Cuba Municipal Waste Disposal Site

ALLEGANY COUNTY, NEW YORK

Periodic Review Report (2023-2024)

NYSDEC Site Number: 902012

Prepared for:

Village of Cuba 17 East Main Street Cuba, New York 14727



Prepared by:



280 East Broad Street, Suite 170 Rochester, NY 14604

February 2024

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Executive Summary

The Cuba Landfill Site (the "Site") is a 39.78-acre former waste disposal facility located on Jackson Hill Road in the Town of Cuba, Allegany County, New York. The Site is owned by the Village of Cuba and was operated by the Village of Cuba from the 1950s to the 1980s. The New York State Department of Environmental Conservation (NYSDEC) and the Village of Cuba entered into an Order on Consent to close the Cuba Landfill. This Order on Consent required the remedial parties, NYSDEC and the Village of Cuba, to investigate and remediate contaminated media at the Site.

During the Remedial Investigation (RI) conducted at the Site in 1999, waste material, soil, groundwater, air, leachate, and sediment samples were collected to characterize the nature and extent of contamination. Results of the Cuba Landfill RI indicated that Site waste included a source of contamination that presented a threat to the environment and that off-Site contaminant migration was occurring. Analytical results showed that the contaminants of concern, identified as volatile organic compounds (VOCs) and polychlorinated biphenyls (PCBs), were present in relatively low concentrations and were typical of unlined landfills that received domestic and industrial waste.

The Record of Decision, dated June 2000, authorized the selected remedy of the installation of a low permeability cap with passive gas venting, an up-gradient surface water diversion, a phytoremediation system for control of leachate, and long-term groundwater monitoring. A series of monitoring wells were installed at the Site during the remedial process as part of the long-term groundwater monitoring program. The monitoring of these wells, among other tasks, is summarized in this Periodic Review Report (PRR).

Operation, maintenance, and monitoring activities associated with the remedial action implementation are conducted at the Cuba Landfill as part of ongoing implementation of the Site Management Plan (SMP). These monitoring activities provide data to evaluate remedy performance, effectiveness, and protectiveness. As a component of the SMP, annual Site inspections are conducted in addition to groundwater, surface water, and landfill gas evaluation events.

Remedy performance monitoring data obtained during this reporting period indicate the remedies implemented continue to perform as expected, are effective, protective, and progressing toward the remedial action objectives during this reporting period. Chlorinated VOC (cVOC) exceedances occurred relative to 6 New York Codes, Rules and Regulations (6 NYCRR) Part 703.5 Class GA Ambient Groundwater Quality Standards (Part 703.5 AWQS) at five (5) wells in September 2023. The data indicate that groundwater VOC concentrations have generally decreased since remedy implementation; inorganic concentrations continue to exhibit fluctuations. As indicated by the data, surface water quality does not appear to be impacted by surface water runoff from the Site. Additionally, an off-Site downgradient private supply well sampled during this reporting period does not appear to be impacted by groundwater from the Site.

1.0 Introduction

This PRR was prepared by Lu Engineers, on behalf of the Village of Cuba, in accordance with the requirements set forth in NYSDEC Department of Environmental Remediation (DER)-10 Technical Guidance for Site Investigation and Remediation, dated May 2010, and the guidelines set forth by NYSDEC. The first PRR was required 14 months after the final completion of construction in May 2010. The reporting period for this PRR is from January 25, 2023, to January 25, 2024. The following items are included in this PRR:

- Identification, assessment, and certification of each EC/institutional controls (IC) required by the remedy for the Site.
- Results of the Site inspection and sampling events including applicable inspection forms and other records generated for the Site during the reporting period.
- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions.
- Data summary tables of groundwater and surface water contaminants of concern. These
 include a presentation of past VOC data as part of an evaluation of contaminant
 concentration trends.
- Laboratory analytical results, and the required laboratory data deliverables for each sample collected during the reporting period have been and will continue to be submitted electronically in a NYSDEC-approved EQuIS format.
- A Site evaluation, which includes the following:
 - I. The compliance of the remedy with the requirements of the Site-specific record of decision (ROD).
 - II. The operation and the effectiveness of each treatment unit, including identification of any needed repairs or modifications.
 - III. Any new conclusions or observations regarding Site contamination based on inspection or lab data generated during the monitoring events.
 - IV. Recommendations regarding any necessary changes to the remedy and/or SMP.
 - V. The overall performance and effectiveness of the remedy to date.

2.0 Site Overview

2.1 Introduction

The Cuba Landfill is a 39.78-acre former waste disposal facility located in the Town of Cuba, Allegany County, New York. The Site is bordered to the north by Deep Snow Road and a hay field, and to the west, east, and south by undeveloped wooded lands. The topography of the Site slopes steeply to the south. The landfill ground cover consists primarily of mowed grass. Storm water drainage trenches oriented north-south and lined with rip-rap exist on the western portion of the landfill cap. These swales drain to a storm water detention pond at the toe of the slope. An unnamed intermittent tributary of the north branch of Van Campen Creek closely parallels the eastern border.

The boundaries of the Site are more fully described in the metes and bounds Site description that is a component of the NYSDEC's Declaration of Covenants and Restrictions. The Site is accessed via Jackson Hill Road and the seasonal Deep Snow Road.

The NYSDEC and the Village of Cuba entered into an Order on Consent (No. B9-461-94-09) to close the Cuba Landfill. This Order on Consent required the remedial parties, NYSDEC and the Village of Cuba, to investigate and remediate contaminated media at the Site. In 2013, the Village of Cuba purchased a 10-acre rectangular parcel of land that adjoins the Site to the immediate south. This parcel is not considered part of the definition or boundary of the Site. Off-Site monitoring wells MW-7, MW-10 and MW-10D are contained within the boundary of this 10-acre parcel.

2.2 Background

Starting in the early 1950s, household, commercial, and industrial wastes were disposed of within the Cuba Landfill. The Village of Cuba acquired the Site in 1967 and operated it as an un-permitted municipal landfill. The facility was issued a sanitary landfill permit in 1979 by the NYSDEC and became inactive in approximately 1981. The landfill was inspected on a regular basis by NYSDEC until the Village completed an approved closure plan in 1987.

In 1994, results of Phase II Preliminary Site Assessment (PSA) were completed for the NYSDEC to determine if the Site qualified for the New York State Registry of Inactive Hazardous Waste Disposal Sites (IHWDS). Results of testing at the Site conducted by URS Consultants, Inc. indicated the presence of VOCs in Site groundwater and leachate and confirmed the disposal of hazardous waste including solvents, plating wastes, PCB capacitors, and paint sludges. Based on these findings and the confirmed disposal of hazardous waste including solvents, plating wastes, PCB capacitors, and paint sludges, the Site was reclassified from Class 2 to Class 2 (significant threat to public health or the environment; action required) in 1994.

During the RI conducted at the Site in 1999 and subsequent confirmatory sampling events, waste material/soil, groundwater, air, leachate, and sediment samples were collected to characterize the nature and extent of the contamination. The RI results indicated that the Site was a source of contamination and that there was migration of contaminants off-Site. Analytical testing results showed that contaminants of concern (VOCs and PCBs) were present in relatively low concentrations typical of unlined landfills that receive domestic and industrial waste. The following presents a summary of the RI activities and findings:

- Soil –12 surface soil locations were sampled. Phenol, Aroclor 1260, and several metals including arsenic, beryllium, cobalt, copper, iron, nickel, selenium, and zinc were detected at concentrations above applicable standards, criteria, and guidelines (SCGs).
- Upper Bedrock Groundwater Predominantly impacted with VOCs in excess of applicable standards. Limited exceedances of SVOCs, pesticides, and metals were detected.
- Surface Water Sediment One (1) sample from the southwest corner of the property contained phenol, and metals exceeding applicable SCGs. Upgradient and downgradient samples from both tributaries contained similar concentrations of metals.
- Groundwater Springs Groundwater springs located downgradient and at various off-Site locations contained VOCs, endrin, Aroclor 1260, and metals were detected at concentrations exceeding SCGs.

In 2008, the NYSDEC issued a work authorization to EA to provide construction, administration, and inspection services at the Cuba Landfill Site. EA was also retained to provide inspection services during construction activities, and to prepare the Final Engineering Report (FER) for these activities.

D'Virka and Bartilucci Consulting Engineers was the design engineer of record for the landfill closure. The NYSDEC awarded the landfill closure contract to Modern Environmental Group, Inc. (Modern) for the construction activities. The Site was remediated in accordance with the NYSDEC-approved remedial design dated February 2008. The overall goal of the remedial actions at the Site is protection of human health and the environment and meeting relevant SCGs. Specific remedial action objectives are as follows:

- Eliminate, to the extent practicable, direct human or animal exposure to waste in the landfill.
- Eliminate, to the extent practicable, the migration of contaminants from the landfill to groundwater.
- Reduce, control, or eliminate, to the extent practicable, the generation of leachate within the landfill mass.
- Eliminate, to the extent practicable, ingestion of groundwater affected by the Site that does not meet 6 NYCRR 703.5 Class GA Ambient Water Quality Criteria.
- Eliminate, to the extent practicable, off-Site migration of groundwater that does not meet 6 NYCRR Part 703.5 Class GA Ambient Water Quality Criteria.

After completion of the remedial work as specified within the February 2008 Contract Documents (Contract D006905), residual contamination remained in the subsurface at the Site. Engineering controls (ECs) were incorporated into the Site remedy to control exposure to remaining contamination during the use of the Site to ensure protection of public health and the environment.

In accordance with the New York State Solid Waste Management Facilities Regulations (6NYCRR Part 360-2.15[k][4]) and the Site-specific SMP, environmental monitoring and sampling points have been, and continue to be maintained, monitored, and sampled to evaluate surface water and groundwater quality and assess potential residual impacts to the environment immediately surrounding the landfill to support eventual Site closure.

A chronology of the significant actions/events of the remedial program for the Site is presented in the following table.

CUBA LANDFILL PERIODIC REVIEW REPORT REMEDY IMPLE	EMENTATION CHRONOLOGY
Significant Action/Event	Date
Phase I –PSA	October 1990
Phase II –PSA	January 1994
RI Report ⁽¹⁾	July 1999
Feasibility Study Report ⁽²⁾	December 1999
Record of Decision ⁽³⁾	June 2000
Remedial Design Work Plan ⁽⁴⁾	June 2001
Pre-Design Investigation Report	October 2003
Remedy Design Completion	February 2008
NYSDEC Design Approval	April 2008
Project Health and Safety Plan	April 2008
Remedy Implementation	September 2008
Substantial Completion	October 2009
NYSDEC Approval of Remedy Construction Completion (Final Completion)	May 2010
Site-Specific Quality Assurance Project Plan Addendum	January 2011

CUBA LANDFILL PERIODIC REVIEW REPORT REMEDY IMPLEME	NTATION CHRONOLOGY
Significant Action/Event	Date
First Quarterly Report ⁽⁵⁾	April 2011
NYSDEC Site Management Plan Approval	August 2011
Second Quarterly Report ⁽⁵⁾	July 2011
Annual Report No. 1, May 2010 – July 2011 ⁽⁵⁾	September 2011
Declaration of Covenants and Restrictions	October 2011
Periodic Review Report ⁽⁵⁾	November 2011
Third Quarterly Report (July/August 2011 event) ⁽⁵⁾	December 2011
Fourth Quarterly Report (November 2011 event) ⁽⁵⁾	April 2012
Fifth Quarterly Report (February 2012 event) ⁽⁵⁾	June 2012
Sixth Inspection/Monitoring Report (July 2014 event, Lu Engineers)	July 2014
Seventh Inspection/Monitoring Report (November 2014 event, Lu Engineers)	November 2014
Eighth Inspection/Monitoring Report (June 2015 event, Lu Engineers)	February 2016
Ninth Inspection/Monitoring Report (October 2016 event, Lu Engineers)	February 2017
Tenth Inspection/Monitoring Report (March 2017 event, Lu Engineers)	February 2018
Eleventh Inspection/Monitoring Report (May 2018 event, Lu Engineers)	February 2019
NYSDEC Emerging Contaminant Sampling Event	August 2018
Twelfth Inspection/Monitoring Report (September 2019 event, Lu Engineers)	February 2020
Thirteenth Inspection/Monitoring Report (October 2020 event, Lu Engineers)	February 2021
Soil Management Plan Update	October 2021
Fourteenth Inspection/Monitoring Report (March 2021 event, Lu Engineers)	February 2022
Fifteenth Inspection/Monitoring Report (April 2022 event, Lu Engineers)	February 2023
Sixteenth Inspection/Monitoring Report (April 2022 event, Lu Engineers)	February 2024

⁽¹⁾ Dvirka and Bartilucci Consulting Engineers. 1999. Remedial Investigation Report. Cuba Municipal Waste Disposal Site (Registry No. 9-02-012), Village of Cuba, Alleghany County, New York. July.

3.0 Remedy Performance, Effectiveness, and Protectiveness Evaluation

Post-remedial groundwater sampling indicates that low-level residual groundwater contamination persists at the Site since completion of remedial work. 13 post-remedial sampling events have been conducted in accordance with and as outlined in the SMP from January 2011 to September 2023.

4.0 Institutional Control/Engineering Control Compliance

The Cuba Landfill Site remedies involve the use of both ICs and ECs to protect public health and the environment. The IC/EC Plan is one (1) component of the SMP and is subject to revision by NYSDEC. ICs/ECs include the following:

Institutional Controls:

- Land Use Restriction
- Groundwater Use Restriction



⁽²⁾ Dvirka and Bartilucci Consulting Engineers. 1999. Feasibility Study Report, Cuba Municipal Waste Disposal Site (Registry No. 9-02-012), Village of Cuba, Alleghany County, New York. December.

⁽³⁾ New York State Department of Environmental Conservation. 2000. Record of Decision, Village of Cuba Municipal Waste Disposal Site, Village of Cuba, Alleghany County, Site Number 9-02-012. June.

⁽⁴⁾ Dvirka and Bartilucci Consulting Engineers. 2001. Remedial Design Work Plan, Cuba Municipal Waste Disposal Site (Registry No. 9-02-012), Village of Cuba, Alleghany County, New York. June.

⁽⁵⁾ Prepared by EA Science and Technology, an affiliate of EA Engineering, P.C.

- Excavation Work Plan
- Soil Vapor Intrusion Evaluation

Engineering Controls:

- Engineered Landfill Cap
- Passive Gas Vents
- Landfill Surface Drainage
- Leachate Phytoremediation
- Site Entrance Gates
- Access Road.

Each of the above-listed controls is described in the attached Table 4-0, which includes a description of the objective of the control, how the performance of the control is monitored, and summarizes the current performance and status of each control. Based on the information in Table 4-0, each of the ICs and ECs at the Cuba Landfill Site remain in place and continue to be effective. The required IC/EC certification has been completed as a component of this report and is included as Appendix E.

5.0 Monitoring Plan Compliance

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the Site, the soil cover system, and all affected Site media identified in the following table:

Monitoring Program	Frequency*	Matrix	Analysis
			EPA Method 8260 VOCs;
Groundwater Monitoring	Annual (rotating quarterly)	Groundwater	EPA Method 6010 TAL Metals
Groundwater Monitoring	Aillidai (lotatilig qualterly)	Groundwater	EPA Method 8270 SIM 1, 4-Dioxane
			EPA Method 537 PFAS
Surface Water Monitoring	Annual (rotating quarterly)	Surface Water	EPA Method 8260 VOCs;
Surface Water Monitoring	Allitual (Totating quarterly)	Surface Water	EPA Method 6010 TAL Metals
Private Supply Well	Annual (rotating quarterly)	Surface Water	EPA Method 8260 VOCs;
Private Supply Well	Allitual (Totating quarterly)	Surface Water	EPA Method 6010 TAL Metals
Landfill Gas Monitoring	Annual (rotating quarterly)	Organic Vapors	H ₂ S, VOC, CO, LEL O2, PID screening
Cover System Manitoring	Annual (rotating quarterly)	Soil/Geotextile Cover	Visual Inspection, determine
Cover System Monitoring	Annual (rotating quarterly)	System	applicable maintenance

^{*}The frequency of events will be conducted as specified until otherwise approved by NYSDEC

Monitoring activities completed during this reporting period included the following:

- Annual groundwater sampling of 11 monitoring wells (refer to Figure 2);
- Annual sampling of four (4) surface water locations;
- Annual landfill gas monitoring;
- Annual inspection of the Site cover system

The monitoring locations, analytical testing requirements and inspection protocols for each monitoring/sampling/inspection event are outlined in the approved SMP.

LEL: lower explosive limit, H₂S: hydrogen sulfide, CO: carbon monoxide, O₂: oxygen

Prior to sampling, groundwater wells MW-1S, MW-1D, MW-10D, MW-12 and MW-13 were evaluated for the presence of sediment and excessive turbidity using a Waterra, Inc. Hydrolift® purging system and were redeveloped on August 7 & 8, 2023 as requested by NYSDEC.

MW-1S and MW-1D were found to be free of sediment, but dry. Likewise, MW-13 was not observed to contain sediment and was pumped dry after only one (1) gallon of highly turbid purge water was removed. Water was successfully removed from MW-10D (approximately 35 gallons) and MW-12 (approximately 9 gallons). The high turbidity of water removed from these wells did not improve during the pumping process. No sediment was detected in either MW-10D or MW-12 during this process.

Based on the results of sediment evaluation, it was concluded that turbidity is related to Site groundwater conditions rather than accumulation in the subject wells. Relevant correspondence, groundwater monitoring logs and well development logs are included as Appendix A of this report.

Site wells were sampled on September 14 & 15, 2023 using sampling methods and procedures outlined in the SMP. Groundwater quality measurements including elevation (Table 3-0), temperature, turbidity, pH, conductivity and oxidation reduction potential (ORP) were collected during the purging process at each well. Purge water from each well was released to the ground surface near the well. At each well, samples were collected for analysis of VOCs and TAL metals. Samples were submitted to ALS Environmental, a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) - certified laboratory located in Rochester, New York.

6.0 Monitoring Results

6.1 Groundwater Data

The following constituents were detected in exceedance of 6 NYCRR Part 703.5 Class GA Groundwater Standards at one (1) or more sample locations for the reporting period:

Volatile Organics

- trichloroethene (TCE)
- 1,1,1-trichloroethane (1,1,1-TCA)
- 1,1-dichloroethane (1,1-DCA)
- 1,1-dichloroethane (1,1-DCE)

Metals

- iron
- manganese
- chromium
- magnesium

- cis-1,2-dichloroethene (cis-1,2-DCE)
- vinyl chloride
- 1, 4- dioxane
- PFOS/PFOA
 - sodium
 - copper
 - arsenic

Tabulated groundwater and surface water analytical results from the September 2023 monitoring event are attached as Table Group 1. The following provides a comprehensive summary of findings:

- Sampling at 8354 Jackson Hill Road did not identify VOC exceedances relative to Part 703.5.
- No VOC exceedances were identified at the upgradient well MW-1S, consistent with previous sampling events.

- All VOC exceedances detected at MW-4 increased somewhat relative to the April 2022 sampling event; TCE concentrations (previously identified in sampling from 2011 to 2017) continue to remain below applicable regulatory criteria.
- VOC concentrations at MW-7 did not significantly change relative to the previous reporting periods.
- VOC concentrations at MW-08 generally decreased during the September 2023 sampling event; concentrations appear to fluctuate seasonally and have not surpassed levels observed in May 2018.
- No VOC exceedances were identified at downgradient well MW-10D, consistent with previous sampling events.
- VOC concentrations at MW-11 decreased relative to the April 2022 sampling event.
- Lu Engineers had previously sampled MW-11 for 1,4-dioxane, PFOAs and PFAS in 2018. As requested by the NYSDEC, MW-11 was re-sampled in April 2022 and September 2023, which indicated decreased concentrations of 1,4-dioxane, PFOA and PFAS as compared to 2018 results for this well (Table 1-3).
- No VOC exceedances were identified at the downgradient well MW-12, consistent with previous sampling events.
- VOC concentrations at MW-13 slightly fluctuated relative to the April 2022 sampling event; concentrations of degradation products generally remain consistent with previous reporting periods.
- Wells MW-1D, MW-3, MW-9, and MW-10 were dry and not sampled during this reporting period.
- Iron and manganese exceedances were frequently detected and generally fluctuated relative to previous sampling events.
- In addition to iron and manganese, magnesium and sodium were detected at concentrations
 exceeding applicable regulatory criteria at MW-12. Chromium was identified at
 concentrations exceeding applicable regulatory criteria at MW-8 and MW-13. Arsenic and
 copper were detected at concentrations exceeding applicable regulatory criteria at MW-8
 and MW-15, respectively.

Historical sample analytical results trends and graphs are included as Table Group 2.

6.2 Surface Water Data

Surface water sampling identified iron and magnesium exceedances at SW-3 and SW-4, consistent with previous sampling events (Table 1-2). No VOCs were detected above minimum laboratory quantitation limits in any of the surface water samples (Table 1-1).

6.3 Leachate Indicator Data

Leachate indicators, other than TAL metals, have not been collected since 2014.

6.4 Landfill Gas Monitoring Data

In addition to groundwater monitoring, all landfill vents were screened for VOCs and combustible gases including H_2S , CO, O_2 using a PID and 4 gas meter in September 2023.

Refer to Figure 2 for gas vent locations. No elevated PID/gas readings in the vents were observed during the Site-wide inspection, as documented in Appendix D.

6.5 Site Inspections

In September 2023, the landfill cap grades and swales were in good condition. The vegetated cap system appeared to be limiting the amount of surface water infiltration through buried waste and reducing the impact on groundwater quality as determined by water quality parameters. MW-1S upheaval has not yet been repaired and MW-1D also appeared to be affected by upheaval, but both wells appeared to remain functional. A small patch of exposed green geotextile was observed on the Site cap as indicated in Appendix B, Site Photographs. The exposed geotextile was not repaired during this reporting period, but the exposed geotextile in this location does not appear to suggest a breach or failure of the cover system. Several of the planted willow trees on the southwestern portion of the Site appeared to be dead at the time of the Site inspection. A copy of the Site-wide inspection form is included as Appendix D of this report. It is noted that these recommended repairs are considered minor and do not appear to have compromised the effectiveness of Site ECs.

In February 2023, the Village DPW imported and installed 35 tons of material for repair of the Site access road at the base of the landfill. NYSDEC import form/approval and related documentation is included in Appendix F.

6.6 Results Summary

In general, the remedy performance monitoring data presented above indicate that the remedies implemented are performing as expected, are effective and protective, and are progressing towards the remedial action objectives. Groundwater VOC concentrations have generally decreased over time but have fluctuated since 2011 (Table 2-1). The landfill cap is serving to reduce groundwater impacts as determined by previous leachate indicator parameter concentrations. The data also indicate that water quality does not appear to have been impacted from surface water runoff from the Site. These findings generally demonstrate progress towards attaining the remediation goals set forth in the controlling documents and the Record of Decision.

7.0 Conclusions and Recommendations

7.1 Compliance with the Site Management Plan

The controlling document for the Site is the approved SMP (2021). The requirements specified in the SMP have been met during the reporting period of this PRR.

The ROD for the Site requires groundwater use restrictions. NYSDEC placed a Declaration of Covenants and Restrictions on file at the Allegany County Clerk's office that restricts groundwater use in the area around the Site (Table 3-0).

7.2 Performance and Effectiveness of the Remedies

Overall, the remedy performance monitoring data collected during this reporting period indicates that the remedies implemented for both of the operable units are performing generally as expected, are effective and protective. The landfill cap is serving to reduce groundwater impacts as determined by generally stable and/or declining leachate indicator parameter concentrations.

Landfill gas is typical and is not impacting resources. It appears that stream and tributary water quality has not been impacted from surface water discharges from the Site. These factors demonstrate progress towards attaining the remediation goals set forth in the controlling documents and the ROD.

7.3 Future Sampling Schedule and Periodic Review Report Submittals

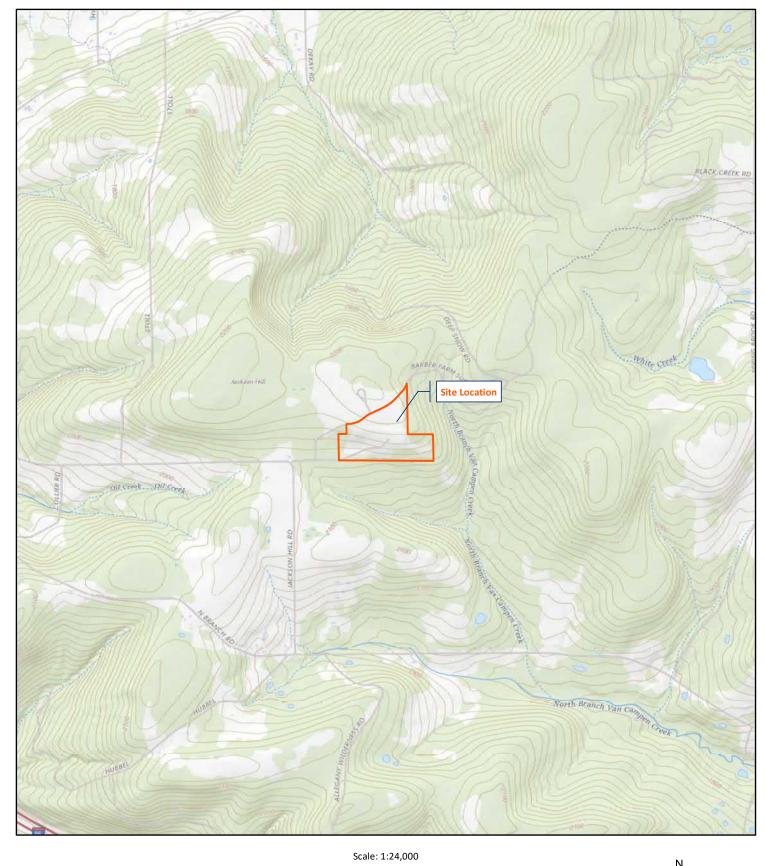
Based on the analytical data generated during this reporting period, it remains evident that cVOCs, iron, and manganese are the primary contaminants of concern at the Site. Slight increases in concentrations of VOCs and metals in Site monitoring wells are likely related to seasonal fluctuations in groundwater elevations. It is noted that groundwater elevations observed in September 2023 were lower than previously recorded elevations at each monitored well since monitoring began in 2011. The general trend of contaminant concentrations continues to suggest that contaminant degradation is occurring. In accordance with the approved SMP for this Site, Lu Engineers will plan to perform the next sampling event during the fourth quarter of 2024.

