C
Location:	Eddyville, Iowa	Permit Issued:	July 12, 2024
Type:	CCR Landfill (Closed)	Permit Expires:	May 16, 2034

INSPECTION INFORMATION

Inspector:	Semir Omerovic	Date and Time:	11/8/24 at 10:42
Other:			

WEATHER CONDITIONS

Wind:	3mph	Temperature:	58 °F.
Other:			

A. GENERAL CRITERIA	Yes	No	Comments
1) Are storm water control structures (sedimentation basins, terraces, letdowns, culverts) in good condition?	X		

B FINAL COVER	Yes	No	Comments
1) Is there adequate growth of grass on the final cover?	X		
2) Is there evidence of settlement or depressions in the final cover?		X	
3) Is there evidence of ponding water on the final cover?		X	
4) Is there evidence of erosion of the final cover?		X	
5) Is there evidence of sediment build-up in storm water structures on- or off-site?		X	
6) Are there trees, shrubs, or other unwanted plants growing on the final cover?		X	

C. MISCELLANEOUS REQUIREMENTS	Yes	No	Comments
1) Is there evidence of leachate seeps? If yes, note if flowing or not.		X	

Note any repairs that need to be made or that were made. Include locations on a site map or describe below.