7.4 Recommendations

It is recommended that the next PRR be submitted approximately one (1) year from submittal of this PRR. A final determination of the submittal schedule for future Site reporting requirements will be determined with approval by the NYSDEC.

It is also recommended that exposed geotextile observed on the Site cap shown in the Site Photographs (Appendix B) and the uplifted wells detailed in the Site Inspection Form (MW-1D and MW-1S) be repaired as necessary to ensure functionality and integrity.

As noted on Site Inspection Form, several dead willow trees were observed on the southwestern area of the property. It is recommended that this area be inspected during the next sampling event to determine if there are increased amounts of stressed and/or dead vegetation.



Contour Interval: 20 feet

Scale: 1:24,000 1,000 500 0 1,000 2,000 4,000 Feet



Figure 1. Site Location Plan Cuba Municipal Waste Disposal Site NYSDEC Site #902012 Village of Cuba, New York



DATE: February 2022 PROJECT #: 50191-01 DRAWN/CHECKED: BGS/GLA

DATA SOURCE: ESRI Online Basemap

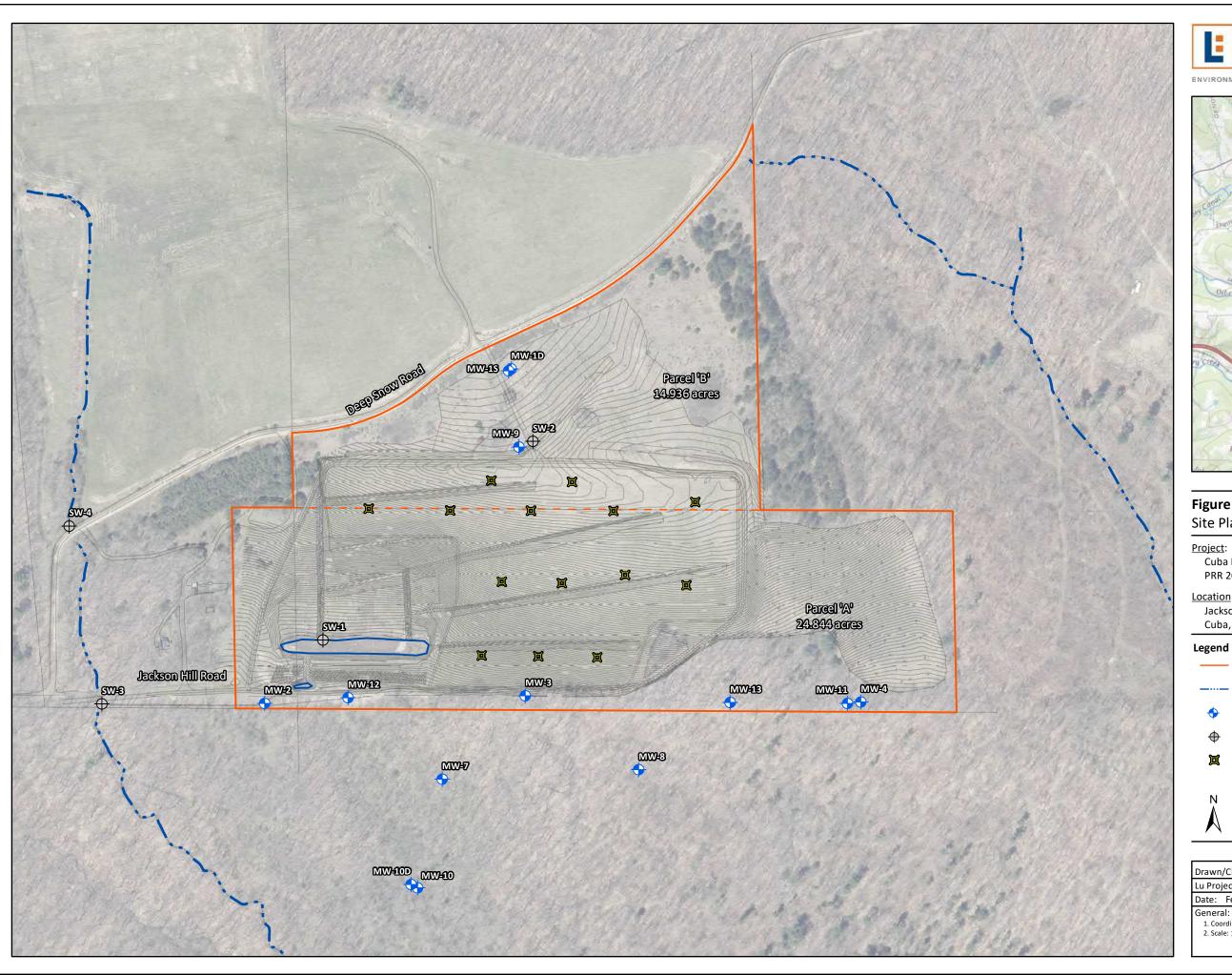






Figure 2: Site Plan

Cuba Municipal Waste Disposal Site PRR 2021-2022

<u>Location</u>:

Jackson Hill Road Cuba, Allegany County, NY

Site Boundary

---- North Branch, Van Campen Creek

Monitoring Wells

Surface Water Sample Locations

Landfill Gas Vent

1 inch = 250 feet 125 250

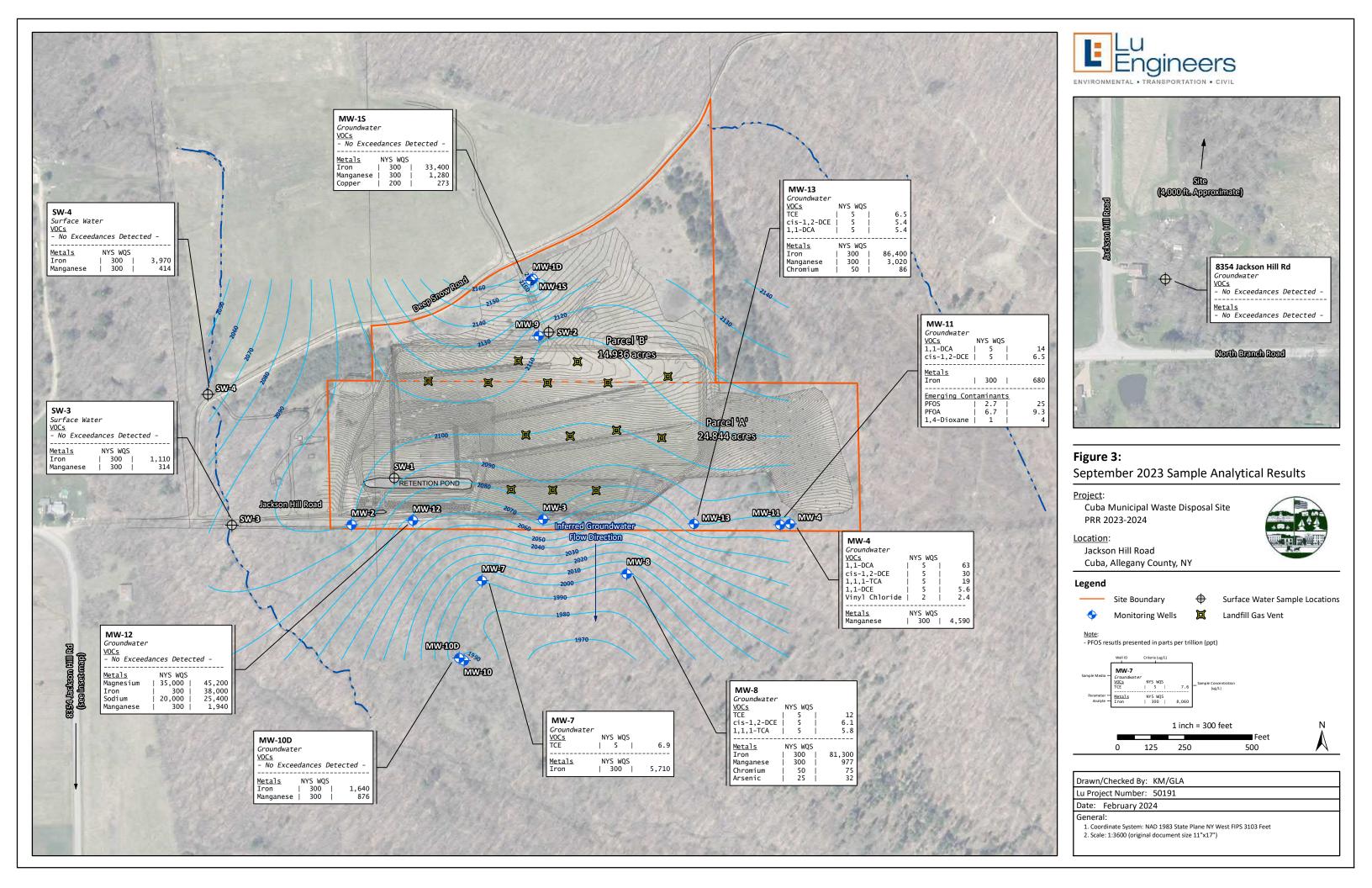
Drawn/Checked By: BGS/GLA Lu Project Number: 50191

Date: February 2021

General:

1. Coordinate System: NAD 1983 State Plane NY West FIPS 3103 Feet

2. Scale: 1:3600 (original document size 11"x17")



Cuba Municipal Waste Disposal Site (#902012) Periodic Review Report 2023-2024 **Groundwater Sample Analytical Results**

		Sample ID:	8354 Jackson	MW-1S	MW-1D	MW-2	MW-3	MW-4	MW-7	MW-8	MW-9	MW-10	MW-10D	MW-11	MW-12	MW-13	SW-01	SW-02	SW-03	SW-04
Table 1-1: Sample Analytical Results - VOCs	'	Sample Date:	9/14/2023	9/15/2023	9/15/2023	9/14/2023	9/14/2023	9/14/2023	9/15/2023	9/14/2023	9/14/2023	9/14/2023	9/14/2023	9/14/2023	9/15/2023	9/14/2023	9/15/2023	9/15/2023	9/15/2023	9/15/2023
Detected Parameters:	ŀ	Matrix	· · ·	Groundwater	Surface Water	Surface Water	Surface Water													
	NYSDEC TO																			
EPA 8260 - VOCs	Surface Water Standard	Groundwater Standard	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result C	Result (
1,1,1-Trichloroethane (TCA)	5.0	5.0	< ND	< ND	NS	NS	NS	19.0	3.90	5.80	NS	NS	1.60	2.40	0.36 J	4.60	NS	NS	< ND	< ND
1,1,2,2-Tetrachloroethane	0.2	5.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
1.1.2-Trichloroethane	1.0	1.0	< ND	< ND	NS	NS	NS	0.22 J	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	5.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
1,1-Dichloroethane (1,1-DCA)	5.0	5.0	< ND	< ND	NS	NS	NS	63.0	1.50	4.70	NS	NS	0.67 J	14.0	0.36 J	5.40	NS	NS	< ND	< ND
1,1-Dichloroethene (1,1-DCE)	0.7	5.0	< ND	< ND	NS	NS	NS	5.60	0.66 J	0.30 J	NS	NS	0.23 J	0.83 J	< ND	0.40 J	NS	NS	< ND	< ND
1,2,3-Trichlorobenzene			< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
1,2,4-Trichlorobenzene			< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
1,2-Dibromo-3-chloropropane (DBCP)	0.04	0.04	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
1,2-Dibromoethane			< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
1,2-Dichlorobenzene	3.0	3.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
1,2-Dichloroethane	0.6	0.6	< ND	< ND	NS	NS	NS	0.37 J	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
1,2-Dichloropropane	1.0	1.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
1,3-Dichlorobenzene	3.0	3.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
1,4-Dichlorobenzene	3.0	3.0	< ND	< ND	NS	NS	NS	0.26 J	< ND	< ND	NS NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
2-Butanone (MEK)	50	50	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
2-Hexanone	50	50	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
4-Methyl-2-pentanone			< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Acetone	50	50	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Benzene	1.0	1.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Bromochloromethane	5.0	5.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Bromodichloromethane	50	50	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Bromoform	50	50	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Bromomethane	5.0	5.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Carbon Disulfide			< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Carbon Tetrachloride	0.4	5.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Chlorobenzene	5.0	5.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Chloroethane	5.0	5.0	< ND	< ND	NS	NS	NS	< 1.10	< ND	< ND	NS	NS	< ND	0.36 J	< ND	< ND	NS	NS	< ND	< ND
Chloroform	7.0	7.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Chloromethane			< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Cyclohexane			< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Dibromochloromethane	50	50	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Dichlorodifluoromethane (CFC 12)	5.0	5.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Dichloromethane			< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Ethylbenzene	5.0	5.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Isopropylbenzene (Cumene)	5.0	5.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Methyl Acetate			< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Methyl tert-Butyl Ether			< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Methylcyclohexane			< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Styrene	5.0	5.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Tetrachloroethene (PCE)	0.7	5.0	< ND	< ND	NS	NS	NS	0.33 J	< ND	< ND	NS	NS	< ND	0.80 J	< ND	4.20	NS	NS	< ND	< ND
Toluene	5.0	5.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Trichloroethene (TCE)	5.0	5.0	< ND	< ND	NS	NS	NS	3.50	6.90	12.0	NS	NS	0.96 J	2.00	0.60 J	6.50	NS	NS	< ND	< ND
Trichlorofluoromethane (CFC 11)	5.0	5.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Vinyl Chloride	0.3	2.0	< ND	< ND	NS	NS	NS	2.40	< ND	< ND	NS	NS	< ND	0.46 J	< ND	< ND	NS	NS	< ND	< ND
cis-1,2-Dichloroethene	5.0	5.0	< ND	< ND	NS	NS	NS	30.0	3.00	6.10	NS	NS	0.87 J	6.50	< ND	5.40	NS	NS	< ND	< ND
cis-1,3-Dichloropropene			< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
m,p-Xylenes	5.0	5.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
o-Xylene	5.0	5.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
trans-1,2-Dichloroethene	5.0	5.0	< ND	< ND	NS	NS	NS	0.26 J	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
trans-1,3-Dichloropropene	0.4	0.4	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND

- Notes

 Results presented in parts per billion (ppb)
- 1 Surface Water Class A, A-S, AA, AA-S
- 2 Groundwater Class GA
- < : Results not detected above minimum laboratory quantitation limit
- NS: Well not sampled (dry)
- J: Estimated value due to concentration between the MRL and the MDL

Results exceed surface water quality standard/guidance value Results exceed groundwater quality standard/guidance value



Cuba Municipal Waste Disposal Site (#902012) Periodic Review Report 2023-2024 Groundwater Sample Analytical Results

Table 4.2: Cample Analytical Bassite - 84		Sample ID:	8354 Jackson	MW-1S	MW-1D	MW-2	MW-3	MW-4	MW-7	MW-8	MW-9	MW-10	MW-10D	MW-11	MW-12	MW-13	SW-01	SW-02	SW-03	SW-04
Table 1-2: Sample Analytical Results - Mo Detected Parameters:	etais	Sample Date:	9/14/2023	9/15/2023	9/15/2023	9/14/2023	9/14/2023	9/14/2023	9/15/2023	9/14/2023	9/14/2023	9/14/2023	9/14/2023	9/14/2023	9/15/2023	9/14/2023	9/15/2023	9/15/2023	9/15/2023	9/15/2023
Detected Parameters.		Matrix	Surface Water	Groundwater	Surface Water	Surface Water	Surface Water	Surface Water												
EPA 6010 - Metals	NYSDEC T	OGS 1.1.1	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q	Result Q
EFA 6010 - Wietais	Surface Water Standard	Groundwater Standard	Result Q	Result Q	nesuit Q	Result Q	nesuit Q	result Q	Result Q	Result Q	Result Q	Result Q	nesuit Q	Result Q						
Aluminum, Total			40.0 J	25,600	NS	NS	NS	200	5,910	60,100	NS	NS	1,970	840	29,300	61,600	NS	NS	1,270	4,300
Antimony, Total	3.0	3.0	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Arsenic, Total	50	25	< ND	18.0	NS	NS	NS	< ND	< ND	32.0	NS	NS	< ND	< ND	11.0	21.0	NS	NS	< ND	< ND
Barium, Total	1,000	1,000	56.0	611	NS	NS	NS	29.0	85.0	274	NS	NS	69	12.0 J	204	552	NS	NS	23.0	38.0
Beryllium, Total	3.0	3.0	< ND	1.20 J	NS	NS	NS	< ND	0.20 J	3.10 J	NS	NS	ND	< ND	1.00 J	2.20 J	NS	NS	< ND	0.20 J
Cadmium, Total	5.0	5.0	< ND	1.60 J	NS	NS	NS	< ND	0.50 J	0.60 J	NS	NS	ND	< ND	< ND	0.50 J	NS	NS	< ND	< ND
Calcium, Total			22,800	121,000	NS	NS	NS	49,700	51,000	37,700	NS	NS	46,300	49,100	82,700	91,700	NS	NS	18,400	8,000
Chromium, Total	50	50	< ND	34.0	NS	NS	NS	< ND	9.00 J	75.0	NS	NS	2.00 J	< ND	36.0	86.0	NS	NS	2.00 J	4.00 J
Cobalt, Total	5		< ND	17.0 J	NS	NS	NS	1.00 J	3.00 J	39.0 J	NS	NS	1.00 J	< ND	15.0 J	35.0 J	NS	NS	< ND	2.00 J
Copper, Total	200	200	< ND	273	NS	NS	NS	< ND	12.0 J	176	NS	NS	4.00 J	< ND	22.0	59.0	NS	NS	< ND	< ND
Iron, Total	300	300	220	33,400	NS	NS	NS	260	5,710	81,300	NS	NS	1,640	680	38,000	86,400	NS	NS	1,110	3,970
Lead, Total	50	25	< ND	46.0 J	NS	NS	NS	< ND	5.00 J	27.0 J	NS	NS	< ND	< ND	16.0 J	26.0 J	NS	NS	< ND	< ND
Magnesium, Total	35,000	35,000	6,800	10,800	NS	NS	NS	11,800	25,700	28,400	NS	NS	21,100	11,200	45,200	23,800	NS	NS	2,700	2,200
Manganese, Total	300	300	< ND	1,280	NS	NS	NS	4,590	171	977	NS	NS	876	84.0	1,940	3,020	NS	NS	314	414
Mercury, Total	0.7	0.7	< ND	0.08 BJ	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	0.13 BJ	< ND	NS	NS	< ND	< ND
Nickel, Total	100	100	< ND	< ND	NS	NS	NS	< ND	< ND	14.0 J	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Potassium, Total			2,500	8,700	NS	NS	NS	2,500	3,700	17,900	NS	NS	2,800	2,100	12,700	18,000	NS	NS	2,300	4,200
Selenium, Total	10	10	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Silver, Total	50	50	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Sodium, Total		20,000	20,300	2,600	NS	NS	NS	4,100	7,000	5,500	NS	NS	16,500	3,400	25,400	4,500	NS	NS	2,800	5,500
Thallium, Total	0.50	0.50	< ND	< ND	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND
Vanadium, Total	14.0		< ND	34.0 J	NS	NS	NS	< ND	8.00 J	79.0	NS	NS	2.00 J	2.00 J	39.0 J	77.0	NS	NS	2.00 J	7.00 J
Zinc, Total	2,000	2,000	38.0	131	NS	NS	NS	8.00 J	23.0	203.0	NS	NS	17.0 J	5.00 J	83.0	193	NS	NS	8.00 J	12.0 J

Notes

- Results presented in parts per billion (ppb)
- 1 Surface Water Class A, A-S, AA, AA-S
- 2 Groundwater Class GA
- < : Results not detected above minimum laboratory quantitation limit

NS: Well not sampled (dry)

- J: Estimated value due to concentration between the MRL and the MDL
- *: guidance value

Results exceed surface water quality standard/guidance value
Results exceed groundwater quality standard/guidance value



Cuba Municipal Waste Disposal Site (#902012) Periodic Review Report 2023-2024 Groundwater Sample Analytical Results

Table 1-3: Emerging Contaminants Result Trends	Sample ID:		MW-11		MW-11		MW-11
Detected Parameters:	Sample Date:		8/7/2018		4/12/2022		9/14/2023
betetteu raiaineteis.	Matrix		Groundwater		Groundwater		Groundwater
EPA 537 - Perfluorinated Compounds	NYSDEC PFAS Under Part 375		Result Q		Result Q		Result Q
Er A 337 - Fer indomnated compounds	Groundwater Standard		nesun Q		nesur Q		nesun Q
Perfluorobutanesulfonic acid (PFBS)	10*		0.44 J		0.38 J	٧	ND
Perfluorohexanesulfonic acid (PFHxS)	10*	<	ND		1.10 J	٧	ND
Perfluoroheptanesulfonic acid (PFHpS)	10*		0.34 J	<	ND	٧	ND
Perfluorooctanesulfonic acid (PFOS)	2.7		25.0		7.60		25.0
Perfluorodecanesulfonic acid	10*	<	ND	<	ND	٧	ND
Perfluorobutanoic acid (PFBA)	10*		4.40		3.10 J	<	ND
Perfluoropentanoic acid (PFPeA)	10*		2.50		1.10	<	ND
Perfluorohexanoic acid (PFHxA)	10*		1.90		1.20 J	<	ND
Perfluoroheptanoic acid (PFHpA)	10*		1.30 J		1.20 J	<	ND
Perfluorooctanoic acid (PFOA)	6.7		8.20		4.30		9.30
Perfluorononanoic acid (PFNA)	10*		0.85 J	<	ND	<	ND
Perfluorodecanoic acid (PFDA)	10*	<	ND	<	ND	<	ND
Perfluoroundecanoic acid	10*	<	ND	<	ND	<	ND
Perfluorododecanoic acid	10*	<	ND	<	ND	<	ND
Perfluorotridecanoic acid	10*	<	ND	<	ND	<	ND
Perfluorotetradecanoic acid	10*	<	ND	<	ND	<	ND
6:2 Fluorotelomer sulfonate	10*	<	ND	<	ND	<	ND
8:2 Fluorotelomer sulfonate	10*	<	ND	<	ND	<	ND
Perfluroroctanesulfonate	10*	<	ND	<	ND	<	ND
Perfluorooctane sulfonamide	10*		0.49 J	<	ND	<	ND
N-methyl perfluorooctanesulfonamidoacetic acid	10*	<	ND	<	ND	<	ND
N-ethyl perfluorooctanesulfonamidoacetic acid	10*	<	ND	<	ND	<	ND
EPA 8270 - SIM-Semi-volatile Organics	NYSDEC Under Part 375		Result Q		Result Q		Result Q
1,4-Dioxane	1.0 (ppb)		18.0 E		5.40		4.00

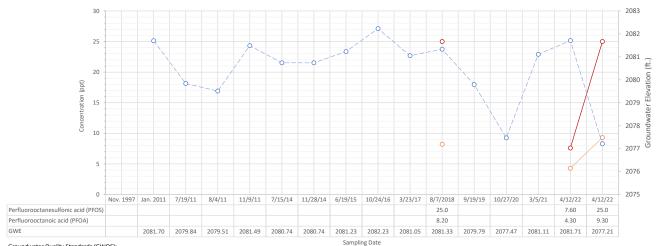
Notes:

- 1- Results presented in parts per trillion (ppt) unless otherwise indicated
- *- NYSDEC Guidance Value
- < : Results not detected above minimum laboratory quantitation limit
- J: Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses.

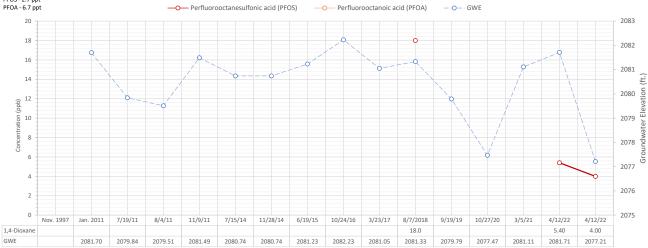
Results exceed groundwater quality standard/guidance value



MW-11



Groundwater Quality Standards (GWQS): PFOS - 2.7 ppt PFOA - 6.7 ppt



Groundwater Quality Standards (GWQS): 1 4-Dioxane - 1.0 ppb

Sampling Date

Table 2-1 VOC Result Trends

		Well ID):							MW-1S														MW-1D						
tected Parameters		Timeline	Pre-Remediation														Pre-Remediation							Post-Remediatio	n					
		Date	Nov. 1997	Jan. 2011	7/19/11	11/9/11	11/28/14	6/19/15	10/24/16	3/23/17	5/8/18	9/19/19	10/27/20	3/25/21	4/12/22	9/14/23	Nov. 1997	Jan. 2011	7/19/11	11/9/11	11/28/14	6/19/15	10/24/16	3/23/17	5/8/18	9/19/19	10/27/20	3/25/21	4/12/22	9/14/23
8260 - VOCs	NYSDEC T	OGS 1.1.1	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4 8200 - VOC3	Surface Water	Groundwater	Result	Result	Result	Result	Result	Kesuit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Kesuit	Result	Result	Kesuit	Result	Result	Result	Result	Result	Result	Result
etone	50	50	< ND	< ND	< ND	2.21	< ND	< ND	NS	< ND	NS	NS	NS	< ND	< ND	< ND	NS	< ND	< ND	NS	< ND	< ND	NS	2.60 J	< ND	< ND	< ND	< ND	< ND	NS
loroethane	5.0	5.0	< ND	< ND	< ND	< ND	< ND	< ND	NS	< ND	NS	NS	NS	< ND	< ND	< ND	NS	< ND	< ND	NS	< ND	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	NS
-1,2-Dichloroethene	5.0	5.0	< ND	< ND	< ND	< ND	< ND	< ND	NS	< ND	NS	NS	NS	< ND	< ND	< ND	NS	< ND	< ND	NS	< ND	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	NS
L-Dichloroethane	5.0	5.0	< ND	< ND	< ND	< ND	< ND	< ND	NS	< ND	NS	NS	NS	< ND	< ND	< ND	NS	0.19	< ND	NS	< ND	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	NS
-Dichloroethene	0.7	5.0	< ND	< ND	< ND	< ND	< ND	< ND	NS	< ND	NS	NS	NS	< ND	< ND	< ND	NS	< ND	< ND	NS	< ND	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	NS
,1-Trichloroethane	5.0	5.0	1.00	< ND	< ND	< ND	< ND	< ND	NS	< ND	NS	NS	NS	< ND	< ND	< ND	NS	0.20	< ND	NS	< ND	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	NS
trachloroethene	0.7	5.0	1.00	< ND	< ND	< ND	< ND	< ND	NS	< ND	NS	NS	NS	< ND	< ND	< ND	NS	< ND	< ND	NS	< ND	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	NS
chloroethene	5.0	5.0	< ND	< ND	< ND	< ND	< ND	< ND	NS	< ND	NS	NS	NS	< ND	< ND	< ND	NS	< ND	< ND	NS	< ND	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	NS
nyl Chloride	0.3	2.0	< ND	< ND	< ND	< ND	< ND	< ND	NS	< ND	NS	NS	NS	< ND	< ND	< ND	NS	< ND	< ND	NS	< ND	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	NS

		Well ID:								MW-2														MW-3						
Detected Parameters		Timeline:	Pre-Remediation							Post-Remediation	1						Pre-Remediation							Post-Remediation	n					
		Date:	Nov. 1997	Jan. 2011	7/19/11	11/9/11	11/28/14	6/19/15	10/24/16	3/23/17	5/8/18	9/19/19	10/27/20	3/25/21	4/12/22	9/14/23	Nov. 1997	Jan. 2011	7/19/11	11/9/11	11/28/14	6/19/15	10/24/16	3/23/17	5/8/18	9/19/19	10/27/20	3/25/21	4/12/22	9/14/23
EPA 8260 - VOCs	NYSDEC 1	OGS 1.1.1	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
EFA 8200 - VOCS	Surface Water	Groundwater	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Acetone	50	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< ND	NS	NS	14.0	433	NS	< ND	NS	< ND	NS	NS	NS	NS	NS	NS	NS	NS
Chloroethane	5.0	5.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< ND	NS	NS	4.00	20.6	NS	56.2	NS	14.0	NS	NS	NS	NS	NS	NS	NS	NS
cis-1,2-Dichloroethene	5.0	5.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.31	NS	NS	< ND	622	NS	< ND	NS	79.0	NS	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloroethane	5.0	5.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< ND	NS	NS	11.0	81.6	NS	86.4	NS	27.0	NS	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloroethene	0.7	5.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< ND	NS	NS	65.0	7.20	NS	4.8	NS	< ND	NS	NS	NS	NS	NS	NS	NS	NS
1,1,1-Trichloroethane	5.0	5.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< ND	NS	NS	240	73.8	NS	84.8	NS	33.0	NS	NS	NS	NS	NS	NS	NS	NS
Tetrachloroethene	0.7	5.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< ND	NS	NS	< ND	< ND	NS	< ND	NS	< ND	NS	NS	NS	NS	NS	NS	NS	NS
Trichloroethene	5.0	5.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< ND	NS	NS	290	99.8	NS	162	NS	210	NS	NS	NS	NS	NS	NS	NS	NS
Vinyl Chloride	0.3	2.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< ND	NS	NS	< ND	< ND	NS	< ND	NS	< ND	NS	NS	NS	NS	NS	NS	NS	NS

		Well ID:								MW-4														MW-7						
Detected Parameters		Timeline:	Pre-Remediation							Post-Remediation	1						Pre-Remediation							Post-Remediation	1					
		Date:	Nov. 1997	Jan. 2011	7/19/11	11/9/11	11/28/14	6/19/15	10/24/16	3/23/17	5/8/18	9/19/19	10/27/20	3/25/21	4/12/22	9/14/23	Nov. 1997	Jan. 2011	7/19/11	11/9/11	11/28/14	6/19/15	10/24/16	3/23/17	5/8/18	9/19/19	10/27/20	3/25/21	4/12/22	9/14/23
PA 8260 - VOCs	NYSDEC TO	OGS 1.1.1	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
FA 0200 - VOC3	Surface Water	Groundwater	Result	Result	Result	Result	Result	Result	Nesuit	Result	Kesuit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
cetone	50	50	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	7.90 B	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND	< ND	< ND	NS	< ND	< ND	5.4 B	< ND	< ND	< ND	< ND
Chloroethane	5.0	5.0	< ND	5.62	6.22	2.12	11.0	12.0	< ND	9.60	6.00	6.40	4.40	0.90 J	< ND	1.1	NS	NS	< ND	< ND	< ND	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND
is-1,2-Dichloroethene	5.0	5.0	< ND	13.4	10.2	10.1	18.0	21.0	20.0	12.0	10.0	29.0	32.0	14.0	14.0	30.0	NS	NS	< ND	3.22	< ND	< ND	NS	2.90	2.80	3.00	3.50	3.10	3.30	3.00
,1-Dichloroethane	5.0	5.0	100	85.5	84.6	62.7	79.0	68.0	100	38.0	30.0	57.0	77.0	34.0	25.0	63.0	NS	NS	< ND	1.53	< ND	< ND	NS	1.30 J	1.30 J	1.60	1.80	1.50	1.40	1.50
,1-Dichloroethene	0.7	5.0	1.00	3.62	3.95	3.08	6.90	7.70	6.00	3.10	3.30	6.20	7.20	3.40	2.40	5.60	NS	NS	< ND	0.55	< ND	< ND	NS	0.56	0.62	ND	0.83 J	0.89 J	1.0	0.66 J
,1,1-Trichloroethane	5.0	5.0	12.0	30.1	24.5	19.7	24.0	32.0	30.0	12.0	10.0	19.0	17.0	12.0	6.20	19.0	NS	NS	5.90	5.63	< ND	< ND	NS	4.50	4.40	4.40	4.50	4.10	4.40	3.90
etrachloroethene	0.7	5.0	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	0.46 J	0.68 J	0.33 J	0.33 J	NS	NS	< ND	< ND	< ND	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND
richloroethene	5.0	5.0	4.00	14.1	6.22	6.75	< ND	< ND	6.40	5.30	4.30	2.50	2.2	4.30	3.30	3.50	NS	NS	6.90	7.55	6.90	7.10	NS	6.40	6.30	7.30	7.10	7.60	6.20	6.90
inyl Chloride	0.3	2.0	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	3.6	< ND	1.40	2.40	NS	NS	< ND	< ND	< ND	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND

		Well ID:	6							MW-8														MW-9						
Detected Parameters		Timeline	Pre-Remediation							Post-Remediation	ı						Pre-Remediation							Post-Remediatio	n					
		Date:	Nov. 1997	Jan. 2011	7/19/11	11/9/11	11/28/14	6/19/15	10/24/16	3/23/17	5/8/18	9/19/19	10/27/20	3/25/21	4/12/22	9/14/23	Nov. 1997	Jan. 2011	7/19/11	11/9/11	11/28/14	6/19/15	10/24/16	3/23/17	5/8/18	9/19/19	10/27/20	3/25/21	4/12/22	9/14/23
EPA 8260 - VOCs	NYSDEC T	OGS 1.1.1	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
EFA 8200 - VOCS	Surface Water	Groundwater	Result	Result	Result	Result	Kesuit	Kesuit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Kesuit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Acetone	50	50	NS	< ND	NS	51.5	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	8.18	NS	51.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chloroethane	5.0	5.0	NS	< ND	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	1.30	NS	0.96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
cis-1,2-Dichloroethene	5.0	5.0	NS	0.59	NS	0.53	NS	5.40	5.40	8.40	12.0	5.50	6.40	7.90	9.70	6.10	< ND	0.59	NS	0.53	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloroethane	5.0	5.0	NS	3.48	NS	2.71	NS	5.60	6.00	7.60	8.40	4.70	5.30	7.00	7.50	4.70	2.00	3.48	NS	2.71	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloroethene	0.7	5.0	NS	< ND	NS	< ND	NS	< ND	< ND	0.72	1.30	< ND	0.47 J	0.56 J	0.92 J	0.30 J	< ND	< ND	NS	< ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1,1-Trichloroethane	5.0	5.0	NS	0.78	NS	0.31	NS	10.0	8.10	12.0	13.0	6.60	6.80	9.30	10.0	5.80	0.90	0.78	NS	0.31	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Tetrachloroethene	0.7	5.0	NS	< ND	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	2.00	< ND	NS	< ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trichloroethene	5.0	5.0	NS	< ND	NS	< ND	NS	15.0	14.0	21.0	27.0	13.0	13.0	15.0	19.0	12.0	< ND	< ND	NS	< ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Vinyl Chloride	0.3	2.0	NS	< ND	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	< ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

		Well ID:								MW-10						
Detected Parameters		Timeline:	Pre-Remediation							Post-Remediation	1					
		Date:	Nov. 1997	Jan. 2011	7/19/11	11/9/11	11/28/14	6/19/15	10/24/16	3/23/17	5/8/18	9/19/19	10/27/20	3/25/21	4/12/22	9/14/23
EPA 8260 - VOCs	NYSDEC T	TOGS 1.1.1	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
EFA 8200 - VOCS	Surface Water	Groundwater	Result	Result	Result	Result	Result	Result	Kesuit	Result	Result	Result	Result	Result	Result	Result
Acetone	50	50	NS	4.62	12.0	2.13	< ND	17.0	< ND	< ND	< ND	NS	NS	< ND	NS	NS
Chloroethane	5.0	5.0	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	NS	NS
cis-1,2-Dichloroethene	5.0	5.0	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	NS	NS
1,1-Dichloroethane	5.0	5.0	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	NS	NS
1,1-Dichloroethene	0.7	5.0	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	NS	NS
1,1,1-Trichloroethane	5.0	5.0	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	NS	NS
Tetrachloroethene	0.7	5.0	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	NS	NS
Trichloroethene	5.0	5.0	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	NS	NS
Vinyl Chloride	0.3	2.0	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	NS	NS

- Notes

 Results presented in parts per billion (ppb)

 1 Surface Water Water Class A,A-S, AA, AA-S

 2 Groundwater Water Class GA

 < : Results not detected above minimum laboratory quantitation limit
 NS: Well not sampled

 I Stimated value due to concentration between the MRI and the MDI

J: Estimated value due to concentration between the MRL and the MDL

Results exceed surface water quality standard/guidance value

Results exceed groundwater quality standard/guidance value



Table 2-1 (continued) VOC Result Trends

		Well ID):							MW-10D														MW-11						
tected Parameters		Timeline	Pre-Remediation							Post-Remediation	1						Pre-Remediation							Post-Remediatio	n					
		Date	Nov. 1997	Jan. 2011	7/19/11	11/9/11	11/28/14	6/19/15	10/24/16	3/23/17	5/8/18	9/19/19	10/27/20	3/5/21	4/12/22	9/14/23	Nov. 1997	Jan. 2011	7/19/11	11/9/11	11/28/14	6/19/15	10/24/16	3/23/17	5/8/18	9/19/19	10/27/20	3/5/21	4/12/22	9/14/23
8260 - VOCs	NYSDEC T	OGS 1.1.1	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
4 0200 - VOC3	Surface Water	Groundwater	Result	Result	Result	Kesuit	Result	Result	Result	Result	Result	Result	Kesuit	Result	Kesuit	Result	Result	Result	Result	Kesuit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
etone	50	50	NS	NS	< ND	6.66	< ND	< ND	< ND	< ND	5.70	< ND	< ND	< ND	< ND	< ND	NS	5.45	< ND	1.81	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND
loroethane	5.0	5.0	NS	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	2.23	< ND	1.17	< ND	< ND	< ND	1.50 J	< ND	2.10	1.50	1.30	< ND	0.36 J
s-1,2-Dichloroethene	5.0	5.0	NS	NS	< ND	0.69	< ND	< ND	< ND	< ND	< ND	< ND	0.83 J	0.86 J	0.61 J	0.87 J	NS	4.87	9.10	4.17	< ND	8.10	< ND	7.00	7.30	3.6	12.0	12.0	11.0	6.5
1-Dichloroethane	5.0	5.0	NS	NS	< ND	0.50	< ND	< ND	< ND	< ND	< ND	< ND	0.61 J	0.66 J	0.47 J	0.67 J	NS	50.5	53.0	44.0	25.0	39.0	< ND	24.0	26.0	8.8	30.0	28.0	23.0	14.0
1-Dichloroethene	0.7	5.0	NS	NS	< ND	0.18	< ND	< ND	< ND	< ND	< ND	< ND	0.20 J	0.28 J	ND	0.23 J	NS	1.61	ND	1.48	ND	ND	< ND	1.40	2.10	< ND	2.20	2.80	2.00	0.83 J
1,1-Trichloroethane	5.0	5.0	NS	NS	< ND	1.66	< ND	< ND	< ND	0.99	< ND	1.60	1.60	1.60	1.00	1.60	NS	13.9	15.0	12.8	6.0	11.0	< ND	6.40	7.90	2.50	4.90	5.80	5.30	2.40
trachloroethene	0.7	5.0	NS	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	1.45	< ND	2.92	< ND	< ND	< ND	1.60	1.40	ND	1.10	1.00	1.10	0.80 J
chloroethene	5.0	5.0	NS	NS	< ND	0.70	< ND	< ND	< ND	0.64	0.41 J	< ND	0.70 J	0.90 J	0.87 J	0.96 J	NS	4.03	< ND	4.27	< ND	< ND	< ND	4.00	4.50	1.30	3.10	3.60	3.20	2.00
yl Chloride	0.3	2.0	NS	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	0.67 J	0.72 J	0.43 J	< ND

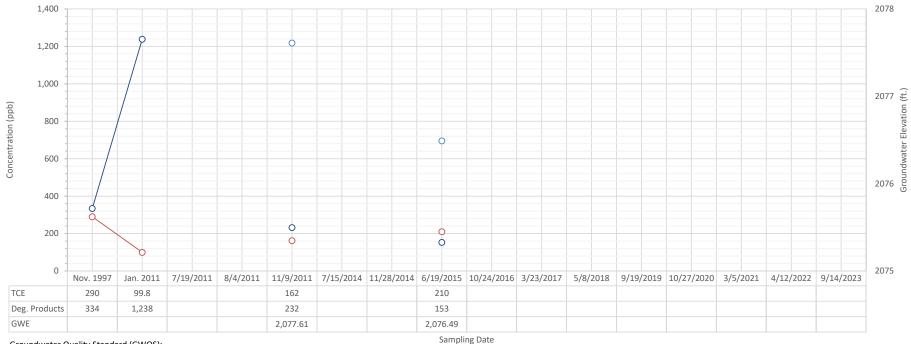
		Well ID:								MW-12														MW-13						
Detected Parameters		Timeline:	Pre-Remediation							Post-Remediation	1						Pre-Remediation							Post-Remediation	n					
		Date:	Nov. 1997	Jan. 2011	7/19/11	11/9/11	11/28/14	6/19/15	10/24/16	3/23/17	5/8/18	9/19/19	10/27/20	3/5/21	4/12/22	9/14/23	Nov. 1997	Jan. 2011	7/19/11	11/9/11	11/28/14	6/19/15	10/24/16	3/23/17	5/8/18	9/19/19	10/27/20	3/5/21	4/12/22	9/14/23
EPA 8260 - VOCs	NYSDEC T	OGS 1.1.1	Beaula	Result	Result	Result	Result	Result	Result	Result	Result	Result	Donula	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Bosula	Result	Result	Result	Result
EPA 0200 - VOCS	Surface Water	Groundwater	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Acetone	50	50	NS	5.22	< ND	2.41	< ND	< ND	< ND	1.70	< ND	< ND	< ND	< ND	< ND	< ND	NS	6.21	< ND	1.61	< ND	< ND	< ND	1.70 J	< ND	< ND	NS	< ND	< ND	< ND
Chloroethane	5.0	5.0	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	0.61	< ND	0.37	< ND	< ND	< ND	< ND	< ND	< ND	NS	< ND	< ND	< ND
cis-1,2-Dichloroethene	5.0	5.0	NS	1.29	< ND	1.47	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	0.44 J	< ND	NS	14.7	12.0	17.1	11.0	7.40	9.70	6.10	4.40	6.50	NS	6.50	5.40	5.40
1,1-Dichloroethane	5.0	5.0	NS	2.10	< ND	2.14	< ND	< ND	< ND	0.70 J	< ND	< ND	0.21 J	0.53 J	0.69 J	0.36 J	NS	21.4	15.0	20.0	14.0	9.30	12.000	6.60	5.40	6.40	NS	6.50	4.90	5.40
1,1-Dichloroethene	0.7	5.0	NS	0.32	< ND	0.21	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	1.06	< ND	1.67	< ND	< ND	< ND	0.93	0.43 J	ND	NS	0.39 J	0.54 J	0.40 J
1,1,1-Trichloroethane	5.0	5.0	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	0.23 J	0.35 J	0.36 J	NS	27.4	16.0	24.7	14.0	11.0	11.0	9.00	5.30	6.60	NS	6.50	5.70	4.60
Tetrachloroethene	0.7	5.0	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	7.39	6.40	6.55	5.70	5.40	6.00	5.90	4.50	4.60	NS	4.40	3.60	4.20
Trichloroethene	5.0	5.0	NS	1.33	< ND	1.45	< ND	< ND	< ND	0.78	0.28 J	< ND	0.30 J	0.44 J	0.59 J	0.60 J	NS	17.8	13.0	15.9	13.0	9.90	12.00	9.50	6.40	8.10	NS	7.50	5.70	6.50
Vinyl Chloride	0.3	2.0	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	< ND	< ND	< ND

		Well ID:								SW-1														SW-2						
Detected Parameters		Timeline:	Pre-Remediation							Post-Remediatio	n						Pre-Remediation							Post-Remediatio	n					
		Date:	Nov. 1997	Jan. 2011	7/19/11	11/9/11	11/28/14	6/19/15	10/24/16	3/23/17	5/8/18	9/19/19	10/27/20	3/5/21	4/12/22	9/14/23	Nov. 1997	Jan. 2011	7/19/11	11/9/11	11/28/14	6/19/15	10/24/16	3/23/17	5/8/18	9/19/19	10/27/20	3/5/21	4/12/22	9/14/23
EPA 8260 - VOCs	NYSDEC T	TOGS 1.1.1	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
EFA 8200 - VOCS	Surface Water	Groundwater	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Kesuit	Result	Result	Result
Acetone	50	50	NS	NS	< ND	NS	< ND	< ND	< ND	1.80 J	< ND	NS	NS	< ND	< ND	NS	NS	NS	< ND	NS	< ND	< ND	NS	NS	NS	NS	< ND	5.50	< ND	NS
Chloroethane	5.0	5.0	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND	NS	NS	NS	< ND	NS	< ND	< ND	NS	NS	NS	NS	< ND	< ND	< ND	NS
cis-1,2-Dichloroethene	5.0	5.0	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND	NS	NS	NS	< ND	NS	< ND	< ND	NS	NS	NS	NS	< ND	< ND	< ND	NS
1,1-Dichloroethane	5.0	5.0	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND	NS	NS	NS	< ND	NS	< ND	< ND	NS	NS	NS	NS	< ND	< ND	< ND	NS
1,1-Dichloroethene	0.7	5.0	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND	NS	NS	NS	< ND	NS	< ND	< ND	NS	NS	NS	NS	< ND	< ND	< ND	NS
1,1,1-Trichloroethane	5.0	5.0	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND	NS	NS	NS	< ND	NS	< ND	< ND	NS	NS	NS	NS	< ND	< ND	< ND	NS
Tetrachloroethene	0.7	5.0	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND	NS	NS	NS	< ND	NS	< ND	< ND	NS	NS	NS	NS	< ND	< ND	< ND	NS
Trichloroethene	5.0	5.0	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND	NS	NS	NS	< ND	NS	< ND	< ND	NS	NS	NS	NS	< ND	< ND	< ND	NS
Vinyl Chloride	0.3	2.0	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	< ND	NS	NS	NS	< ND	NS	< ND	< ND	NS	NS	NS	NS	< ND	< ND	< ND	NS

		Well ID:								SW-3														SW-4						
Detected Parameters		Timeline	Pre-Remediation							Post-Remediation	on						Pre-Remediation							Post-Remediation	on					
		Date:	Nov. 1997	Jan. 2011	7/19/11	11/9/11	11/28/14	6/19/15	10/24/16	3/23/17	5/8/18	9/19/19	10/27/20	3/5/21	4/12/22	9/14/23	Nov. 1997	Jan. 2011	7/19/11	11/9/11	11/28/14	6/19/15	10/24/16	3/23/17	5/8/18	9/19/19	10/27/20	3/5/21	4/12/22	9/14
EPA 8260 - VOCs		TOGS 1.1.1	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Re
	Surface Water																													
Acetone	50	50	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	3.10 J	< ND	< ND	< ND	NS	< NI
Chloroethane	5.0	5.0	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	< NE
cis-1,2-Dichloroethene	5.0	5.0	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	< ND
1,1-Dichloroethane	5.0	5.0	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	< NE
1,1-Dichloroethene	0.7	5.0	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	< ND
1,1,1-Trichloroethane	5.0	5.0	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	< ND
Tetrachloroethene	0.7	5.0	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	< ND
Trichloroethene	5.0	5.0	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	< ND
Vinyl Chloride	0.3	2.0	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	NS	< ND	NS	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	< ND
Notes - Results presented in parts - Surface Water Water Cla 2 - Groundwater Water Clas < : Results not detected abo NS: Well not sampled I: Estimated value due to co	oss A,A-S, AA, AA-S ss GA ove minimum laborat																													
: Estimated value due to Co	_	rface water quality st	andard/guidance																											



MW-03



Groundwater Quality Standard (GWQS): TCE - 5.0 ppb

—O— TCE —O— Deg. Products —O— ∙ GWE

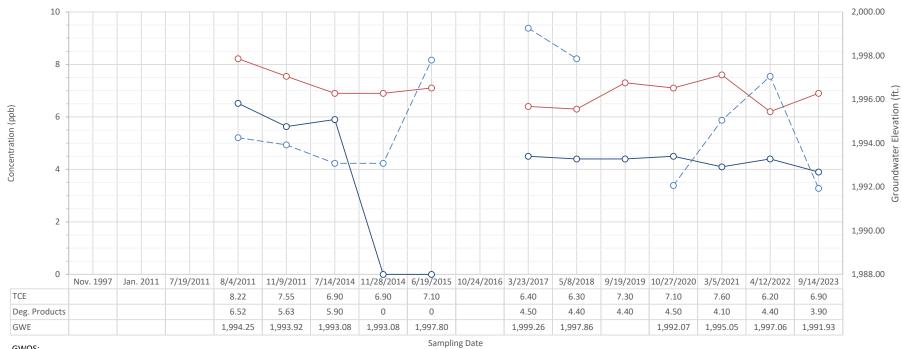
MW-04



GWQS: TCE - 5.0 ppb

—O— TCE —O— Deg. Products — O— · GWE

MW-07

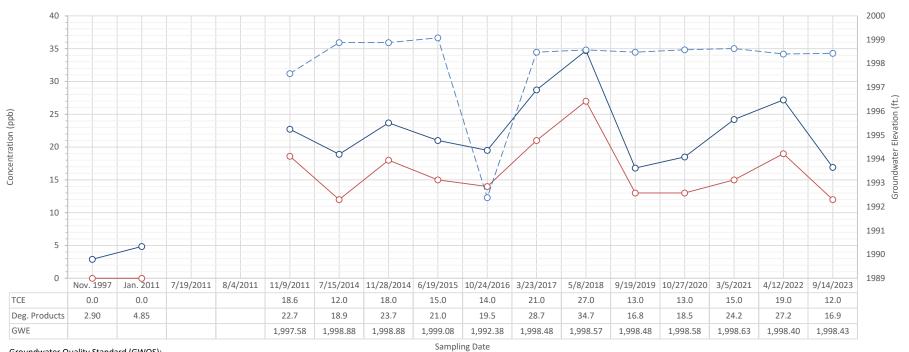


GWQS: TCE - 5.0 ppb

—O— TCE —O— Deg. Products — O− · GWE







Groundwater Quality Standard (GWQS):

TCE - 5.0 ppb

—O— TCE —O— Deg. Products — O— · GWE

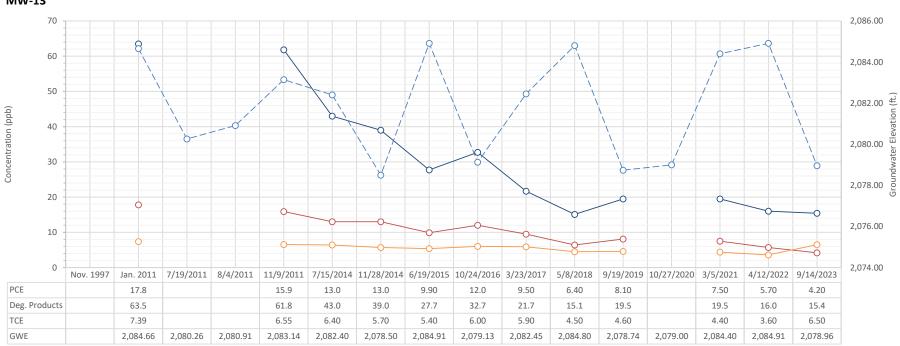
MW-11



Note: Analytical results for TCE remained below the GWQS.

GWQS: TCE - 5.0 ppb

MW-13



GWQS: TCE - 5.0 ppb

Sampling Date —O— PCE —O— Deg. Products —O— TCE —O— ∙ GWE



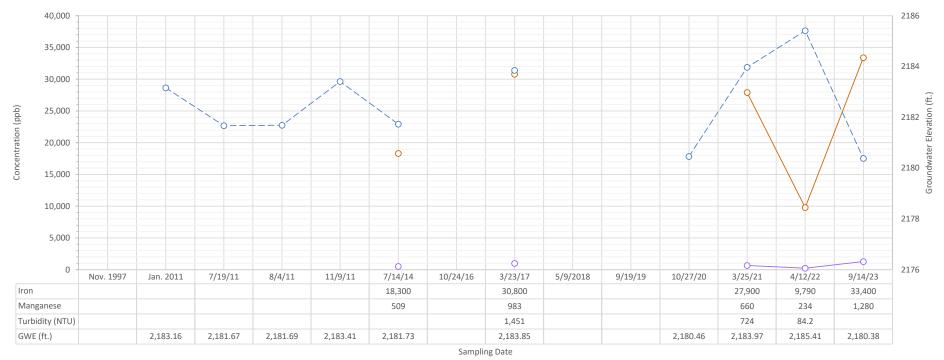
able	2-2	Inor	ganics	Result	Trends	

	Sample ID					MW-1S									MW-1D									MW-2								MW-3									MW-4								MW-7			
Detected Parameters	Sample Date	7/14/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20	3/25/21	4/12/22	9/14/2	3 7/14/14	10/24/1	6 3/23/17	5/9/18	9/19/19	10/27/20	3/25/21	4/12/22	9/14/23	7/14/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20	3/25/21	4/12/22	9/14/23	7/14/14 10/2	4/16 3/23	/17 5/9/1	8 9/19/19	10/27/20	3/25/21	4/12/22	9/14/23	7/15/14	10/24/16	3/23/17	5/9/18 9	9/19/19 1	10/27/20 3/	/25/21 4/	12/22 9/14	1/23 7/15	5/14 10,	24/16 3/23/17	5/9/18	9/20/19	10/27/20	3/25/21 4/12/	22 9/14/23
	Matrix			-	G	Groundwater			•					•	Groundwate	er	•		•					Groundwate	r				•	•		Groundwate	er	•	•		•	•		Gro	undwater	•	•			•		•	Groundwater			
FPA 6010 - Metals	NYSDEC TOGS 1.1.1	Regult	Porult	Regult	Porult	Recult	Regult	Porult	Parult	Porult	Parult	Parult	Parult	Parult	Parult	Porult	Regult	Porult	Recult	Porult	Porult	Porult	Regult	Porult	Porult	Parult	Porult	Parult	Parult Pa	rult Por	ult Baru	t Porult	Parult	Porult	Recult	Porult	Recult	Porult	Recult	Porult	Recult	Porult P	Porult P	arult Par	rult Por	ude D	cult Recult	Porult	Parult	Parult	Parult Par	dt Beruit
E7 A 0020 - Michald	Surface Water Groundwater	iteaun.	Meson	result	nesun	meaun	nesun	Meaun	- Heading	meadic	- Neason	Nesun	incaun.	Result	Ne suit	Meadic	incapit.	neson	INCADIN	Nesun	icesuit.	Meadit	iceaunt	measure	Nesun	Result	mesun	resure	nesur ne	ne.		nesun.	Ne suit	Meadic	incapit.	meaun	Result	nezun	icesuit.	ne zun	ice suit	meaun.	negun n		nuit nea		July Result	meaun	neaun.	Result	meaun meau	- Incaun
Arsenic	50 25	< ND	NS	7.79	NS	NS	NS	12.0	71	18.0	< ND	NS	4.25	0.281	< ND	< ND	< ND	8.00 J	NS	NS	NS	NS	NS	NS	NS	17.0	NS	NS	NS I	IS N	5 NS	NS	NS	NS	NS	NS	< ND	< ND	< ND	< ND	< ND	< ND ·	<nd td="" «<=""><td>1> DI:</td><td>(D 17</td><td>1.5</td><td>(S 3.31</td><td>0.86</td><td>< ND</td><td>< ND</td><td>< ND < N</td><td>/ < ND</td></nd>	1> DI:	(D 17	1.5	(S 3.31	0.86	< ND	< ND	< ND < N	/ < ND
Barium	1000 1000	159	NS	216	NS	NS	NS	250	104	611	30.6	NS	185	7.72	< ND	61.8	29.0	89.0	NS	NS	NS	NS	NS	NS	NS	153	NS	NS	NS I	IS N	5 NS	NS	NS	NS	NS	NS	20.7	34.0	12.7	14.6	51.0	20.3	31.0	37.0 29	.0 27	77	45 88.04	59.85	87	65.8	103 10	85.0
Beryllium	3.0 3.0	< ND	NS NS	0.83	NS	NS	NS	1.20 J	0.4 J	1.20 J	< ND	NS	1.60	< ND	< ND	0.20 J	0.20 J	0.60 J	NS	NS	NS	NS	NS	NS	NS	1.00 J	NS	NS	NS I	IS N	5 NS	NS	NS	NS	NS	NS	< ND	< ND	< ND	< ND	< ND	< ND ·	< ND «	:ND <1	(D < 8	ND.	(S 0.37 J	.29 J	< ND	< ND	0.41 0.4	. 0.20 J
admium	5.0 5.0	< ND	NS	0.06 J	NS	NS	NS	0.90 J	< ND	1.60 J	< ND	NS	1.19	< ND	< ND	< ND	< ND	1.50 J	NS	NS	NS	NS	NS	NS	NS	2.50 J	NS	NS	NS I	IS N	5 NS	NS	NS	NS	NS	NS	< ND	< ND	0.13 J	< ND	< ND	< ND ·	<nd (<="" td=""><td>0.71 < 1</td><td>(D < 8</td><td>ND.</td><td>1.08</td><td>0.56</td><td>< ND</td><td>< ND</td><td>< ND 1.5</td><td>0.50 J</td></nd>	0.71 < 1	(D < 8	ND.	1.08	0.56	< ND	< ND	< ND 1.5	0.50 J
Chromium	50 50	19.9	NS NS	21.5	NS	NS	NS	34.0	11.0	34.0	< ND	NS	43.3	0.291	< ND	5.40 J	5.00 J	17.0	NS	NS	NS	NS	NS	NS	NS	26.0	NS	NS	NS I	IS N	5 NS	NS	NS	NS	NS	NS	< ND	< ND	< ND	0.25J	< ND	< ND 0	U08.0	:ND <1	(D 47	1.3	(S 13.55	1.78	< ND	3.51	13 17	9.00 J
Cobalt	5.0	< ND	NS	14.5	NS	NS	NS	10.0 J	3.00 J	17.0 J	< ND	NS	27.4	< ND	< ND	1.40 J	< ND	5.00 J	NS	NS	NS	NS	NS	NS	NS	10.0 J	NS	NS	NS I	IS N	5 NS	NS	NS	NS	NS	NS	< ND	< ND	< ND	< ND	< ND	< ND ·	< ND 1	.00 J 1.0	0) <0	ND.	(S 5.36	0.77	< ND	1.2 J	31 4	3.00 J
Copper	200 200	< ND	NS NS	24.3	NS	NS	NS	24.0	6.00 J	273	95.5	NS	690	2.67	< ND	6.60 J	15.0 J	49.0	NS	NS	NS	NS	NS	NS	NS	20.0	NS	NS	NS I	IS N	5 NS	NS	NS	NS	NS	NS	< ND	< ND	0.951	1.39	< ND	< ND ·	< ND «	:ND <1	(D 49	90	(5 114.8	27.47	< ND	5.91	21 3*	12.0 J
iron	300 300	18300	NS	30800	NS	NS	NS	27900	9790	33400	3410	NS	44100	128	420	4150	2930	14000	NS	NS	NS	NS	NS	NS	NS	29700	NS	NS	NS I	IS N	5 NS	NS	NS	NS	NS	NS	1050	1230	67.3	73	1490	< ND	550 1	1070 26	0 407	700	10200	1830	6090	2350	8060 996	5710
Lead	50 25	7.4	NS	15.5	NS	NS	NS	13.0 J	< ND	46 J	6.80	NS	268	2.99	< ND	< ND	10.0 J	22.0 J	NS	NS	NS	NS	NS	NS	NS	13.0 J	NS	NS	NS I	IS N	5 NS	NS	NS	NS	NS	NS	< ND	< ND	< ND	< ND	< ND	< ND ·	<nd td="" «<=""><td>1> DI:</td><td>(D 45</td><td>99</td><td>(S 21.57</td><td>6.84</td><td>31</td><td>< ND</td><td>61 8</td><td>5.00 J</td></nd>	1> DI:	(D 45	99	(S 21.57	6.84	31	< ND	61 8	5.00 J
Magnesium	35000 35000	7580	NS NS	8700	NS	NS	NS	9800	7000	10800	9600	NS	17000	9280	8800	4720	9800	12600	NS	NS	NS	NS	NS	NS	NS	16400	NS	NS	NS I	IS N	5 NS	NS	NS	NS	NS	NS	11500	8800	7170	786	10000	12000 1	12500 1	0000 118	300	000	(S 23700	24000	25200	24800	25700 263"	J 25700
Manganese	300 300	509	NS	983	NS	NS	NS	660	234	1280	82.9	NS	1096	9.48	23.0	125	108	397	NS	NS	NS	NS	NS	NS	NS	1150	NS	NS	NS I	IS N	5 NS	NS	NS	NS	NS	NS	1090	2170	4115	1840	8080	4980 1	1430 4	1830 45	90 96	51	(S 348.2	66.68	146	49.1	189 28	171
Nickel	100 100	< ND	NS	29.7	NS	NS	NS	15.0 J	5.00 J	< ND	< ND	NS	62.4	< ND	< ND	< ND	< ND	5.00 J	NS	NS	NS	NS	NS	NS	NS	27.0 J	NS	NS	NS I	IS N	5 NS	NS	NS	NS	NS	NS	< ND	< ND	5.04	3.14	< ND	2.80 J ·	<nd 6<="" td=""><td>1> L00.</td><td>(D 77</td><td>1.3</td><td>IS 11.66</td><td>1.92 J</td><td>< ND</td><td>< ND</td><td>41 5</td><td>< ND</td></nd>	1> L00.	(D 77	1.3	IS 11.66	1.92 J	< ND	< ND	41 5	< ND
Selenium	10 10	< ND	NS	1.93 J	NS	NS	NS	< ND	< ND	< ND	< ND	NS	3.61 J	< ND	< ND	< ND	< ND	< ND	NS	NS	NS	NS	NS	NS	NS	< ND	NS	NS	NS I	IS N	5 NS	NS	NS	NS	NS	NS	< ND	< ND	< ND	< ND	< ND	< ND ·	<nd <<="" td=""><td>:ND <1</td><td>4D < 8</td><td>VD.</td><td>4S < ND</td><td>< ND</td><td>< ND</td><td>< ND</td><td>< ND < N</td><td>/ < ND</td></nd>	:ND <1	4D < 8	VD.	4S < ND	< ND	< ND	< ND	< ND < N	/ < ND
Sodium	20000	2200	NS	1840	NS	NS	NS	2900	2500	2600	3670	NS	3480	3980	3600	2080	4200	4500	NS	NS	NS	NS	NS	NS	NS	17000	NS	NS	NS I	IS N	5 NS	NS	NS	NS	NS	NS	4340	4000	2850	3120	3800	4620 4	4200 3	1400 41	00 61	70	(S 5940	6760	6300	6760	6900 72°	0 7000

		Sample	D				MW-8									MW-9									MW-10								MW-100)								MW-11									MW-12				
etected Parameters		Sample Da	te 7/15/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20	3/25/21	4/12/22	9/14/23	7/14/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20	3/25/21	4/12/22	9/14/23	7/14/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20	3/25/21	4/12/22	14/23 7/1-	1/14 10/	/24/16 3/23	17 5/9/1	9/19/19	10/27/20	3/25/21	4/12/22	9/14/23	7/14/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20	3/25/21	4/12/22	9/14/23	7/15/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20	3/25/21	4/12/22	9/14/23
		Matri	С	•			iroundwater				•					Groundwater			•		•	•			Groundwater			•			•		Groundwa	ter	•		•		•			Groundwater		•		•					Groundwater				
PA 6010 - Metals	NYSDEC TO	OGS 1.1.1	Porult	Porult	Parult	Porult	Porult	Regult	Porult	Parult	Parult	Parult	Porult	Parult	Porult	Parult	Porult	Parult	Porult	Pacult	Porult	Regult	Porult	Porult	Porult	Porult	Parult	Porult	locult Ro	ult D	locult Por	dt Bornd	t Porult	Recult	Parult	Regult	Porult	Porult	Porult	Porult	Porult	Parult	Porult	Porult	Regult	Porult	Parult	Porult	Parult	Porult	Parult	Porult	Result	Parult	Parult
A 0020 - Michild	Surface Water	Groundwater	Keauk	Meaun	ives un	nezun	Meaun	neaun	mesun	Result	meadit	Neason.	Result	rocaun.	Result	Nesun.	Nesun	incaur.	mesun	iocau.	Meadin	Result	mezun	result.	nesun	Nesun	Result	Nesun	ne.		nes	100301	, nesun	incapit.	Headit	incapit.	nesun	Result	neadic	icesuit.	Nezuk	icesuit.	nesun	iceaun.	Result	Meaun	Result	Nesuit	Result	Nesun	INCAUN.	Nesun	incaun.	Mesuit	INCOUN
rsenic	50	25	< ND	< ND	8.7	.30 J	18	12	10 J	< ND	32.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< ND	2.7	1.11	NS	NS	< ND	NS	NS <1	4D <	< ND 1.5	4 0.42	< ND	< ND	< ND	< ND	< ND	< ND	< ND	1.3	0.26 J	< ND	< ND	< ND	< ND	< ND	< ND	< ND	10.39	1.62	< ND	18.5	33	12	11.0
arium	1000	1000	51.1	158	311.2	48.49	215	140	142	97	274	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	941	53.01	16.98	NS	NS	182	NS	NS 48	.7 1	862 89.	4 101.2	48	35.1	70	113	69	26.7	63	32.31	15.18	93	68.4	75	27	12.0 J	101	79	345.7	71.64	146	249	399	192	204
eryllium	3.0	3.0	< ND	< ND	1.76	< ND	< ND	1.2 J	1.0 J	0.5 J	3.10 J	NS NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< ND	< ND	< ND	NS	NS	0.7 J	NS	NS <	(D <	< ND 0.1	J < ND	< ND	< ND	< ND	0.2 J	< ND	< ND	< ND	AND	< ND	< ND	0.40 J	0.40 J	< ND	< ND	< ND	< ND	1.21	< ND	< ND	1.3 J	2.7 J	1.0 J	1.00 J
admium	5.0	5.0	< ND	< ND	0.4	< ND	< ND	< ND	< ND	< ND	0.60 J	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< ND	0.35	0.2	NS	NS	6.6	NS	NS <1	(D <	< ND < N	D 0.1 J	< ND	< ND	< ND	1.1 J	< ND	< ND	< ND	0.27	0.06 J	< ND	< ND	< ND	< ND	< ND	< ND	< ND	0.26	< ND	< ND	< ND	1.2 J	0.7 J	< ND
hromium	50	50	< ND	23	24.73	.65 J	44	29	25	14	75.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< ND	9.61	3.15	NS	NS	57	NS	NS <	(D <	< ND 2.7	2 0.64	< ND	1.6 J	41	8.1	2.00 J	< ND	12	2.08	0.42 J	13	10.5	11	< ND	< ND	16	< ND	39.68	3.5	20	44.7	114	38	36
obalt	5.0		< ND	< ND	31.38	.29 J	< ND	12.6 J	11 J	4.1	39.0 J	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< ND	1.44	.25 J	NS	NS	71	NS	NS <1	(D <	< ND 3.2	2 1.12	< ND	< ND	0.9 J	2 J	1.00 J	< ND	< ND	1.59	0.2 J	< ND	3.3 J	41	< ND	< ND	< ND	< ND	31.38	2.04	< ND	17.5 J	40 J	14 J	15.0 J
opper	200	200	< ND	53	203.8	2.33 J	91	51.7	38	26	176	NS NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< ND	6.89	3.5	NS	NS	27	NS	NS <	(D <	< ND 3.5	9 7.32	< ND	< ND	< ND	71	4.00 J	< ND	< ND	3.87	0.85 J	< ND	6.9 J	71	< ND	< ND	< ND	< ND	42.28	3.79	< ND	28.4	62	23	22
non	300	300	5780	20900	34400	588	45300	28800	23800	11900	81300	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	3920	2730	175	NS	NS	21500	NS	NS 4	10 2	2550 39	0 487	450	355	1650	3970	1640	1600	13400	2850	3640	12800	8830	9000	1740	680	14400	3130	50700	4150	19600	43800	118000	36900	38000
ead	50	25	< ND	< ND	28.11	.40 J	9.1	6.1 J	41	< ND	27.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< ND	2.05	1.8	NS	NS	7.1	NS	NS <1	(D <	< ND 1.4	9 1.4	< ND	< ND	< ND	< ND	< ND	< ND	< ND	1.88	0.46 J	41	3.01	4.1	< ND	< ND	< ND	< ND	31.72	2.57	6.1	17.31	40 J	12 J	16.0 J
fagnesium	35000	35000	13200	14200	20100	12800	22300	19200	18600	16500	28400	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	33000	17200	14900	NS	NS	22200	NS	NS 19:	100 34	14000 167	1700	18900	19800	20500	19800	21100	10800	3100	9660	9560	11100	18000	15100	14500	11200	39300	36100	46300	30500	43200	46600	57900	48300	45200
fanganese	300	300	65.9	333	1231	8.82	610	381	302	166	977	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1710	122.1	13.77	NS	NS	339	NS	NS 95	.5 1	1200 23	2 443	219	64.2	327	384	876	855	462	1824	84.14	2190	784	1300	524	84.0	335	314	6411	413.6	958	2450	4700	2270	1940
lickel	100	100	< ND	< ND	43.56	.771	< ND	23.1 J	16 J	8.1	14.0 J	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< ND	350	< ND	NS	NS	12 J	NS	NS <1	(D <	< ND 5.6	3 1.32	< ND	< ND	< ND	< ND	< ND	< ND	< ND	4.36	0.62 J	< ND	5.3 J	8.1	< ND	< ND	< ND	< ND	52.44	4.29	< ND	31.0 J	87	22 J	< ND
elenium	10	10	< ND	< ND	5.45	< ND	< ND	< ND	< ND	< ND	< ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< ND	< ND	< ND	NS	NS	< ND	NS	NS <	(D <	<nd <n<="" td=""><td>D < ND</td><td>< ND</td><td>3.60 J</td><td>< ND</td><td>< ND</td><td>< ND</td><td>8.1</td><td>< ND</td><td>< ND</td></nd>	D < ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	3.60 J	< ND	< ND	< ND	8.1	< ND	< ND
odium		20000	4520	cooo	4500	coco	5200	5290	5500	5200	0033	NC	NC	N/C	MS	NE	MS	MC	MS	MC	MS	20200	17000	16200	MS	NC	19200	NC	MC 17	100 21	19700 219	10 22201	15200	16000	16100	22200	16500	2610	2000	2000	2160	2500	5020	4200	2000	2400	21500	22700	21900	19600	22900	25200	25500	25900	25400

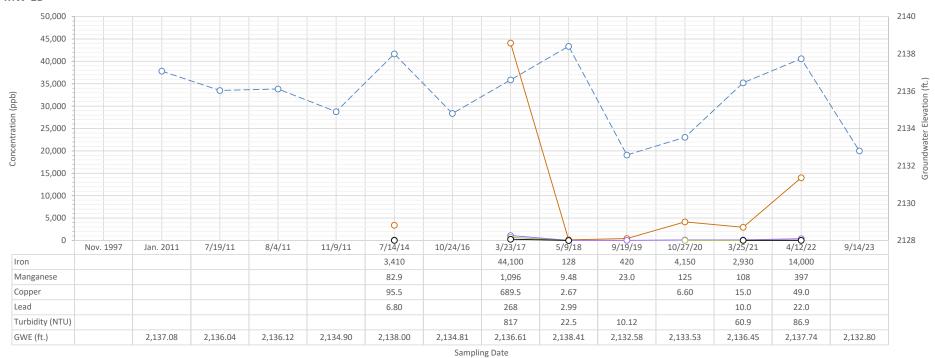
		Sample ID				м	W-13								SW-1									SW-2								SW-3								SW-4								8354 Jackson F	Hill			
ted Parameters		Sample Date	7/15/14	10/24/16	3/23/17	5/9/18 9/.	20/19 10	0/27/20	3/25/21 4/	12/22 9/14	1/23 7/1!	5/14 10/2	4/16 3/23/1	.7 5/9/	/18 9/19/1	9 10/27/20	3/25/21	4/12/22	9/14/23	7/14/14	10/24/16	3/23/17	5/9/18 9	9/19/19 10	27/20 3/25/21	4/12/	/22 9/14/23	7/14/14	10/24/16	3/23/17	5/9/18	9/19/19 1	10/27/20 3/2	6/21 4/12/2	22 9/14/23	3 7/14/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20	3/25/21	4/12/22	9/14/23 7/1	14/14 10/:	24/16 3/23/	3/17 5/9/18	9/19/19	10/27/20	3/25/21	4/12/27	9/14/23
		Matrix		•	•	Grou	ndwater							•	Groundw	ater		•	•		•		Gro	oundwater	•		•			•		roundwater	•	•			•	•		Groundwater	•				•	•		Groundwate	H	•		-
i010 - Metals	NYSDEC T		Pocult	Porult	Recult	Parult P.	ocult 5	Parult .	Porult D	acult Par	ult Ro	cult Por	ult Recul	Por	ult Parul	Porult	Recult	Porult	Pacult	Porult	Porult	Porult	Porult	Porult 5	sult Result	Paru	ult Parult	Porult	Parult	Porult	Parult	Parult	Parult Pa	ult Parui	t Porult	Porult	Parult	Porult	Parult	Regult	Porult	Porult	Regult	Parult I	esult Re	esult Resu	uilt Result	Result	Result	Parult	Porult	Parult
	Surface Water	Groundwater	iceaux.	nezun	result	nesun in	esun .	nesur.	meson.	eson ne	ion ion	aun ne	uit iteau		uit iteaui	. nesun	incaur.	mesun	inesuit	Mezuik	icesuic	Result	icesuit.	nezur.	THE RESULT	ne su	un nesun	Nesuit	Result	Meaut	rocaun.	nesun	nesun ne	ion ness	ne meson	· · · · · · · · · · · · · · · · · · ·	nezun	- Nesun	nesun	Result	nesun	resur	meson	mesun no		esun ness	nesun.	INC.	Meadit	TOU SUIT	mesuit	THE SUIT
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anese	300	300	1040	147	12340	1092	536	NS	4280 :	1420 30	20 10	110 98	9 6.64	11.	.6 NS	NS	5.1	91	NS	42.3	NS	NS	NS	NS	.OJ 19	16	s NS	204	14	9.85	68.31	188	17.2 2	2 11	314	169	11	114.5	30.22	55	12.3	17	NS	414	NS 4	47 15.	i.2 13	< ND	NS	14	22	< ND
	100	100	< ND	< ND	210.3	34.04 <	ND	NS	134	44 <1	(D <1	1> QN	ID < ND	< N	ID NS	NS	< ND	< ND	NS	< ND	NS	NS	NS	NS ·	ND < ND	< NE	ID NS	< ND	< ND	0.90 J	< ND	< ND	< ND <1	ID < ND	< ND	< ND	< ND	3.95	1.67 J	< ND	< ND	< ND	NS	< ND	NS <	ND 0.56	6J < ND	< ND	NS	< ND	< ND	< ND
am .	10	10	< ND	< ND	21.2	2.23J <	ND	NS	< ND ·	<nd <1<="" td=""><td>(D <1</td><td>ND <1</td><td>ID < ND</td><td>< N</td><td>ID NS</td><td>NS</td><td>< ND</td><td>< ND</td><td>NS</td><td>< ND</td><td>NS</td><td>NS</td><td>NS</td><td>NS ·</td><td>ND < ND</td><td>< NE</td><td>ID NS</td><td>< ND</td><td>< ND</td><td>< ND</td><td>< ND</td><td>< ND</td><td>< ND <1</td><td>(D < ND</td><td>< ND</td><td>< ND</td><td>< ND</td><td>< ND</td><td>< ND</td><td>< ND</td><td>< ND</td><td>< ND</td><td>NS</td><td>< ND</td><td>NS <</td><td>:ND <n< td=""><td>ND < ND</td><td>< ND</td><td>NS</td><td>< ND</td><td>< ND</td><td>< ND</td></n<></td></nd>	(D <1	ND <1	ID < ND	< N	ID NS	NS	< ND	< ND	NS	< ND	NS	NS	NS	NS ·	ND < ND	< NE	ID NS	< ND	< ND	< ND	< ND	< ND	< ND <1	(D < ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	< ND	NS	< ND	NS <	:ND <n< td=""><td>ND < ND</td><td>< ND</td><td>NS</td><td>< ND</td><td>< ND</td><td>< ND</td></n<>	ND < ND	< ND	NS	< ND	< ND	< ND
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MW-1S



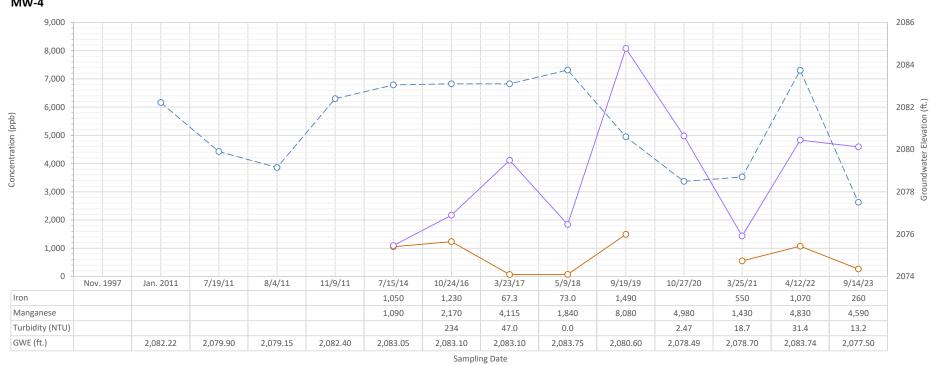
—O— Manganese — O− · GWE (ft.) O— Iron

MW-1D



—O— Copper —O— Lead --O-- GWE (ft.) Iron — O Manganese

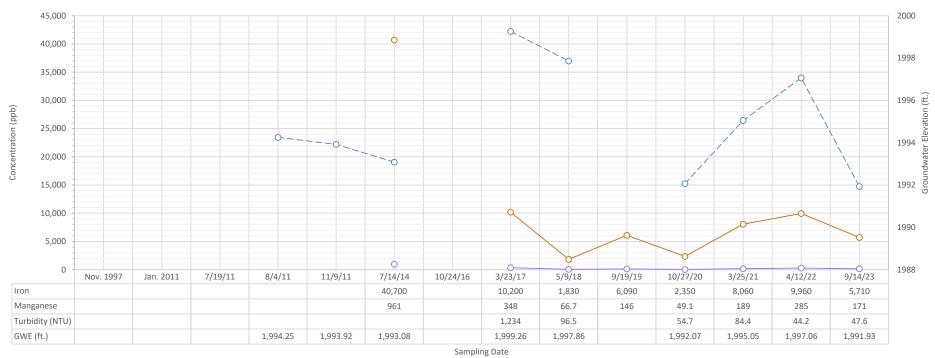
MW-4



—O—Iron —O— Manganese — O− · GWE (ft.)

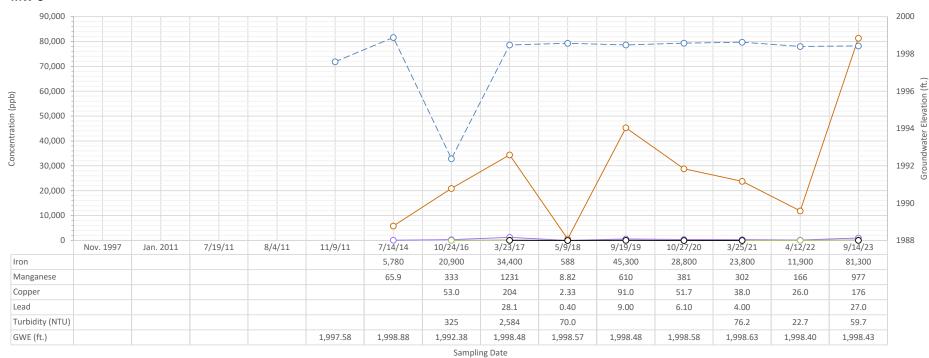






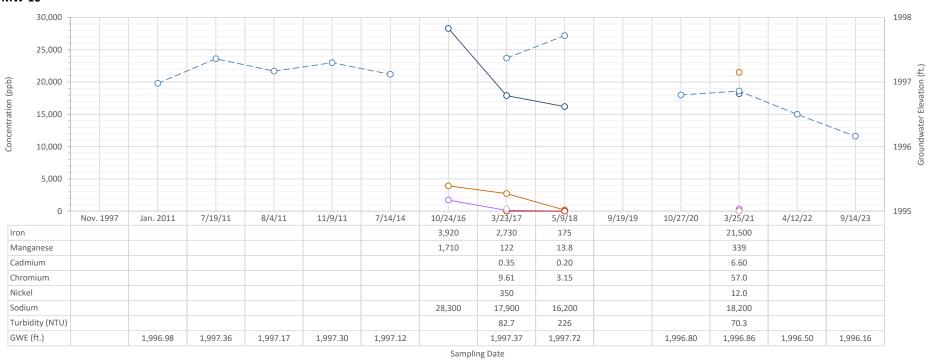
—O Iron —O Manganese —O GWE (ft.)

MW-8



── Iron ── Manganese ── Copper ── Lead ── GWE (ft.)

MW-10







MW-10D



——— Manganese —O— Sodium

MW-11





MW-12





Sampling Date

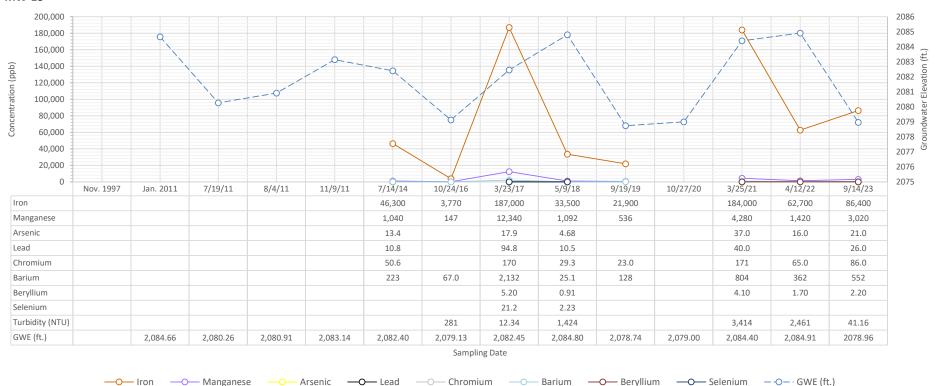


MW-13

—O— Manganese

—O— Arsenic

—O— Lead



—O— Chromium

—○— Barium

──── Beryllium



Cuba Municipal Waste Disposal Site (#902012) Periodic Review Report 2023-2024 Groundwater Elevations Summary

Table 3-0 Groundwater Elevations: September 2023

Well ID	Casing Elevation	Depth to Water	Groundwater Elevation	Well Depth
MW-1S	2210.85	30.47	2180.38	32.87
MW-1D	2210.61	77.81	2132.80	78.82
MW-2	2099.59			
MW-3	2099.59	24.91	2074.68	25.04
MW-4	2103.60	26.10	2077.50	32.30
MW-7	2075.76	83.83	1991.93	99.60
MW-8	2071.58	73.15	1998.43	80.33
MW-9	2201.21	88.42	2112.79	88.60
MW-10	2051.47	55.31	1996.16	55.40
MW-10D	2051.47	65.09	1986.38	84.00
MW-11	2103.68	26.47	2077.21	32.76
MW-12	2098.24	31.08	2067.16	40.10
MW-13	2106.95	27.99	2078.96	29.67

Notes

Results presented in feet



Cuba Municipal Waste Disposal Site (#902012) Periodic Review Report 2023-2024 Institutional and Engineering Controls Compliance Summary

Table 4-0

Institutional/Engineering Control	Description	Objective	Monitoring	Performance/Status
	In	stitutional Controls		
Land Use Restriction	Restricts the use of the landfill property.	Controls potential for direct contact with waste materials, leachate, and contaminated groundwater.	NA	Use of the property has been restricted through the recorded Declaration of Covenants and Restrictions with Allegany County.
Groundwater Use Restriction	Restricts the use of groundwater.	Controls potential for direct contact with contaminated groundwater.	NA	Groundwater use restriction in effect as part of the Declaration of Covenants and Restrictions with Allegany County for the Cuba Landfill Site area groundwater.
Excavation Work Plan	Describes procedures to be used to manage excavated contaminated soil and /or waste from the Site (sampling, analysis, disposal requirements).	To provide for appropriate handling, management, and disposal of contaminated soil and/or waste.	NA	Excavation plan to be implemented in accordance with approved Site management plan. To date, no excavation of contaminated soil or waste has occurred during the reporting period.
	Determines the potential for soil vapor intrusion and if mitigation measures, such as creating a vapor barrier or a passive sub-slab depressurization system, are necessary.	Eliminate potential exposure to vapors in the proposed structure.	NA	The potential for vapor intrusion must be evaluated for any buildings to be developed on or around the Site, and any potential impacts that are identified must be monitored or mitigated. Measures to mitigate potential vapor intrusion will be evaluated, selected, designed, installed, and maintained based on the soil vapor instrusion evaluation, the NYSDOH guidance, and construction details of the proposed structure.
	Eng	ineering Controls		
Engineered Landfill Cap	Comprised of a geocompoSite gas venting layer, a 40-mil LLDPE textured geomembrane, geocompoSite drainage layer, and an 18-in. soil barrier protection layer. Topsoil and a reinforced vegetated surface are over the barrier protection layer.	Prevent exposure to remaining contamination in soil/fill at the Site by placing cap over the remaining and consolidated waste	Monitoring via Site inspections and leachate indicator monitoring.	Cap is vegetated, stable, and effective. Maintenance operations are limited to repairs to minor localized erosion and control of animal burrows in surficial cover soils. Leachate indicators are analyzed periodically. Leachate generation rates are decreasing, as would be expected following the construction of an engineered cap.

Institutional/Engineering Control	Description	Objective	Monitoring	Performance/Status
I Dacciva (-ac Vanto	Polyvinyl chloride pipe gas vents were installed within the landfill cap boundaries.	Collect landfill gas generated under the cap and to convey the gas to the existing landfill gas collection system to control potential for lateral migration.	Monitored via Site inspections and monitoring of landfill gas with portable monitoring equipment.	Gas monitoring results are typical of landfill gas and appropriate operation of the gas control system is in place.
Landfill Surface Drainage	Following the placement of the geocompoSite drainage layer, a strip of the geocompoSite was cut	Four drainage swales were included in the landfill cap design to promote efficient drainage over the cap. Each swale was constructed to allow stormwater to flow in a northeast-southwest direction across the landfill.	Monitored through Site inspections and groundwater/surface water sampling.	A media monitoring program is in place for groundwater. Groundwater and surface water samples are collected on an annual basis, per SMP. Stream and tributary water quality has not been impacted from surface water discharges from the Site. VOC and metal concentrations are generally decreasing or remaining stable in groundwater.
	168 willow trees were planted south of the retention pond. Two (2) varieties of bare-root willow trees were selected to be planted. The tree varieties include golden curls willow and prairie cascade willow.	Trees were intended to mitigate potential leachate seepage south of the Site. Staining was previously observed in stream water during RI sampling along the southern boundary of the Site.	Monitored through Site inspections.	To date, there has been no evidence of excessive leachate on the access road south of the willow trees planted for phytoremediation. Approx. 30% of the willow trees have died at the east end of the planting area.
Site Security	8-ft chain link fence gates were installed at the entrances of the property on Deep Snow Road, one (1) to the southwest of the Site and one (1) to the north of the Site. Gates have been secured with locks.	Minimize the potential for trespassing and vehicular traffic.	Monitoring via Site inspection.	Security measures in place and effective.
Arress Road	A permanent maintenance road was constructed by placing 6 in. of road paving material over a non-woven geotextile.	Provides access controls to the Site, minimizing the potential for human encroachment on the landfill cap surface.	Monitoring via Site inspection.	Access road in place and effective.



Groundwater Sampling Field Record

Project Name	Cuba Land	lfill Monitorin	g/Inspecti	on			Jo	b # 50191-01
Location ID	MW-	- ID	Field	Sample ID		N/A _	_ Sa	mpling Event # ate 9/15/23
Activity Time	= 10:11	0	Sam	ple Time _	1	N/A	Da	ite 9/15/23
SAMPLING I		222 F2 In						- 1
Initial Depth	to Water	77.81 fee	et Meas	surement Po	oint	<u> </u>	W	ell Diameter 2
Final Depth to	o Water	fee fee gal	<u>et</u> Well	Depth	48.82	feet	W	ell Integrity: Cap Casing Locked Collar
Screen Lengt	1	fee	t Pum	p Intake De	pth	-		Cap
Total Volume	Purged	gal	llons PID	Well Head		/		Casing
Lbaige volume (in	minuers per min	ute) x time duration iameter = 0.163 gal	n (minutes) x	0.00026 gai/m	mmerj		ot of donth	Locked
PURGE DAT	A	idineter 0.105 gai	ions per root	or depth, 4 die	ameter – 0.03	s ganons per ic	ot of depui	Collai
Dep			pН	Dissolved	Turbidity	Cond.	ORP	× 1
Time Wate	er (ft) (ml/mi	in) (deg. C)	(units)	O2 (mg/L)	(NTU)	(mS/cm)	(mV)	Comments
			<u> </u>					
Purge	Observation	ıs:	MA					
Purge	Water Conta	ainerized:	AIN					
EOHIDMENIT	DOCUMEN	AT ATION						
EQUIPMENT	DOCUMEN	NIATION						
Type of Pump	· HDPE bai	ler						
Type of Tubir								
		eter: YSI ProD	SS			Calibrat	ted:	Yes
J1	· · · · · · · · · · · · · · · · · · ·					Cultoru		103
ANALYTICA	L PARAME	TERS			LOC	CATION NO	OTES	
Parameter	<u>Volumes</u>	Sample Co	ollected		No	t enough	n wester	to sample.
VOCs	3 x 40 ml			_		2		•
Metals	2 x 125 ml				72			
					29-			
					-			
G:-								
Signature:								
Chooked Den				=======================================	\$ 			



Groundwater Sampling Field Record

Project 1 Location Activity	Name <u>Cub</u> n ID Time	Da Landfill I MW - 15 9: 45	Monitoring	/Inspection Field Samp	Inspection Field Sample ID MW-1S Sample Time 9:55				Job # 50191-01 Sampling Event # Date 9/15/23	
SAMPL	ING NOTI	ES								
Final De Screen I Total Vo [purge volu	epth to Water to Water in cash	ter 30. ter 5 ged 5 s per minute) x ng - 2" diameter	feet feet gall time duration	Well Pumpons PID (minutes) x	0.00026 gal/mi	32.8- pth		We t We	ell Diameter2 \\ ell Integrity: Cap Casing Locked Collar	
Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments	
I	Purge Obse	ervations: _ er Containe	Turbi'	d N/	A					
EQUIPN	MENT DO	CUMENTA	TION							
Type of Type of	Water Qua	DPE bailer HDPE \ ality Meter:	ÝSI ProD	SS		LO	Calibra	ited:	Yes	
Paramet			Sample Co	ollected		No			ter volume	
VOCs Metals		40 ml 125 ml			<u></u>	to	lirectly w	Jeadin Lithout	purping first.	
						\(\frac{1}{2} \)			- 20	
Checked	ı By:				<u> </u>					



Project 1	Name <u>Cul</u>	oa Landfill	Monitoring	y/Inspecti	<u>on</u>		10	Job	# <u>50191-01</u>	
Location	1 ID	MW-3		Field	Sample II	M = M/	A_	Sampling Event # Date _ 9/14/23		
Activity	Time	MW-3		Sam	I Sample II ple Time _	N/	'A	Da	te 9/14/23	
CARADY	INC NOT	ng								
	ING NOTI									
Initial D	epth to Wa	ater ter	feet	Meas	surement P	oint N		We	ell Diameter	2 11
Final De	pth to Wa	ter	feet	Well	Depth	25.0	94 feet	t We	Cap Casing Locked Collar	
Screen I	ength	_	feet	Pum	p Intake De	epth	_		Capl	_
Total Vo	olume Purg	ged	gall	ons PID	Well Head		_	<u>-</u>	Casing	/
[purge volu	ıme (milliliter	's per minute) x	time duration	(minutes) x	0.00026 gal/m	illiliter]			Locked	_
		ng – 2" diamete	er = 0.163 gall	ons per foot	of depth, 4" di	ameter = 0.653	gallons per fo	oot of depth	Collar	
PURGE	DATA									
	Depth to	Purge Rate	Temp.	pН	Dissolved	Turbidity	Cond.	ORP		
Time	Water (ft)	(ml/min)	(deg. C)	(units)	O2 (mg/L)	(NTU)	(mS/cm)	(mV)	Comments	

					-					
-										
-										_
	01			N 1 / N						
P	'urge Obse	ervations: _ er Containe	4	MA	la)					
P	'urge Wate	er Containe	rized:	P	/14					
FOLIDA	IENT DO	CUMENTA	TION							
LOCITIV	ILIVI DO	CONTENTA	11011			9				
Type of	Pump: HE	PE bailer								
	Tubing:		ALL			**				
		ality Meter:	YSI ProD	SS			Calibra	ted:	Yes	
3.1	Will the second of the second				= 					
ANALY'	TICAL PA	RAMETER	RS			LOC	CATION N	OTES		
Paramete	er Vol	umes	Sample Co	llected			Liell	Den		
VOCs	3 x	40 ml								
Metals	2 x	125 ml				Fa				
					4					
						-				
Signatur	e:					1 to 1				
Checked	Ву:									



ACCOUNT TIME 9: 45 Sample Time	Project 1	Name Cul	oa Landfill	Monitoring	/Inspectio	on			Jo	ob # 50191-01		
Addivity Time 9.45 Sample Time 9.55 Date 9/14/23 SAMPLING NOTES Initial Depth to Water 26.10 feet Well Depth 32,30 feet Well Diameter 2 Well Integrity: Total Volume Purged 3 gallons PID Well Head Casing Locked Column of Water in casing 2.7 diameter = 0.163 gallons per foot of depth. 4 diameter = 0.653 gallons per foot of depth. 4 diameter	Location	ı ID	MW-L	1	Field	Sample ID	MU	J-4	S	Sampling Event #		
AMPLING NOTES mitial Depth to Water	Activity	Time	9:45		Samp	ole Time	9:	55	_ D	ate 9/14/23		
Time												
Time	Initial D	epth to Wa	ater26	, 10 feet	Meas	surement Po	ointN	<u> </u>	V	/ell Diameter		
Time	Final De	epth to Wa	ter31	eet feet	Well	Depth	32.30	fee	t W	ell Integrity:		
Time	Screen I	Length		feet	Pump	Intake De	pth	-		Cap		
Time	Total Vo	olume Purg	ged3	gallo	ons PID	Well Head		1		Casing		
Time	10.0	1.7			đ (č.				1 60 0	Locked		
Depth to Purge Rate Temp. pH Dissolved Turbidity Cond. ORP (mV) Comments			ng – 2" diamet	er = 0.163 gallo	ons per foot	of depth, 4" dia	ameter = 0.65	3 gallons per fo	oot of depth	Collar		
Time Water (ft) (mil/min) (deg. C) (units) O2 (mg/L) (NTU) (mS/cm) (mV) Comments	TURGE	DATA										
9:50 9.6 7.0 3.68 27.12 0.358 196.7 1 pallon 9:52 9.5 6.9 3.81 20.19 0.340 199.6 1.7 pallon 9:58 9.1 7.1 3.79 13.17 0.340 20.3 \simple 1.78 pallon 13.17 20.3 \simple								DOM STREET STATE	120000000000000000000000000000000000000	- La revisió seculo.		
9:52	-	Water (ft)	(ml/min)									
Purge Observations: Clear water Purge Water Containerized: N/A COUIPMENT DOCUMENTATION Type of Pump: HDPE bailer Type of Tubing: HDPE N/A Type of Water Quality Meter: YSI ProDSS ANALYTICAL PARAMETERS Parameter Volumes Sample Collected VOCs 3 x 40 ml Metals 2 x 125 ml Signature: LOCATION NOTES		100	Trans.		4.0	5.68			146.1	Al Pallon		
Purge Observations:				7.5		3.81	The same of the same of the					
Type of Pump: HDPE bailer Type of Tubing: HDPE	7:50	孙	le.	9.1	7.1	3.79	13.1+	0,340	201.3	~ 1.75 pallon		
Type of Pump: HDPE bailer Type of Tubing: HDPE												
Type of Pump: HDPE bailer Type of Tubing: HDPE			10									
Type of Pump: HDPE bailer Type of Tubing: HDPE												
Type of Pump: HDPE bailer Type of Tubing: HDPE												
Type of Pump: HDPE bailer Type of Tubing: HDPE												
Type of Pump: HDPE bailer Type of Tubing: HDPE												
Type of Pump: HDPE bailer Type of Tubing: HDPE												
Type of Pump: HDPE bailer Type of Tubing: HDPE												
Type of Pump: HDPE bailer Type of Tubing: HDPE												
Type of Pump: HDPE bailer Type of Tubing: HDPE	F	Purge Obse	ervations: _	Clear	water							
Type of Pump: HDPE bailer Type of Tubing: HDPE	F	Purge Wate	er Containe	rized:	NIA							
Type of Pump: HDPE bailer Type of Tubing: HDPE	EOLUDA	TENT DO	CTIMITENIE A	TION								
Type of Tubing: HDPE V/A Type of Water Quality Meter: YSI ProDSS Calibrated: Yes ANALYTICAL PARAMETERS Parameter Volumes Sample Collected VOCs 3 x 40 ml Metals 2 x 125 ml Signature:	EQUIPN	TENT DO	CUMENTA	TION								
Type of Tubing: HDPE V/A Type of Water Quality Meter: YSI ProDSS Calibrated: Yes ANALYTICAL PARAMETERS Parameter Volumes Sample Collected VOCs 3 x 40 ml Metals 2 x 125 ml Signature:	Type of	Pumn: HF	DF hailer									
Type of Water Quality Meter: YSI ProDSS Calibrated: Yes ANALYTICAL PARAMETERS Parameter Volumes Sample Collected VOCs 3 x 40 ml Metals 2 x 125 ml Signature:				/A								
ANALYTICAL PARAMETERS Parameter Volumes Sample Collected VOCs 3 x 40 ml Metals 2 x 125 ml Signature:					22			Calibra	ted:	Ves		
Parameter Volumes Sample Collected VOCs 3 x 40 ml Metals 2 x 125 ml Signature:	Type of	Trater Qui	unity ivicion.	1511100	30			Canora		103		
Parameter Volumes Sample Collected VOCs 3 x 40 ml Metals 2 x 125 ml Signature:	ANALY'	TICAL PA	RAMETEI	RS			LOC	CATION N	OTES			
Metals 2 x 125 ml Signature:	Paramet	er Vol	umes	Sample Co	llected		i a					
Signature:	VOCs	3 x	40 ml	ı								
Signature:	Metals	2 x	125 ml	1								
Signature:												
Signature:							4					
Signature:										2		
healed Har	Signatur	re:				====						
Checked By:	Checked	ву:										



Project Name	Cuba Landfill	Monitoring	Inspection	on			Jo	b # 50191-01	
Location ID	MW-07	_	Field	Sample ID	Mu	_ Sa	Sampling Event #		
Activity Time	10:30		Samp	Sample ID ole Time	11:	5	_ D	ate 9/15/23	
[purge volume (m	to Water	time duration (minutes) x	0.00026 gal/mi	lliliter]		wet W	Vell Diameter 2 Cap Vell Integrity: Cap Vell Casing Vell Locked Vell Collar Vell Vell Collar Vell Vell Vell Vell Vell Vell Vell Vel	
PURGE DAT		3		•		0 1			
Time Wate		Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments	
10:40		14.6	7.44	4.72	24.63	0.463	195.0	a 2 pallons	
10:50		11.4	7.49		48.86		210.7	~ 4 anyons	
11:05		11.4	7.44	5.04	47.61	0.432	203.5	~ 4 gallons ~ 6.5 gallons	
EQUIPMENT	DOCUMENTA		at direct	, slightly	y turbid	ajter i	he first	3 gallons purpeo	
	: HDPE bailer	110							
	ng: HDPE \ or Quality Meter		22	s		Calibr	ated:	Yes	
Type of wate	Quality Meter	. <u>151110D</u> .				Calibra	aicu	1 65	
ANALYTICA	L PARAMETE				LOC	CATION N	OTES		
<u>Parameter</u>	Volumes	Sample Co	llected		¥=				
VOCs Metals	3 x 40 ml 2 x 125 ml	ı	_	_	-				
Signature: Checked By:									



Location		Da Landfill W-08 0:55		g/Inspection Field Samp	on Sample II ole Time _) N	NW-8_		ob # 50191-01 ampling Event # Pate _ 2/14/23
SAMPLI	ING NOTI	ES							
Final De Screen L Total Vo [purge volu	epth to Watength blume Purgume (milliliter Water in casi	ged 2 s per minute) s ng - 2" diamet	fee fee 50 gal time duration	t_ Pumj lons PID ((minutes) x	p Intake De Well Head 0.00026 gal/m	epth illiliter]		-	Vell Diameter
Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
11:03	76.88	(III/IIIII)	10.2	7.37	9.66	59.72	0.273	184.3	1 gallon
P	urge Wate	ervations: _er Containe	rized:	at fir	st , sl	ightly .	turhid	afterna	rds
		PE bailer	1.						
		HDPE Nality Meter		SS			Calibr	ated:	Yes
AND THE CONTRACTOR						* 0		12	1
Paramete VOCs Metals	er <u>Vol</u> 3 x	umes 40 ml 125 ml	Sample Co	ollected	_	-1	123 - 12 St. 12	ough to	Durge 3
Signatur Checked	e: By:				_				



Project 1	Name Cub	Job # <u>50191-01</u>								
Location	ı ID	MW-0		Field	Sample ID)N	VA_	Sampling Event # Date		
Activity	Time	MW-9		Samp	ole Time _	14	A _	Dat	e 9/14/23	
SAMPL	ING NOTI	<u>ES</u>								
Initial D	enth to Wa	ater	ta feet	Meas	surement Po	oint N		We	ll Diameter2 ^{\(\)}	
Final De	epth to Wa	ter –	feet	Well	Depth	88.6	feet	We	ll Integrity:	
Screen I	ength	_	feet	Pum	o Intake De	pth	_	6 n	Cap	
Total Vo	olume Purg	ged	gall	ons PID	Well Head		_		Casing	
[purge volu	ume (milliliter	s per minute) x	time duration	(minutes) x	0.00026 gal/m	illiliter]			Locked	
		ng – 2" diamete	er = 0.163 gall	ons per foot	of depth, 4" di	ameter = 0.653	3 gallons per fo	oot of depth	Il Integrity: Cap Casing Locked Collar	
PURGE	DATA									
	D-4-4-	Doug a Data	(Projection)	IT	Dissolved	Turbidity	Cond.	ORP		
Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	O2 (mg/L)	(NTU)	(mS/cm)	(mV)	Comments	
Time	Trater (1t)	(IIII IIIII)	(acg. c)	(willia)	0 = (mg =)	(5.5.2)	X X X X X X X X X X X X X X X X X X X			
	01	ervations: _ er Containe		MIA			/			
	Purge Obse	ervations: _		MA	Λ					
J	Purge Wate	er Containe	rized:	М	π					
FOLIDA	MENT DO	CUMENTA	TION							
EQUIF	VIENT DO	COMENTA	HION							
Type of	Dumn: HI	OPE bailer								
	Tunp. <u>111</u> Tubing:	HDDE	NA	 -						
		ality Meter		22			Calibra	ited:	Yes	
Type of	water Qu	ality Mictel	. <u>131110D</u>	33			Cariora		103	
ANALY	TICAL PA	RAMETE	RS			LO	CATION N	OTES		
Paramet		lumes	Sample Co	ollected			ARN De	14		
VOCs		40 ml	- Junipio Co				M. 11	J		
Metals		125 ml				-			*	
ivictais	2 X	149 1111				9		6		
						<u> </u>				
						\$\$ 				
Signatu	re:					l.				
- LONO	- J -									



Project 1	Name <u>Cul</u>	oa Landfill	Monitoring	/Inspection	<u>on</u>		2752.5		# <u>50191-01</u>
Location	n ID	MW-13		Field	l Sample II)1	J/A	Sar	npling Event # te _ 역/14 レシ
Activity	Time	13:25		Samı	l Sample II ple Time _	N	IA	Da	te 9/14/23
	ING NOTI					18.0			2.1
Initial D	epth to W	ater	ry feet	Meas	surement P	oint N	2 feet	We	ell Diameter
Final De	pth to Wa	ter	feet	Well	Depth	55.40) feet	We	Cap Casing Locked Collar
Screen L	ength		feet	Pum	p Intake De	pth			Cap
		ged		ons PID	Well Head				Casing
		rs per minute) x					20 20	1 12500 1 4-1	Locked
PURGE		ng – 2" diamete	er = 0.163 gall	ons per foot	of depth, 4" di	ameter = 0.65	3 gallons per fo	ot of depth	Collar
Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved	Turbidity	Cond.	ORP (mV)	Comments
Time	water (II)	(mi/min)	(deg. C)	(units)	O2 (mg/L)	(NTU)	(mS/cm)	(mV)	Comments
-									
							*		
P	Purge Obse	ervations:		UH					
P	urge Wate	ervations: _ er Containe	rized:	NI	A				<u> </u>
<u>.</u>	Bo			ly l					
EQUIPM	MENT DO	CUMENTA	TION						
Type of	Pump: HD	OPE bailer							
Type of	Tubing:	HDPE N	1/A	6					
Type of	Water Qua	ality Meter:	YSI ProD	SS			Calibrat	ted:	Yes
			504			fit care saint			
		RAMETEI		11		LOC	CATION NO		
Paramete		TOTAL TOTAL CO.	Sample Co	llected		A <u></u>	Well	Dry	
VOCs Motolo		40 ml	W)			f -			
Metals	2 X	125 ml	VLE	Dely.	<u> </u>	\$ 			-
						-			
Signatur	e:					-			
Checked	Bv:					P o			
	-,-								



Project 1	Name Cul	oa Landfill	Monitoring	/Inspectio	<u>on</u>			Jo	b # 50191-01
Location	n ID	MW-19	00	Field	Sample ID ole Time	MI MI	N-10D _	_ Sa	ampling Event #
Activity	Time	13:25		Samp	ole Time	14:2	5	_ D	ate 9/14/23
SAMPL	ING NOTI	ES							
Initial D	epth to Wa	ater 65 ter 65	.09 feet	Meas	urement Po	oint N	7	V	Vell Diameter 2 \(^1\) Vell Integrity:
Final De	epth to Wa	ter <u>65</u>	- 09 feet	Well	Depth	84.00	fee	et W	ell Integrity:
Screen I	Length	ged ID	feet	Pump	Intake De	pth	_	_	Cap
							_		Casing Locked
		s per minute) x							Locked
Volume of PURGE		ng – 2" diamete	er = 0.163 gallo	ons per foot o	of depth, 4" dia	ameter = 0.65	3 gallons per f	foot of depth	Collar
FURGE	DATA								
	Depth to	Purge Rate	Temp.	pН	Dissolved	Turbidity	Cond.	ORP	
Time	Water (ft)	(ml/min)	(deg. C)	(units)	O2 (mg/L)	(NTU)	(mS/cm)	(mV)	Comments
13:45			13.6	8.34	2.94	38.76	0,432	160.2	~2 garlons ~4.5 pallons ~7 pallons
The state of the s	65.09		11.0	7.82	3.31	46, 17	0.421	167.8	24.5 pallons
14:10	65.09		10.6	775	4.15	30.18	0.416	187.8	~ 7 pallons
									,
									22
								(N	
F	urge Obse	ervations: _	Slight	ty tuch	n'd				
F	urge Wate	er Container	rized: 🔼	AIN					
FOLUDA	TENT DO	CUMENTA	TION						
EQUIPN	TENT DO	CUMENTA	HON						
Type of	Pumn: HF	PE bailer							
	Tubing:]		1/A						
		ality Meter:		SS			Calibra	ated:	Yes
-JF	· · · · · · · · · · · · · · · · · · ·			-			Curror		100
ANALY'	TICAL PA	RAMETER	<u>RS</u>			LO	CATION N	OTES	
Paramete	er Vol	umes	Sample Co	llected					
VOCs	3 x	40 ml	1	/					
Metals	2 x	125 ml				1			
					_	9			
					 -	<u>/II</u>			
a:						-		C36	
Signatur	e:		=		-	\$.			
Спескеа	ъу:								



Location	Name <u>Cul</u> n ID <u>M</u> Time <u>S</u>	Da Landfill I W - 11 D; 05	Monitoring	y/Inspection Field Samp	on Sample ID ple Time	MI 91.	Jo Sa D	Job # $50191-01$ Sampling Event # Date $9/14/\lambda$ }		
SAMPL	ING NOTI	<u>ES</u>								
[purge volu	ume (milliliter Water in casi	ater 26 ter Dro ged 3 rs per minute) x ng - 2" diameter	time duration	(minutes) x	3,122	pthilliliter]	<u>t</u> W	Well Diameter 2'' Well Integrity: Cap \[\sqrt{\text{Casing}} \] Casing \[\sqrt{\text{Locked}} \] t of depth Collar \[\sqrt{\text{Collar}} \]		
Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments	
9:15 I	30.7 Purge Observer Water	ervations: _er Containe	rized:	6.78 SINA	2.61 'ghtly	24,56 turbid	0.700	183.3	1 pallon	
EQUIPN	MENT DO	CUMENTA	TION							
Type of Type of Type of ANALY Paramet	Pump: <u>HI</u> Tubing: Water Quarter Quarter	DPE bailer HDPE ality Meter: ARAMETEI lumes	P/A YSI ProD			<u>LO</u>	Calibra	nted:	Yes	
Metals PEAS Dioxar Signatur Checked	2 x 2 X Plus M re:	40 ml 125 ml 250 ml 250 ml 351 msD	\ \ \ \ \							



Project N	Name Cub	oa Landfill	Monitoring	/Inspectio	on			J	ob # 50191-01		
Location	ID _M	IW-12		Field	Sample II) MW-1	٦ _	_ S	Sampling Event #		
Activity	Time]]	:45	*	Samp	ole Time _) MW-1 12:0	5	_ I	Sampling Event # Date 9/15/23		
,	ING NOTI										
Initial D	epth to Wa	ater 31.0 ter 38.0	1 feet	Meas	surement P	oint <u>N</u>		Ž	Well Diameter		
Final De	pth to Wa	ter <u>38.0</u>	0 feet	Well	Depth	70.10	fee	et V	Well Integrity:		
Screen L	Length	ged	feet	_ Pump	Mall Hand	eptn		-	Cap/		
Total Vo	nume Purg	rs per minute) x	time duration	(minutes) v	0 00026 col/m			<u>-07</u>	Casing V Locked V		
	1,000	ng – 2" diamet		555 255		2 To 1	3 gallons per t	foot of depth	Collar /		
PURGE				ono p or 1000	dop, , a		o gamono per i	out of depth			
	Depth to	Purge Rate	Temp.	pН	Dissolved	Turbidity	Cond.	ORP			
Time	Water (ft)	(ml/min)	(deg. C)	(units)	O2 (mg/L)	(NTU)	(mS/cm)	(mV)	Comments		
11:50	35.90		13.4	7.15	7.46	Overrang C	0.644	188.8	~1.5 gallons ~3.0 gallons		
11:58			11.5	7.20		overrange	0.642	190.5	~3,09a110ns		
12:05			13.0	7.25	7.05	overtrange	0.679	188.7	~4.25 gallons		
									-		
			L								
			N								
			- 48								
P	urge Obse	ervations: _	Turk	bid							
		er Containe		1	A/C						
EQUIPM	1ENT DO	CUMENTA	TION								
Tyma of	Dumm, LIF	OPE bailer									
	Tubing:		P/A								
		ality Meter:		22			Calibr	ated:	Yes		
Type of	water Qui	anty wictor.	1511100	55			Canon	atca	1 03		
ANALY	TICAL PA	RAMETEI	RS			LO	CATION N	OTES			
Paramete	er Vol	lumes	Sample Co	ollected		-					
VOCs	3 x	40 ml	1								
Metals	2 x	125 ml	1			V <u></u>					
		3			_						
					_	,	0				
C:						7					
Signatur	e:					3 					
CHECKEU	ъу			V							



Project 1	Name Cul	oa Landfill	Monitoring	/Inspectio	on			Jo	ob # 50191-01	
Location	ı ID	MW-13				nle ID				
Activity	Time	10:15		Samj	ple Time _	10:	25	_ D	ampling Event # ate 9/14/23	
SAMPL	ING NOT	ES								
Initial D	epth to W	ater 2: ter Do	7.99 feet	Meas	surement Po Depth p Intake De	oint N	7	W	Vell Diameter 2	
Final De	epth to Wa	ter Do	y feet	Well	Depth	29.67	fee	et W	Vell Integrity: Cap Casing Locked Collar	
Screen I	ength		feet	Pum	p Intake De	pth	-		Cap	
Total Vo	olume Pur	ged0,3	5 gall	ons PID	Well Head				Casing	
[purge volu	ume (milliliter	rs per minute) x	time duration	(minutes) x	0.00026 gal/mi	lliliter]			Locked	
		ng – 2" diamete	er = 0.163 gallo	ons per foot	of depth, 4" dia	ameter = 0.65	3 gallons per	foot of depth	Collar	
PURGE	DATA									
	Depth to	Purge Rate	Temp.	pH	Dissolved	Turbidity	Cond.	ORP		
Time	Water (ft)	(ml/min)	(deg. C)	(units)	O2 (mg/L)	(NTU)	(mS/cm)	(mV)	Comments	
10:20			10.6	8.01	2.83	41.16	0,801	170.2	2050 Callons	
								1		
	<									
	_	ervations: _		NIN	A					
I	Purge Wate	er Containe	rized:	N/A						
FOLIDA	MENT DO	CUMENTA	TION							
LOUIT	MENT DO	COMENTA	TION							
Type of	Pump: HI	OPE bailer								
	Tubing:								96	
		ality Meter:	YSI ProD	SS			Calibra	ated:	Yes	
35.55.5								7-		
		RAMETEI				LO	CATION N	NOTES		
<u>Paramet</u>		100 TOTAL TAX TOTAL	Sample Co	llected		1				
VOCs_		40 ml								
Metals	2 x	125 ml				-				
					_	<u> </u>				
				==	===	2 				
Signatur	·e·					17				
Checked	1 Bv:					5.				
SHOOKOU										



Project 1	Name Cul	ba Landfill	Monitoring	/Inspecti	on			Jol	b # <u>50191-01</u>	
Location	n ID	SW-1 12:15)	NIA _	Sampling Event # Date 9/15/23		
Activity	Time	12:15		Sam	ple Time _	٨	MA _	Da	te 9/15/23	
SAMPL	ING NOT	ES								
Initial D	epth to W	ater	feet	Meas	surement P	oint _	_	W	ell Diameter	
Final De	epth to Wa	ged	feet	Well	Depth	_	feet	W	ell Integrity:	
Screen I	Length	~	feet	Pum	p Intake De	epth	(Cap /	
Total Vo	olume Pur	ged	gall	ons PID	Well Head		111		Casing	
[purge volu	ame (milliliter	rs per minute) x	time duration	(minutes) x	0.00026 gal/m	illiliter]			Casing Locked Collar	
Volume of PURGE		ng – 2" diamet	er = 0.163 gall	ons per foot	of depth, 4" di	ameter = 0.65	3 gallons per fo	oot of depth	Collar	
TURGE	DATA									
	Depth to	Purge Rate	Temp.	pН	Dissolved	Turbidity	Cond.	ORP	WASI	
Time	Water (ft)	(ml/min)	(deg. C)	(units)	O2 (mg/L)	(NTU)	(mS/cm)	(mV)	Comments	
					3					
			/							
_										
-										
	Damas Oha			.A						
		ervations: _ er Containe		TI	1 i _/\					
1	uige wan	ei Comame	11Zeu	10	17					
EQUIPN	MENT DO	CUMENTA	TION							
		1	12/12							
Type of	Pump: HI	OPE bailer	MIT							
	Tubing:		/#	Longs						
Type of	Water Qua	ality Meter:	YSI ProD	SS			Calibra	ted:	Yes	
ANIAT X7	TICAL DA	DAMETEL) C			1.0	CATION N	ОТРО		
Paramete		RAMETEI umes	<u>Sample Co</u>	llected		LUC	CATION N	OTES		
VOCs	The second second	40 ml				+	D	4	<u></u>	
Metals		125 ml				: 			-	
	L A	120 1111								
						34				
				_	-	(i)			- 10	
Signatur	e:	m -				-				
Checked	Ву:				e	177				



Project 1	Name Cul	oa Landfill	Monitoring	/Inspection	<u>on</u>			Job	# <u>50191-01</u>
Location	ı ID	SW-2		Field	Sample ID	M	<u> </u>	Sar	mpling Event #
Activity	Time	SW-2 12:25		Samp	ole Time _	14	A	Da	te 9/14/23
SAMPL	ING NOTI	<u>ES</u>							
Initial D	epth to Wa	ater	feet	Meas	surement Po	oint	feet	We	ell Diameter
Final De	epth to Wa	ter	- feet	Well	Depth	N/A	feet	We	ell Integrity:
Screen I	Length	8	feet	Pum	p Intake De	pth	_		Cap
Total Vo	olume Purg	ged	– gall	ons PID	Well Head	<u> </u>			Casing
		rs per minute) x				_			Casing Locked Collar
		ng – 2" diamet	er = 0.163 gall	ons per foot	of depth, 4" di	ameter = 0.65	3 gallons per fo	ot of depth	Collar
PURGE	DATA								
	Depth to	Purge Rate	Temp.	pН	Dissolved	Turbidity	Cond.	ORP	
Time	Water (ft)	(ml/min)	(deg. C)	(units)	O2 (mg/L)	(NTU)	(mS/cm)	(mV)	Comments
2		V							
4		P			i.				
9					7				
è		-							
9									
-									
5									
T	Purge Obse	ervations:		NA		V	U d		
Ţ	Purge Wate	 ervations: _ er Containe	rized.	10/	A				
	uigo man	ci comunic	11200.	• /	<u> </u>				
EQUIPN	MENT DO	CUMENTA	TION						
			10						
Type of	Pump: HI	OPE bailer	NA						
	Tubing:		AM						
		ality Meter	: YSI ProD	SS			Calibra	ted:	Yes
Tom som	Christman - Sec.	anna 💆 anna ann ann a	7.1						
ANALY	TICAL PA	RAMETE	RS			LO	CATION N	OTES	
Paramet	752241 15	lumes	Sample Co	llected			Dru		
VOCs		40 ml	- -			43			
Metals		125 ml				1			
	10					\ -			
						30			
Signatur	re:					# 			
Checked	Bv:					N.			
	12 22 14 25 19								



Project 1	Name <u>Cul</u>	oa Landfill	<u>Monitoring</u>				2014	Job	# 50191-01				
Location	1 ID	Sw-	3	Field	l Sample ID ple Time _	Sw	-3_	_ San	Sampling Event # Date 9/15 23				
Activity	Time	Sw-	5	Samj	ple Time _	12	:20	Dat	e 9/15/23				
SAMPL	ING NOTI	<u>ES</u>											
Initial D	epth to Wa	ater ter ged	/ fee	Meas	surement Po	oint	_	We	ll Diameter				
Final De	epth to Wa	ter	fee	Well	Depth	>	fee	<u>t</u> We	ll Integrity:				
Screen I	Length	-	fee	<u>t</u> Pum	p Intake De	epth		_	Cap Casing Locked				
Total Vo	olume Purg	ged	gal	lons PID	Well Head		_	=	Casing				
[purge volu	ıme (milliliter	rs per minute) x	time duration	(minutes) x	0.00026 gal/m	illiliter]			Locked				
Volume of PURGE		ng – 2" diamet	er = 0.163 gall	lons per foot	of depth, 4" dia	ameter = 0.653	3 gallons per f	oot of depth	Collar				
	Depth to	Purge Rate	Temp.	pН	Dissolved	Turbidity	Cond.	ORP					
Time	Water (ft)	(ml/min)	(deg. C)	(units)	O2 (mg/L)	(NTU)	(mS/cm)	(mV)	Comments				
12:25			16.0	7.39	9.19	33.GI	0.156	163,3					
ŀ	Purge Obse	ervations: _	- Oe	as									
F	urge Wate	er Containe	rized:	N/#	<u> </u>								
EQUIPN	MENT DO	CUMENTA	TION										
		/	1. (h.										
		OPE bailer											
		HOPE		00			C 13		***				
Type of	Water Qua	ality Meter:	YSI ProD	88			Calibra	ated:	Yes				
ANALY	TICAL PA	RAMETEI	RS			LOC	CATION N	OTES					
Paramet			Sample Co	ollected									
VOCs		40 ml				-							
Metals	2 x	125 ml		~									
						2 <u></u>							
Signatur	re:				_								
Checked	l By:												



Project 1	Name <u>Cul</u>	oa Landfill	Monitoring	g/Inspecti	<u>on</u>			Jo	b # <u>50191-01</u>
		SW-0		Field	l Sample II)	W-4_	_ Sa	mpling Event #
Activity	Time	12:30		Sam	l Sample II ple Time _	12:	35	_ Da	mpling Event # ate _ 9/IS/23
41	ING NOT								
Initial D	epth to W	ater	- fee	t Mea	surement P Depth p Intake De Well Head	oint		W	ell Diameter
Final De	epth to Wa	ter	fee	t Well	Depth	-	fee	et W	
Screen I	Length	-	fee	t Pum	p Intake De	epth	/	_	ell Integrity: Cap
Total Vo	olume Pur	ged	/ gal	lons PID	Well Head		-		Casing
[purge volu	ıme (milliliter	s per minute):	x time duration	(minutes) x	0.00026 gal/m	illiliter]			Locked
Volume of PURGE		ng – 2" diame	ter = 0.163 gal	lons per foot	of depth, 4" di	ameter = 0.65	53 gallons per t	foot of depth	Collar
	Depth to	Purge Rate	Temp.	pН	Dissolved	Turbidity	Cond.	ORP	
Time	Water (ft)	(ml/min)	(deg. C)	(units)	O2 (mg/L)	(NTU)	(mS/cm)	(mV)	Comments
12:40			13.8	7.01	5.30	65.88	0.092	163.0	
-									
						·			
				Admir (3)	1				
		ervations: _			oudy u	vater			<u></u>
P	'urge Wate	er Containe	erized:	W/H					
EQUIPM	MENT DO	CUMENTA	TION						
		PE bailer	NA						
	Tubing:]		IA						
Type of	Water Qua	ality Meter	: YSI ProD	SS			Calibra	ated:	Yes
ANATS	TICAL DA	DAMETER	DC			1.0	CATIONS	OTES	
Paramete	December 1	RAMETE umes	Sample Co	allected		<u>10</u>	CATION N	OIES	
VOCs		40 ml	Sample Co	/ meeted		-			
Metals		125 ml		/	===				
		5050							
Signatur	e:					2,			
Checked	l By:					4			
	and by								



Project 1	Name Cub	a Landfill	Monitoring	/Inspectio	on			Job	# 50191-01
Location	1 ID 835	sy Jacky	son Hill to	Field	Sample ID	8354	Jackson	Hill Pd Sar	mpling Event #
Activity	Time	15:00		Samp	ole Time	15:05		Dat	# 50191-01 mpling Event # te _ 9/14/23
SAMPL	ING NOTI	ES							
T ''' 1 T	.1 . 337							***	11 D'
Initial D	epth to Wa	ater	feet	Meas	urement Po	oint		We	ell Diameter
Final De	epth to Wa	ter	feet feet gallo	Well	Depth		feet	We	Cap Casing Locked
Screen I	Length		feet	Pump	Intake De	epth			Cap
							<u> </u>	ri e	Casing
			time duration					V 2424 040	Locked
		ng – 2" diamet	er = 0.163 gallo	ons per foot	of depth, 4" dia	ameter = 0.653	gallons per fo	oot of depth	Collar
PURGE	DATA								
	Depth to	Purge Rate	Temp.	pН	Dissolved	Turbidity	Cond.	ORP	
Time	Water (ft)	(ml/min)	(deg. C)	(units)	O2 (mg/L)	(NTU)	(mS/cm)	(mV)	Comments
15:10			14.6	6.29	4.11	15.06	0.285	170,5	
1.). (-			11.0	10.71	500	13.00	.200	11002	
								-	
-						-			
-									
-									
ļ.,		Security of the security of the		RA (Resolution					
I	Purge Obse	ervations: _	C	ear					
I	Purge Wate	er Containe	rized:	AJU					***
COLUDA	TENTE DO	CITIS SERVICE A	TION						
EQUIPN	TENT DO	CUMENTA	TION						
т с	D 111	NDE Z II	1/10-						
		PE bailer	4)71						
	Tubing:		NOID DO	7.0			G 111	. 4	2224
Type of	Water Qua	ality Meter:	YSI ProDS	55			Calibra	ted:	Yes
	TICLE D					• ~ .			
		RAMETEI		115-180808-1		LOC	CATION N	<u>OTES</u>	
Paramet		umes	Sample Co	llected		1			
VOCs		40 ml				5 2			
Metals	2 x	125 ml				7			
						2			
						¥ <u></u>			
					_				



Project	Name C	uba Londa	11					Job# 50	191				
Locatio	n ID	NW-15+	10	Field	Sample ID	NIA		Sampling Event #					
		12:30			ple Time				07/23				
SAMPLII	NG NOTES												
Initial D	epth to W	ater	fee	t Mea	surement F	oint T	מר	We	ell Diameter2"				
		ter		Bart - 2 at 1 2 at 2	Depth				ell Integrity:				
					p Intake De				Cap				
		ged							Casing V				
		s per minute) x						-	Casing Locked				
		ng – 2" diamete					3 gallons per	foot of depth	Collar				
							25 N	Ā	S				
PURGE D	ΩΛΤΛ												
FORGE	Depth to	Purge Rate	Temp.	рН	Dissolved	Turbidity	Cond.						
Time	Water (ft)	(ml/min)	(deg. C)	(units)	02 (mg/L)	(NTU)	(mS/cm)	ORP (mV)	Comments				
				<u></u>									
		ervations: _											
F	Purge Wat	er Containe	rized:										
CHIDM	ENT DOCU	MENTATION											
Type of	Tuhing:												
		ality Meter:				Cali	hrated:						
. , p = 0.		ancy meters				Culli	bratea						
ANALYTI	CAL PARAM	METERS				LOC	ATION NOT	ΓES					
aramet	ter Vol	umes	Sample Co	llected		-			- 1D were dry.				
	(S)	ė!			18				nells did				
									of sediment				
					10				of the mills				
						<u> </u>							
						10 10 10 10 10 10 10 10 10 10 10 10 10 1							



Project	Name _ C	ubn Lande	Sit						Job#	50191				
		1W-10D		Field	Sample ID		V/A		Sampling Event #					
Activity	Time~	11:00			ole Time _					3/57/23				
Initial D Final De Screen I Total Vo (purge vol Volume of	epth to Wa Length Dlume Purg ume (milliliter Water in casi	sper minute) x	fee fee fee 35 gall time duration or = 0.163 gallo	t Well t Pum ons PID \ (minutes) x ons per foot	p Intake De Well Head 0.00026 gal/n	විප් epth nillilite	~ 9 _ ~ 9 er]	fee 50 Feet	_	Vell Diameter2" Vell Integrity: Cap V Casing V Locked V				
PURGE D	DATA													
	Depth to	Purge Rate	Temp.	рН	Dissolved		rbidity	Cond.	3 3 4					
Time	Water (ft)	(ml/min)	(deg. C)	(units)	O2 (mg/L)	1)	NTU)	(mS/cm)	ORP (mV)	Comments				
+15	63.56					ove	Zonge			Silty				
+30	63.56						1							
+ 45	63.59													
+ 60	63.64													
+ 75	63.69	-												
+90	63.77	_												
+ 105	63.81	-												
+ 120	63.88													
+135	63,92													
+ 150	63.94	. a-				4	/			↓				
EQUIPM Type of Type of Type of	Purge Wate ENT DOCUI Pump: <u> </u>		rized: N	brbiding n			<u>100</u>	ATION NO	dues not brildup	indicate a of sediment				
							8							



Project Name Cuba Landall							Job #S	ob#_SD(9)				
Location	nID <u>M</u>	IW-12		Field	Sample ID	N/A		Sampling Event #				
Activity	Time~	9:30		Samı	ole Time _	N/A N/A		Date _ ೭೬	5/07/23			
Initial De Final De Screen L Total Vo [purge volu Volume of	pth to Wa ength olume Purg ume (milliliter Water in casi	ater 31 ter 41. ged ~ 9 s per minute) x ng - 2" diamete ~ 9	feet feet gallotime duration er = 0.163 gallo	Mea: Well Pum ons PID V (minutes) x	surement F Depth p Intake De Well Head _ 0.00026 gal/n	Point	Fee /A	_ W	/ell Diameter			
PURGE D	ATA											
Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments			
31.90	+ 10		(8/	(over	(1110) (111)	1 01 (1.1.1)	Silty			
35.27						Ronge			1			
	+ 30					over 2						
41.70	+ 40					over Parge Over Parge			1			
EQUIPM Type of Type of Type of	Purge Wat ENT DOCUI Pump: F Tubing:^ Water Quant		rized: N	Lobility	mte	LOC	ATION NO	TES dues	not indicate			
									at the bottom			
						10						



Project Location	Name <u>C</u>	ibn Londa 1w-13	ι(Field	Sample ID	N/A		The second secon	50191 Event #
		10:15		Samp	ole Time _	N/A N/A			3/07/23
SAMPLIN	IG NOTES								
Final De Screen L Total Vo (purge volu Volume of	pth to Warength lume Purgume (milliliter: Water in casin	ter 28. ter 31. ged ~ s per minute) x ng - 2" diamete	feet feet feet gallotime duration er = 0.163 gallo	Well Pumpons PID V (minutes) x ons per foot	Depth p Intake Do Vell Head 0.00026 gal/n	epth^	fee //A	<u>t</u> W 	/ell Diameter2"/ell Integrity: Cap/ Casing/ Locked/ Collar/
PORGEL	Depth to	Purge Rate	Temp.	рН	Dissolved	Turbidity	Cond.		
Time	Water (ft)	(ml/min)	(deg. C)	(units)	O2 (mg/L)	(NTU)	(mS/cm)	ORP (mV)	Comments
+10	28,07				_	Ponge			Silty
+ 20	31.82					ives			V
		ervations: _ er Containe		or biel 10					
Type of Type of Type of	Pump:H Tubing: <u>f</u> Water Qua		hr.	Lirbidih		LOC _ \b.	ATION NO	TES t dry at spection	fter ~ I gallon does not indicate t at the bottom
						0 			

From: Greg Andrus

Sent: Tuesday, August 22, 2023 2:12 PM

To: Monnin, Taylor J (DEC); villageofcuba@gmail.com; jbarnesmayorvocuba@gmail.com
Caprio, Andrea (DEC); Bethoney, Charlotte M (HEALTH); Kulow, Kristin (HEALTH);

Benjamin Seifert

Subject: RE: Cuba Municipal Waste Disposal (902012) - PRR Response Letter

Attachments: Lu Engineers Cuba Well Purging Logs August 2023.PDF

Hello,

This email is intended to provide a quick update on recent sediment evaluation and well redevelopment efforts at the subject Site. We mobilized on 8/7, but could not complete Site work until 8/8 due to severe weather. As indicated in the attached logs, MW-1S, MW-1D, MW-10D, MW-12 and MW-13 were evaluated for the presence of sediment and excessive turbidity using a Waterra, Inc. Hydrolift® purging system.

MW-1S and MW-1D were found to be free of sediment, but dry. Likewise, MW-13 was not observed to contain sediment and was pumped dry after only one (1) gallon of highly turbid purge water was removed.

Water was successfully removed from MW-10D (approximately 35 gallons) and MW-12 (approximately 9 gallons). The high turbidity of water removed from these wells did not improve during the pumping process. No sediment was detected in either MW-10D or MW-12 during this process.

Based on these results, turbidity appears to be related to Site groundwater conditions rather than sediment buildup in the subject wells. It is recommended that water from the subject wells be filtered in the field during the next sampling round using a 0.45 micron filter to removed excess suspended solids to more accurately represent dissolved-phase metals concentrations in these locations.

Please let us know if you have any questions or concerns relative to our findings here.

We plan to sample the target Site wells and surface water during the month of September and will notify your office a minimum of seven (7) days prior to mobilization.

Thank you,

Greg

Gregory L Andrus, P.G.

Group Leader, Investigation/Remediation

Office (direct): 585.434.2414

Cell: 585.732.5786

280 East Broad Street, Suite 170

Rochester, NY 14604 luengineers.com

D/MBE Certified - Veteran-Owned Small Business



From: Benjamin Seifert <bseifert@luengineers.com>

Sent: Friday, August 4, 2023 12:13 PM

To: Monnin, Taylor J (DEC) <Taylor.Monnin@dec.ny.gov>; villageofcuba@gmail.com; jbarnesmayorvocuba@gmail.com

Cc: Caprio, Andrea (DEC) <Andrea.Caprio@dec.ny.gov>; Bethoney, Charlotte M (HEALTH)

<charlotte.bethoney@health.ny.gov>; Kulow, Kristin (HEALTH) <kristin.kulow@health.ny.gov>; Greg Andrus

<gregandrus@luengineers.com>

Subject: RE: Cuba Municipal Waste Disposal (902012) - PRR Response Letter

Good afternoon,

We are planning to redevelop the wells on Monday and Tuesday of next week; we should be on site by 9:30 am. Please let us know if you have any questions or concerns with the schedule.

Enjoy the weekend.

Thank you, Ben

Ben Seifert

Geologist - GIS Specialist

Office: 585.385.7417 Fax: 585.546.1634 Mobile: 716.225.1493

280 East Broad Street, Suite 170

Rochester, NY 14604 luengineers.com



 Partnering with clients and communities to provide enduring solutions -

From: Greg Andrus < gregandrus@luengineers.com>

Sent: Wednesday, August 2, 2023 5:07 PM

To: Monnin, Taylor J (DEC) < raylor.Monnin@dec.ny.gov; villageofcuba@gmail.com; jbarnesmayorvocuba@gmail.com; <a href="mailto:jbarnesmayorvocuba@gmailto:jbarnesmayorvocuba@gmailto:jbarnesmayorvocuba@gmailto:jbarnesmayorvocuba@gmailto:jbarnesmayorvocuba@gmailto:jbarnesmayorvocuba@gmailto:jbarnesmayorvocuba@gmailto:jbarnesmayorvocuba@gmailto:jbarnesmayorvocuba@gmailto:jbarnesmayorvocuba@gmailto:jbarnesmayorvocuba@gmailto:jbarnesmayorvocuba.com; mailto:jbarnesmayorvocuba@gmailto:jbarnesmayorvocuba.com</

Cc: Caprio, Andrea (DEC) < Andrea. Caprio@dec.ny.gov >; Bethoney, Charlotte M (HEALTH)

 $<\!\!\underline{\text{charlotte.bethoney@health.ny.gov}}\!\!>\!; \text{Kulow, Kristin (HEALTH)} <\!\!\underline{\text{kristin.kulow@health.ny.gov}}\!\!>\!; \text{Benjamin Seifert}$

bseifert@luengineers.com>

Subject: RE: Cuba Municipal Waste Disposal (902012) - PRR Response Letter

Hello,

We are planning on getting out to the site within the next two to three weeks and will follow up with date when we have it firmed up.

Thank you,

Greg

Gregory L Andrus, P.G.

Group Leader, Investigation/Remediation

Office (direct): 585.434.2414

Cell: 585.732.5786

280 East Broad Street, Suite 170

Rochester, NY 14604 luengineers.com

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From: Monnin, Taylor J (DEC) <Taylor.Monnin@dec.ny.gov>

Sent: Tuesday, July 11, 2023 3:55 PM

To: Greg Andrus <gregandrus@luengineers.com>; villageofcuba@gmail.com; jbarnesmayorvocuba@gmail.com

Cc: Caprio, Andrea (DEC) < Andrea. Caprio@dec.ny.gov >; Bethoney, Charlotte M (HEALTH)

<charlotte.bethoney@health.ny.gov>; Kulow, Kristin (HEALTH) <kristin.kulow@health.ny.gov>; Benjamin Seifert

<bseifert@luengineers.com>

Subject: RE: Cuba Municipal Waste Disposal (902012) - PRR Response Letter

Good Afternoon Greg,

The Department and the NYSDOH have reviewed your approach to develop MW-1D, MW-10D, MW-12, and MW-13 at the Cuba Municipal Waste Disposal (902012). The Department requests monitoring well MW-1S to also be developed due to the turbidity levels during the last groundwater sampling event.

Feel free to reach out with any questions.

Thank you, Taylor

Taylor J. Monnin

she/her/hers

Assistant Engineer (Environmental), Division of Environmental Remediation

New York State Department of Environmental Conservation

700 Delaware Avenue, Buffalo, NY 14209

P: (716) 851-7220 | F: (716) 851-7226 | taylor.monnin@dec.ny.gov

www.dec.ny.gov | 🖬 | 💟 | 📵









From: Greg Andrus < gregandrus@luengineers.com >

Sent: Monday, June 12, 2023 2:14 PM

To: Monnin, Taylor J (DEC) <Taylor.Monnin@dec.ny.gov>; villageofcuba@gmail.com; jbarnesmayorvocuba@gmail.com

Cc: Caprio, Andrea (DEC) < Andrea. Caprio@dec.ny.gov >; Bethoney, Charlotte M (HEALTH)

<charlotte.bethoney@health.ny.gov>; Kulow, Kristin (HEALTH) <kristin.kulow@health.ny.gov>; Benjamin Seifert

<bseifert@luengineers.com>

Subject: RE: Cuba Municipal Waste Disposal (902012) - PRR Response Letter

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Hello,

After reviewing the issue, it is our opinion that the most efficient approach to evaluating sediment in the wells is to attempt to remove it by Waterra Hydrolift® system and/or bailing with heavy PVC bailers. All appropriate QA/QC and decontamination protocols will be followed. Water will be discharged to the ground surface as is done during sampling/purging. Findings will be recorded and submitted as a brief memorandum.

We will plan to develop MW-1D, MW-10D, MW-12 and MW-13 (see attached plan for reference). We will need to do this at least a week before sampling the wells to allow stabilization. We are looking at the 3rd week of August, on or about 8/21. We will confirm the date as this gets closer.

Please let us know if you have and questions or concerns and advise as to whether you approve the approach proposed here at your earliest convenience.

Thank you,

Greg

Gregory L Andrus, P.G.

Group Leader, Investigation/Remediation

Office (direct): 585.434.2414

Cell: 585.732.5786

280 East Broad Street, Suite 170

Rochester, NY 14604 *luengineers.com*

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From: Monnin, Taylor J (DEC) <Taylor.Monnin@dec.ny.gov>

Sent: Tuesday, May 30, 2023 10:11 AM

To: Greg Andrus <gregandrus@luengineers.com>; villageofcuba@gmail.com; jbarnesmayorvocuba@gmail.com

Cc: Caprio, Andrea (DEC) < <u>Andrea.Caprio@dec.ny.gov</u>>; Bethoney, Charlotte M (HEALTH) < <u>charlotte.bethoney@health.ny.gov</u>>; Kulow, Kristin (HEALTH) < <u>kristin.kulow@health.ny.gov</u>>

Subject: RE: Cuba Municipal Waste Disposal (902012) - PRR Response Letter

Good Morning Greg,

An extension of the 60-day time frame is acceptable. Please let me know the scheduled date for the site visit in early/mid-August.

Thanks,

Taylor

Taylor J. Monnin

she/her/hers

Assistant Engineer (Environmental), Division of Environmental Remediation

New York State Department of Environmental Conservation

700 Delaware Avenue, Buffalo, NY 14209

P: (716) 851-7220 | F: (716) 851-7226 | taylor.monnin@dec.ny.gov

www.dec.ny.gov | 🖬 | 💟 | 🞯









From: Greg Andrus < gregandrus@luengineers.com>

Sent: Friday, May 26, 2023 2:28 PM

To: Monnin, Taylor J (DEC) <Taylor.Monnin@dec.ny.gov>; villageofcuba@gmail.com; jbarnesmayorvocuba@gmail.com

Cc: Caprio, Andrea (DEC) < Andrea. Caprio@dec.ny.gov >; Bethoney, Charlotte M (HEALTH) <charlotte.bethoney@health.ny.gov>; Kulow, Kristin (HEALTH) <kristin.kulow@health.ny.gov>

Subject: RE: Cuba Municipal Waste Disposal (902012) - PRR Response Letter

unexpected emails.

Hello Ms. Monnin,

As discussed, we are requesting a limited extension of the 60-day time frame requested in your email below. We intend to visit the Site in early/mid-August and will follow up as soon as we have a specific date scheduled. Please verify whether an extension of the requested 60-day response time will be possible at your earliest convenience.

Thank you,

Greg

Gregory L Andrus, P.G.

Group Leader, Investigation/Remediation

Office (direct): 585.434.2414

Cell: 585.732.5786

280 East Broad Street, Suite 170

Rochester, NY 14604 luengineers.com

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- Partnering with clients and communities to provide enduring solutions -

From: Monnin, Taylor J (DEC) <Taylor.Monnin@dec.ny.gov>

Sent: Friday, May 19, 2023 1:32 PM

To: villageofcuba@gmail.com; jbarnesmayorvocuba@gmail.com

Cc: Caprio, Andrea (DEC) < Andrea. Caprio@dec.ny.gov >; Bethoney, Charlotte M (HEALTH)

<<u>charlotte.bethoney@health.ny.gov</u>>; Kulow, Kristin (HEALTH) <<u>kristin.kulow@health.ny.gov</u>>; Greg Andrus

<gregandrus@luengineers.com>

Subject: Cuba Municipal Waste Disposal (902012) - PRR Response Letter

Good Afternoon Mayor Barnes,

Please see attached the PRR response letter for the Cuba Municipal Waste Disposal site (902012). As noted within the letter, please submit the results of the assessment regarding the amount of sediment in onsite wells within 60 days to the Department. The Department will then determine if redevelopment and/or filtration of groundwater samples is warranted during the next groundwater sampling event.

Please note a hard copy will not follow in the mail. Feel free to reach out with any questions.

Sincerely,

Taylor J. Monnin

she/her/hers

Assistant Engineer (Environmental), Division of Environmental Remediation

New York State Department of Environmental Conservation

700 Delaware Avenue, Buffalo, NY 14209

P: (716) 851-7220 | F: (716) 851-7226 | <u>taylor.monnin@dec.ny.gov</u>

www.dec.ny.gov | 🚮 | 💟 | 🧑









Appendix B

Photo Pages





Photo No. 1 Access Road looking east.

Photo No. 2 Access Road looking west.





Photo No. 3 View of the Site looking north.

Photo No. 4 View of MW-1S.







Photo No. 5 View of exposed geotextile by the access road to MW-04.

Photo No. 6 View of SW-1.





Photo No. 7 Access Road to MW-4.

Photo No. 8 Access Road looking west from MW-04.



Appendix C

Laboratory Analytical Report



Service Request No:R2308533

Ben Seifert LU Engineers 280 East Broad Strret Rochester, NY 14604

Laboratory Results for: Cuba LF

Dear Ben,

Enclosed are the results of the sample(s) submitted to our laboratory September 15, 2023 For your reference, these analyses have been assigned our service request number **R2308533**.

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger Project Manager

Jamankstor.

CC: Greg Andrus



Narrative Documents

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com



Client:LU EngineersService Request: R2308533Project:Cuba LFDate Received: 09/15/2023

Sample Matrix: Water

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Twelve water samples were received for analysis at ALS Environmental on 09/15/2023. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

One or more samples were subcontracted to another laboratory for testing. The certified analytical report from the subcontractor has been included in its entirety at the end of this report and includes the name and address of the subcontracted laboratory.

Semivolatiles by GC/MS:

No significant anomalies were noted with this analysis.

Metals:

Method 7470A, 09/20/2023: The Method Blank contained a low level of Mercury at concentrations above the Method Reporting Limit (MRL). Since there were no detections of the analyte(s) in the associated field samples, the data quality was not significantly affected and no further corrective action was taken.

Subcontracted Analytical Parameters:

No significant anomalies were noted with this analysis.

Volatiles by GC/MS:

Method 8260C, 09/27/2023: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

	Jan arouge		
Approved by		Date	10/05/2023

Claria W took



Sample Receipt Information

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com Service Request:R2308533

LU Engineers Project: Cuba LF/50191-01

Client:

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	<u>DATE</u>	<u>TIME</u>
R2308533-001	MW-04	9/14/2023	0955
R2308533-002	MW-11	9/14/2023	0925
R2308533-003	MW-08	9/14/2023	1115
R2308533-004	MW-13	9/14/2023	1025
R2308533-005	MW-10D	9/14/2023	1425
R2308533-006	8354 Jackson Hill Rd	9/14/2023	1505
R2308533-007	MW-1S	9/15/2023	0955
R2308533-008	MW-07	9/15/2023	1115
R2308533-009	MW-12	9/15/2023	1205
R2308533-010	SW-03	9/15/2023	1220
R2308533-011	SW-4	9/15/2023	1235
R2308533-012	Trip Blank	9/14/2023	

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Cooler Receipt and Preservation Check Form



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10. II. 11. II. 12. II. 13. III. 14. / pH ≥12 ≤2 ≤2 <4 5-9 Residual Chlorine	Oid all bottle la Were correct of Were 5035 via Were dissolved Air Samples: C Lot of test paper	abels and tags ago ontainers used fo ls acceptable (no I metals filtered in Cassettes / Tubes Reagent NaOH HNO3 H2SO4 NaHSO4 For 608pest For CN, Phenol, 625, 608pest, 522 Na ₂ S ₂ O ₃	ree with r the tex extra la n the fic Intact Y Preser Yes	n custo sts ind abels, eld? Y/N	with MS Y Lot Reco No=Notifi If +, conta Na ₂ S ₂ O ₃ (y Canicived Type Type Type Type Type Type Type Type	sters Pre	YES NO YES NO YES NO YES NO YES NO Sessurized Sample II Adjusted **VOAs an Otherwise, 1	N/A N/A Tedlar® D Vol. Adde	Lot A	dded	pH						
10. II. 12. II. 13. III. 14. / pH ≥12 ≤2 ≤2 <4 5-9 Residual Chlorine (-)	Did all bottle la Were correct of Were 5035 via Were dissolved Air Samples: O Lot of test paper	abels and tags agrontainers used for ls acceptable (no metals filtered in Cassettes / Tubes Reagent NaOH HNO3 H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625, 608pest, 522 Na ₂ S ₂ O ₃ ZnAcetate HCI	ree with reference wi	n custo sts ind abels, eld? Y / N ved? No	ody papers' licated? not leaking with MS Y Lot Reco No=Notifi If +, conta Na ₂ S ₂ O ₃ (CN), asco	y /N Canicived 27/2 Ty for 3day 10tt PM to add 1625, 608, rbic (phenol).	sters Pre Exp	YES NO YES NO YES NO YES NO YES NO Sessurized Sample II Adjusted **VOAs an Otherwise, are checked	N/A N/A Tedlar® D Vol. Adde	Lot A d et ested before a samples with sentatives).	dded	pH						
10. II. 12. II. 13. III. 14. / pH ≥12 ≤2 ≤2 <4 5-9 Residual Chlorine (-)	Did all bottle la Were correct of Were 5035 via Were dissolved Air Samples: (Lot of test paper 226722	abels and tags agrontainers used for ls acceptable (no metals filtered in assettes / Tubes Reagent NaOH HNO3 H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625, 608pest, 522 Na ₂ S ₂ O ₃ ZnAcetate HCl	ree with the ter extra land the find Intact \ Yes	n custo sts ind abels, eld? Y / N ved? No	ody papers' licated? not leaking with MS Y Lot Reco No=Notifi If +, conta Na ₂ S ₂ O ₃ (CN), asco	y /N Canicived 27/2 Ty for 3day 10tt PM to add 1625, 608, rbic (phenol).	sters Pre Exp	YES NO YES NO YES NO YES NO YES NO Sessurized Sample II Adjusted **VOAs an Otherwise, are checked	N/A N/A Tedlar® D Vol. Adde	Lot A d et ested before a samples with sentatives).	dded	pH						
10. II. 12. II. 13. III. 14. / pH ≥12 ≤2 ≤2 <4 5-9 Residual Chlorine (-)	Did all bottle la Were correct of Were 5035 via Were dissolved Air Samples: O Lot of test paper 22472 2 numbers: O7	abels and tags ago ontainers used fo ls acceptable (no metals filtered in Cassettes / Tubes Reagent NaOH HNO3 H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625, 608pest, 522 Na ₂ S ₂ O ₃ ZnAcetate HCl	ree with the test extra land the find t	r custo sts ind abels, eld? Y / N ved? No	not leaking with MS Y Lot Reco No=Notif If +, conta Na ₂ S ₂ O ₃ (CN), asco	y for 3day set PM to add 625, 608, rbic (phenol).	sters Pre Exp	YES NO YES NO YES NO YES NO YES NO Sessurized Sample II Adjusted **VOAs an Otherwise, are checked	N/A N/A Tedlar® D Vol. Adde	Lot A d et ested before a samples with sentatives).	dded	pH						
10. II. 12. II. 13. III. 14. / pH ≥12 ≤2 ≤2 <4 5-9 Residual Chlorine (-)	Did all bottle la Were correct of Were 5035 via Were dissolved Air Samples: O Lot of test paper 22472 2 numbers: O7	abels and tags agrontainers used for ls acceptable (no metals filtered in assettes / Tubes Reagent NaOH HNO3 H ₂ SO ₄ NaHSO ₄ For 608pest For CN, Phenol, 625, 608pest, 522 Na ₂ S ₂ O ₃ ZnAcetate HCl	ree with the test extra land the find t	r custo sts ind abels, eld? Y / N ved? No	not leaking with MS Y Lot Reco No=Notif If +, conta Na ₂ S ₂ O ₃ (CN), asco	y for 3day set PM to add 625, 608, rbic (phenol).	sters Pre Exp	YES NO YES NO YES NO YES NO YES NO Sessurized Sample II Adjusted **VOAs an Otherwise, are checked	N/A N/A Tedlar® D Vol. Adde	Lot A d et ested before a samples with sentatives).	dded	pH						

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: ROA PC Secondary Review: WWW DUD3

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*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

01/23/2023



Miscellaneous Forms

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com



REPORT QUALIFIERS AND DEFINITIONS

- U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
- J Estimated value due to either being a
 Tentatively Identified Compound (TIC) or
 that the concentration is between the MRL
 and the MDL. Concentrations are not verified
 within the linear range of the calibration. For
 DoD: concentration >40% difference between
 two GC columns (pesticides/Arclors).
- B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
- E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
- E Organics- Concentration has exceeded the calibration range for that specific analysis.
- D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
- * Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
- H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
- # Spike was diluted out.

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- + Correlation coefficient for MSA is <0.995.
- N Inorganics- Matrix spike recovery was outside laboratory limits.
- N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
- S Concentration has been determined using Method of Standard Additions (MSA).
- W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
- P Concentration >40% difference between the two GC columns.
- C Confirmed by GC/MS
- Q DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).
- X See Case Narrative for discussion.
- MRL Method Reporting Limit. Also known as:
- LOQ Limit of Quantitation (LOQ)

 The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
- MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
- LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.
- ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Accreditations1



NELAP States
Florida ID # E87674
New Hampshire ID # 2941
New York ID # 10145
Pennsylvania ID# 68-786
Virginia #460167

Non-NELAP States
Connecticut ID #PH0556
Delaware Approved
Maine ID #NY01587
North Carolina #36701
North Carolina #676
Rhode Island LAO00333

¹ Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory. To verify NH accredited analytes, go to https://www4.des.state.nh.us/CertifiedLabs/Certified-Method.aspx.

ALS Laboratory Group

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a

substance allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but

greater than or equal to the MDL.

Analyst Summary report

Client: LU Engineers

Project: Cuba LF/50191-01

Service Request: R2308533

Sample Name: MW-04

Lab Code: R2308533-001

Sample Matrix: Water

Date Collected: 09/14/23

Date Received: 09/15/23

Analysis Method

6010C 7470A 8260C Extracted/Digested By CDISTEFANO ECASTROVINCI Analyzed By

NMANSEN

ECASTROVINCI

FNAEGLER

Sample Name: MW-11

Lab Code: R2308533-002

Sample Matrix: Water

Date Collected: 09/14/23 **Date Received:** 09/15/23

Analysis Method

6010C 7470A 8260C 8270D SIM Extracted/Digested By
CDISTEFANO
ECASTROVINCI

Analyzed By
NMANSEN
ECASTROVINCI
FNAEGLER

JVANHEYNINGEN

MMCMAHON

Sample Name: MW-08

Lab Code: R2308533-003

Sample Matrix: Water

Date Collected: 09/14/23 **Date Received:** 09/15/23

Analysis Method

6010C 7470A 8260C Extracted/Digested By

CDISTEFANO ECASTROVINCI Analyzed By NMANSEN ECASTROVINCI

FNAEGLER

Sample Name: MW-13

Lab Code: R2308533-004

Sample Matrix: Water

Date Collected: 09/14/23 **Date Received:** 09/15/23

Analysis Method

6010C 7470A 8260C Extracted/Digested By

CDISTEFANO ECASTROVINCI Analyzed By

NMANSEN ECASTROVINCI

FNAEGLER

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Analyst Summary report

Client: LU Engineers

Project: Cuba LF/50191-01

Service Request: R2308533

Sample Name: MW-10D

Lab Code: R2308533-005

Sample Matrix: Water

Date Collected: 09/14/23 **Date Received:** 09/15/23

Date Received: 09/13/23

Analysis Method

6010C 7470A 8260C Extracted/Digested By
CDISTEFANO

ECASTROVINCI

Analyzed By

NMANSEN ECASTROVINCI

FNAEGLER

Sample Name: 8354 Jackson Hill Rd

Lab Code: R2308533-006 **Sample Matrix:** Water **Date Collected:** 09/14/23 **Date Received:** 09/15/23

Analysis Method

6010C 7470A 8260C Extracted/Digested By

CDISTEFANO ECASTROVINCI Analyzed By

NMANSEN ECASTROVINCI

FNAEGLER

Sample Name: MW-1S

Lab Code: R2308533-007

Sample Matrix: Water

Date Collected: 09/15/23

Date Received: 09/15/23

Analysis Method

6010C 7470A 8260C **Extracted/Digested By**

CDISTEFANO ECASTROVINCI Analyzed By

NMANSEN

ECASTROVINCI

FNAEGLER

Sample Name: MW-07

Lab Code: R2308533-008

Sample Matrix: Water

Date Collected: 09/15/23 **Date Received:** 09/15/23

Analysis Method

6010C 7470A 8260C Extracted/Digested By

CDISTEFANO ECASTROVINCI **Analyzed By**

NMANSEN ECASTROVINCI

FNAEGLER

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Analyst Summary report

Client: LU Engineers

Project: Cuba LF/50191-01

Service Request: R2308533

Sample Name: MW-12

Lab Code: R2308533-009

Sample Matrix: Water

Date Collected: 09/15/23

Date Received: 09/15/23

Analysis Method

6010C 7470A 8260C

Water

Extracted/Digested By Analyzed By

CDISTEFANO NMANSEN ECASTROVINCI ECASTROVINCI

FNAEGLER

Sample Name: SW-03

Lab Code: R2308533-010

Date Collected: 09/15/23 **Date Received:** 09/15/23

Analysis Method

Sample Matrix:

6010C 7470A 8260C Extracted/Digested By

CDISTEFANO ECASTROVINCI **Analyzed By**

NMANSEN ECASTROVINCI FNAEGLER

Sample Name: SW-4

Lab Code: R2308533-011

Sample Matrix: Water

Date Collected: 09/15/23

Date Received: 09/15/23

Analysis Method

6010C 7470A 8260C Extracted/Digested By

CDISTEFANO ECASTROVINCI **Analyzed By**

NMANSEN ECASTROVII

ECASTROVINCI

FNAEGLER

Sample Name: Trip Blank
Lab Code: R2308533-012

Sample Matrix: Water

Date Collected: 09/14/23 **Date Received:** 09/15/23

Analysis Method

8260C

Extracted/Digested By

Analyzed By FNAEGLER

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INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method			
6010C	3050B			
6020A	3050B			
6010C TCLP (1311)	3005A/3010A			
extract				
6010 SPLP (1312) extract	3005A/3010A			
7199	3060A			
300.0 Anions/ 350.1/	DI extraction			
353.2/ SM 2320B/ SM				
5210B/ 9056A Anions				
For analytical methods not listed, the preparation method is the same as the analytical method reference.				



Sample Results

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com



Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com

Analytical Report

Client: LU Engineers Service Request: R2308533

 Project:
 Cuba LF/50191-01
 Date Collected:
 09/14/23 09:55

 Sample Matrix:
 Water
 Date Received:
 09/15/23 15:35

Sample Name: MW-04 Units: ug/L

Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C **Prep Method:** EPA 5030C

R2308533-001

Lab Code:

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	19	1.0	0.20	1	09/27/23 01:23	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	09/27/23 01:23	
1,1,2-Trichloroethane	0.22 J	1.0	0.20	1	09/27/23 01:23	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	09/27/23 01:23	
1,1-Dichloroethane (1,1-DCA)	63	1.0	0.20	1	09/27/23 01:23	
1,1-Dichloroethene (1,1-DCE)	5.6	1.0	0.20	1	09/27/23 01:23	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	09/27/23 01:23	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	09/27/23 01:23	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	09/27/23 01:23	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	09/27/23 01:23	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 01:23	
1,2-Dichloroethane	0.37 J	1.0	0.20	1	09/27/23 01:23	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	09/27/23 01:23	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 01:23	
1,4-Dichlorobenzene	0.26 J	1.0	0.20	1	09/27/23 01:23	
1,4-Dioxane	23 J	40	13	1	09/27/23 01:23	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	09/27/23 01:23	
2-Hexanone	5.0 U	5.0	0.20	1	09/27/23 01:23	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	09/27/23 01:23	
Acetone	5.0 U	5.0	5.0	1	09/27/23 01:23	
Benzene	1.0 U	1.0	0.20	1	09/27/23 01:23	
Bromochloromethane	1.0 U	1.0	0.20	1	09/27/23 01:23	
Bromodichloromethane	1.0 U	1.0	0.20	1	09/27/23 01:23	
Bromoform	1.0 U	1.0	0.25	1	09/27/23 01:23	
Bromomethane	1.0 U	1.0	0.70	1	09/27/23 01:23	
Carbon Disulfide	1.0 U	1.0	0.42	1	09/27/23 01:23	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	09/27/23 01:23	
Chlorobenzene	1.0 U	1.0	0.20	1	09/27/23 01:23	
Chloroethane	1.1	1.0	0.23	1	09/27/23 01:23	
Chloroform	1.0 U	1.0	0.51	1	09/27/23 01:23	
Chloromethane	1.0 U	1.0	0.80	1	09/27/23 01:23	
Cyclohexane	1.0 U	1.0	0.60	1	09/27/23 01:23	
Dibromochloromethane	1.0 U	1.0	0.20	1	09/27/23 01:23	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	09/27/23 01:23	
Dichloromethane (CFC 12)	1.0 U	1.0	0.65	1	09/27/23 01:23	
Ethylbenzene Ethylbenzene	1.0 U	1.0	0.20	1	09/27/23 01:23	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	09/27/23 01:23	
Methyl Acetate	2.0 U	2.0	0.87	1	09/27/23 01:23	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	09/27/23 01:23	
Methylcyclohexane	1.0 U	1.0	0.20	1	09/27/23 01:23	
Styrene	1.0 U	1.0	0.20	1	09/27/23 01:23	
Tetrachloroethene (PCE)	0.33 J	1.0	0.20	1	09/27/23 01:23	
Toluene	1.0 U	1.0	0.21	1	09/27/23 01:23	
TOTUCHE	1.0 0	1.0	0.20	1	U7/41/43 U1.43	

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Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/14/23 09:55

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 MW-04
 Units: ug/L

 Lab Code:
 R2308533-001
 Basis: NA

Volatile Organic Compounds by GC/MS

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	3.5	1.0	0.20	1	09/27/23 01:23	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	09/27/23 01:23	
Vinyl Chloride	2.4	1.0	0.20	1	09/27/23 01:23	
cis-1,2-Dichloroethene	30	1.0	0.23	1	09/27/23 01:23	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	09/27/23 01:23	
m,p-Xylenes	2.0 U	2.0	0.20	1	09/27/23 01:23	
o-Xylene	1.0 U	1.0	0.20	1	09/27/23 01:23	
trans-1,2-Dichloroethene	0.26 J	1.0	0.20	1	09/27/23 01:23	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	09/27/23 01:23	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	85 - 122	09/27/23 01:23	
Dibromofluoromethane	95	80 - 116	09/27/23 01:23	
Toluene-d8	97	87 - 121	09/27/23 01:23	

Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/14/23 09:25

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 MW-11
 Units: ug/L

 Lab Code:
 R2308533-002
 Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C **Prep Method:** EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	2.4	1.0	0.20	1	09/27/23 01:46	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	09/27/23 01:46	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	09/27/23 01:46	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	09/27/23 01:46	
1,1-Dichloroethane (1,1-DCA)	14	1.0	0.20	1	09/27/23 01:46	
1,1-Dichloroethene (1,1-DCE)	0.83 J	1.0	0.20	1	09/27/23 01:46	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	09/27/23 01:46	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	09/27/23 01:46	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	09/27/23 01:46	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	09/27/23 01:46	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 01:46	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	09/27/23 01:46	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	09/27/23 01:46	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 01:46	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 01:46	
1,4-Dioxane	40 U	40	13	1	09/27/23 01:46	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	09/27/23 01:46	
2-Hexanone	5.0 U	5.0	0.20	1	09/27/23 01:46	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	09/27/23 01:46	
Acetone	5.0 U	5.0	5.0	1	09/27/23 01:46	
Benzene	1.0 U	1.0	0.20	1	09/27/23 01:46	
Bromochloromethane	1.0 U	1.0	0.20	1	09/27/23 01:46	
Bromodichloromethane	1.0 U	1.0	0.20	1	09/27/23 01:46	
Bromoform	1.0 U	1.0	0.25	1	09/27/23 01:46	
Bromomethane	1.0 U	1.0	0.70	1	09/27/23 01:46	
Carbon Disulfide	1.0 U	1.0	0.42	1	09/27/23 01:46	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	09/27/23 01:46	
Chlorobenzene	1.0 U	1.0	0.20	1	09/27/23 01:46	
Chloroethane	0.36 J	1.0	0.23	1	09/27/23 01:46	
Chloroform	1.0 U	1.0	0.51	1	09/27/23 01:46	
Chloromethane	1.0 U	1.0	0.80	1	09/27/23 01:46	
Cyclohexane	1.0 U	1.0	0.60	1	09/27/23 01:46	
Dibromochloromethane	1.0 U	1.0	0.20	1	09/27/23 01:46	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	09/27/23 01:46	
Dichloromethane	1.0 U	1.0	0.65	1	09/27/23 01:46	
Ethylbenzene	1.0 U	1.0	0.20	1	09/27/23 01:46	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	09/27/23 01:46	
Methyl Acetate	2.0 U	2.0	0.87	1	09/27/23 01:46	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	09/27/23 01:46	
Methylcyclohexane	1.0 U	1.0	0.20	1	09/27/23 01:46	
Styrene	1.0 U	1.0	0.20	1	09/27/23 01:46	
Tetrachloroethene (PCE)	0.80 J	1.0	0.21	1	09/27/23 01:46	
Toluene	1.0 U	1.0	0.20	1	09/27/23 01:46	

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Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/14/23 09:25

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 MW-11
 Units: ug/L

 Lab Code:
 R2308533-002
 Basis: NA

Volatile Organic Compounds by GC/MS

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	2.0	1.0	0.20	1	09/27/23 01:46	_
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	09/27/23 01:46	
Vinyl Chloride	0.46 J	1.0	0.20	1	09/27/23 01:46	
cis-1,2-Dichloroethene	6.5	1.0	0.23	1	09/27/23 01:46	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	09/27/23 01:46	
m,p-Xylenes	2.0 U	2.0	0.20	1	09/27/23 01:46	
o-Xylene	1.0 U	1.0	0.20	1	09/27/23 01:46	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	09/27/23 01:46	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	09/27/23 01:46	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	85 - 122	09/27/23 01:46	
Dibromofluoromethane	93	80 - 116	09/27/23 01:46	
Toluene-d8	95	87 - 121	09/27/23 01:46	

Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/14/23 11:15

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 MW-08
 Units: ug/L

 Lab Code:
 R2308533-003
 Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C **Prep Method:** EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	5.8	1.0	0.20	1	09/27/23 02:08	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	09/27/23 02:08	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	09/27/23 02:08	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	09/27/23 02:08	
1,1-Dichloroethane (1,1-DCA)	4.7	1.0	0.20	1	09/27/23 02:08	
1,1-Dichloroethene (1,1-DCE)	0.30 J	1.0	0.20	1	09/27/23 02:08	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	09/27/23 02:08	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	09/27/23 02:08	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	09/27/23 02:08	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	09/27/23 02:08	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 02:08	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	09/27/23 02:08	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	09/27/23 02:08	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 02:08	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 02:08	
1,4-Dioxane	40 U	40	13	1	09/27/23 02:08	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	09/27/23 02:08	
2-Hexanone	5.0 U	5.0	0.20	1	09/27/23 02:08	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	09/27/23 02:08	
Acetone	5.0 U	5.0	5.0	1	09/27/23 02:08	
Benzene	1.0 U	1.0	0.20	1	09/27/23 02:08	
Bromochloromethane	1.0 U	1.0	0.20	1	09/27/23 02:08	
Bromodichloromethane	1.0 U	1.0	0.20	1	09/27/23 02:08	
Bromoform	1.0 U	1.0	0.25	1	09/27/23 02:08	
Bromomethane	1.0 U	1.0	0.23	1	09/27/23 02:08	
Carbon Disulfide	1.0 U	1.0	0.42	1	09/27/23 02:08	
Carbon Tetrachloride	1.0 U	1.0	0.42	1	09/27/23 02:08	
Chlorobenzene	1.0 U	1.0	0.34	1	09/27/23 02:08	
Chloroethane	1.0 U	1.0	0.23	1	09/27/23 02:08	
Chloroform	1.0 U	1.0	0.23	1	09/27/23 02:08	
Chloromethane	1.0 U	1.0	0.80	1	09/27/23 02:08	
	1.0 U	1.0	0.60	1	09/27/23 02:08	
Cyclohexane		1.0	0.00			
Dibromochloromethane	1.0 U			1 1	09/27/23 02:08	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21		09/27/23 02:08	
Dichloromethane	1.0 U	1.0	0.65	1	09/27/23 02:08	
Ethylbenzene	1.0 U	1.0	0.20	1	09/27/23 02:08	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	09/27/23 02:08	
Methyl Acetate	2.0 U	2.0	0.87	1	09/27/23 02:08	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	09/27/23 02:08	
Methylcyclohexane	1.0 U	1.0	0.20	1	09/27/23 02:08	
Styrene	1.0 U	1.0	0.20	1	09/27/23 02:08	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	09/27/23 02:08	
Toluene	1.0 U	1.0	0.20	1	09/27/23 02:08	

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Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/14/23 11:15

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 MW-08
 Units: ug/L

 Lab Code:
 R2308533-003
 Basis: NA

Volatile Organic Compounds by GC/MS

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	12	1.0	0.20	1	09/27/23 02:08	_
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	09/27/23 02:08	
Vinyl Chloride	1.0 U	1.0	0.20	1	09/27/23 02:08	
cis-1,2-Dichloroethene	6.1	1.0	0.23	1	09/27/23 02:08	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	09/27/23 02:08	
m,p-Xylenes	2.0 U	2.0	0.20	1	09/27/23 02:08	
o-Xylene	1.0 U	1.0	0.20	1	09/27/23 02:08	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	09/27/23 02:08	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	09/27/23 02:08	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	85 - 122	09/27/23 02:08	
Dibromofluoromethane	92	80 - 116	09/27/23 02:08	
Toluene-d8	95	87 - 121	09/27/23 02:08	

Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/14/23 10:25

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 MW-13
 Units: ug/L

 Lab Code:
 R2308533-004
 Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C **Prep Method:** EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	4.6	1.0	0.20	1	09/27/23 02:30	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	09/27/23 02:30	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	09/27/23 02:30	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	09/27/23 02:30	
1,1-Dichloroethane (1,1-DCA)	5.4	1.0	0.20	1	09/27/23 02:30	
1,1-Dichloroethene (1,1-DCE)	0.40 J	1.0	0.20	1	09/27/23 02:30	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	09/27/23 02:30	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	09/27/23 02:30	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	09/27/23 02:30	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	09/27/23 02:30	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 02:30	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	09/27/23 02:30	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	09/27/23 02:30	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 02:30	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 02:30	
1,4-Dioxane	40 U	40	13	1	09/27/23 02:30	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	09/27/23 02:30	
2-Hexanone	5.0 U	5.0	0.20	1	09/27/23 02:30	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	09/27/23 02:30	
Acetone	5.0 U	5.0	5.0	1	09/27/23 02:30	
Benzene	1.0 U	1.0	0.20	1	09/27/23 02:30	-
Bromochloromethane	1.0 U	1.0	0.20	1	09/27/23 02:30	
Bromodichloromethane	1.0 U	1.0	0.20	1	09/27/23 02:30	
Bromoform	1.0 U	1.0	0.25	1	09/27/23 02:30	
Bromomethane	1.0 U	1.0	0.23	1	09/27/23 02:30	
Carbon Disulfide	1.0 U	1.0	0.42	1	09/27/23 02:30	
Carbon Tetrachloride	1.0 U	1.0	0.42	1	09/27/23 02:30	
Chlorobenzene	1.0 U	1.0	0.34	1	09/27/23 02:30	
Chloroethane	1.0 U	1.0	0.23	1	09/27/23 02:30	
Chloroform	1.0 U	1.0	0.23	1	09/27/23 02:30	
Chloromethane	1.0 U	1.0	0.80	1	09/27/23 02:30	
	1.0 U	1.0	0.60	1	09/27/23 02:30	
Cyclohexane		1.0	0.00			
Dibromochloromethane	1.0 U			1 1	09/27/23 02:30	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21		09/27/23 02:30	
Dichloromethane	1.0 U	1.0	0.65	1	09/27/23 02:30	
Ethylbenzene	1.0 U	1.0	0.20	1	09/27/23 02:30	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	09/27/23 02:30	
Methyl Acetate	2.0 U	2.0	0.87	1	09/27/23 02:30	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	09/27/23 02:30	
Methylcyclohexane	1.0 U	1.0	0.20	1	09/27/23 02:30	
Styrene	1.0 U	1.0	0.20	1	09/27/23 02:30	
Tetrachloroethene (PCE)	4.2	1.0	0.21	1	09/27/23 02:30	
Toluene	1.0 U	1.0	0.20	1	09/27/23 02:30	

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Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/14/23 10:25

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 MW-13
 Units: ug/L

 Lab Code:
 R2308533-004
 Basis: NA

Volatile Organic Compounds by GC/MS

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	6.5	1.0	0.20	1	09/27/23 02:30	_
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	09/27/23 02:30	
Vinyl Chloride	1.0 U	1.0	0.20	1	09/27/23 02:30	
cis-1,2-Dichloroethene	5.4	1.0	0.23	1	09/27/23 02:30	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	09/27/23 02:30	
m,p-Xylenes	2.0 U	2.0	0.20	1	09/27/23 02:30	
o-Xylene	1.0 U	1.0	0.20	1	09/27/23 02:30	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	09/27/23 02:30	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	09/27/23 02:30	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	85 - 122	09/27/23 02:30	
Dibromofluoromethane	94	80 - 116	09/27/23 02:30	
Toluene-d8	95	87 - 121	09/27/23 02:30	

Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/14/23 14:25

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 MW-10D
 Units: ug/L

 Lab Code:
 R2308533-005
 Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C **Prep Method:** EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.6	1.0	0.20	1	09/27/23 02:53	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	09/27/23 02:53	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	09/27/23 02:53	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	09/27/23 02:53	
1,1-Dichloroethane (1,1-DCA)	0.67 J	1.0	0.20	1	09/27/23 02:53	
1,1-Dichloroethene (1,1-DCE)	0.23 J	1.0	0.20	1	09/27/23 02:53	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	09/27/23 02:53	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	09/27/23 02:53	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	09/27/23 02:53	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	09/27/23 02:53	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 02:53	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	09/27/23 02:53	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	09/27/23 02:53	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 02:53	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 02:53	
1,4-Dioxane	40 U	40	13	1	09/27/23 02:53	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	09/27/23 02:53	
2-Hexanone	5.0 U	5.0	0.20	1	09/27/23 02:53	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	09/27/23 02:53	
Acetone	5.0 U	5.0	5.0	1	09/27/23 02:53	
Benzene	1.0 U	1.0	0.20	1	09/27/23 02:53	
Bromochloromethane	1.0 U	1.0	0.20	1	09/27/23 02:53	
Bromodichloromethane	1.0 U	1.0	0.20	1	09/27/23 02:53	
Bromoform	1.0 U	1.0	0.25	1	09/27/23 02:53	
Bromomethane	1.0 U	1.0	0.70	1	09/27/23 02:53	
Carbon Disulfide	1.0 U	1.0	0.42	1	09/27/23 02:53	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	09/27/23 02:53	
Chlorobenzene	1.0 U	1.0	0.20	1	09/27/23 02:53	
Chloroethane	1.0 U	1.0	0.23	1	09/27/23 02:53	
Chloroform	1.0 U	1.0	0.51	1	09/27/23 02:53	
Chloromethane	1.0 U	1.0	0.80	1	09/27/23 02:53	
Cyclohexane	1.0 U	1.0	0.60	1	09/27/23 02:53	
Dibromochloromethane	1.0 U	1.0	0.20	1	09/27/23 02:53	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	09/27/23 02:53	
Dichloromethane	1.0 U	1.0	0.65	1	09/27/23 02:53	
Ethylbenzene	1.0 U	1.0	0.20	1	09/27/23 02:53	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	09/27/23 02:53	
Methyl Acetate	2.0 U	2.0	0.87	1	09/27/23 02:53	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	09/27/23 02:53	
Methylcyclohexane	1.0 U	1.0	0.20	1	09/27/23 02:53	
Styrene	1.0 U	1.0	0.20	1	09/27/23 02:53	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	09/27/23 02:53	
Toluene	1.0 U	1.0	0.20	1	09/27/23 02:53	

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Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/14/23 14:25

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 MW-10D
 Units: ug/L

 Lab Code:
 R2308533-005
 Basis: NA

Volatile Organic Compounds by GC/MS

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	0.96 J	1.0	0.20	1	09/27/23 02:53	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	09/27/23 02:53	
Vinyl Chloride	1.0 U	1.0	0.20	1	09/27/23 02:53	
cis-1,2-Dichloroethene	0.87 J	1.0	0.23	1	09/27/23 02:53	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	09/27/23 02:53	
m,p-Xylenes	2.0 U	2.0	0.20	1	09/27/23 02:53	
o-Xylene	1.0 U	1.0	0.20	1	09/27/23 02:53	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	09/27/23 02:53	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	09/27/23 02:53	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	85 - 122	09/27/23 02:53	
Dibromofluoromethane	91	80 - 116	09/27/23 02:53	
Toluene-d8	95	87 - 121	09/27/23 02:53	

Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/14/23 15:05

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 8354 Jackson Hill Rd
 Units: ug/L

 Lab Code:
 R2308533-006
 Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C **Prep Method:** EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	09/27/23 03:15	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	09/27/23 03:15	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	09/27/23 03:15	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	09/27/23 03:15	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	09/27/23 03:15	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	09/27/23 03:15	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	09/27/23 03:15	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	09/27/23 03:15	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	09/27/23 03:15	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	09/27/23 03:15	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 03:15	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	09/27/23 03:15	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	09/27/23 03:15	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 03:15	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 03:15	
1,4-Dioxane	40 U	40	13	1	09/27/23 03:15	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	09/27/23 03:15	
2-Hexanone	5.0 U	5.0	0.20	1	09/27/23 03:15	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	09/27/23 03:15	
Acetone	5.0 U	5.0	5.0	1	09/27/23 03:15	
Benzene	1.0 U	1.0	0.20	1	09/27/23 03:15	
Bromochloromethane	1.0 U	1.0	0.20	1	09/27/23 03:15	
Bromodichloromethane	1.0 U	1.0	0.20	1	09/27/23 03:15	
Bromoform	1.0 U	1.0	0.25	1	09/27/23 03:15	
Bromomethane	1.0 U	1.0	0.70	1	09/27/23 03:15	
Carbon Disulfide	1.0 U	1.0	0.42	1	09/27/23 03:15	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	09/27/23 03:15	
Chlorobenzene	1.0 U	1.0	0.20	1	09/27/23 03:15	
Chloroethane	1.0 U	1.0	0.23	1	09/27/23 03:15	
Chloroform	1.0 U	1.0	0.51	1	09/27/23 03:15	
Chloromethane	1.0 U	1.0	0.80	1	09/27/23 03:15	
Cyclohexane	1.0 U	1.0	0.60	1	09/27/23 03:15	
Dibromochloromethane	1.0 U	1.0	0.20	1	09/27/23 03:15	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	09/27/23 03:15	
Dichloromethane	1.0 U	1.0	0.65	1	09/27/23 03:15	
Ethylbenzene	1.0 U	1.0	0.20	1	09/27/23 03:15	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	09/27/23 03:15	
Methyl Acetate	2.0 U	2.0	0.87	1	09/27/23 03:15	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	09/27/23 03:15	
Methylcyclohexane	1.0 U	1.0	0.20	1	09/27/23 03:15	
Styrene	1.0 U	1.0	0.20	1	09/27/23 03:15	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	09/27/23 03:15	
Toluene	1.0 U	1.0	0.20	1	09/27/23 03:15	

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Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/14/23 15:05

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 8354 Jackson Hill Rd
 Units: ug/L

 Lab Code:
 R2308533-006
 Basis: NA

Volatile Organic Compounds by GC/MS

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	09/27/23 03:15	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	09/27/23 03:15	
Vinyl Chloride	1.0 U	1.0	0.20	1	09/27/23 03:15	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	09/27/23 03:15	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	09/27/23 03:15	
m,p-Xylenes	2.0 U	2.0	0.20	1	09/27/23 03:15	
o-Xylene	1.0 U	1.0	0.20	1	09/27/23 03:15	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	09/27/23 03:15	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	09/27/23 03:15	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	85 - 122	09/27/23 03:15	
Dibromofluoromethane	91	80 - 116	09/27/23 03:15	
Toluene-d8	95	87 - 121	09/27/23 03:15	

Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/15/23 09:55

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 MW-1S
 Units: ug/L

 Lab Code:
 R2308533-007
 Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C **Prep Method:** EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	09/27/23 03:37	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	09/27/23 03:37	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	09/27/23 03:37	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	09/27/23 03:37	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	09/27/23 03:37	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	09/27/23 03:37	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	09/27/23 03:37	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	09/27/23 03:37	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	09/27/23 03:37	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	09/27/23 03:37	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 03:37	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	09/27/23 03:37	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	09/27/23 03:37	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 03:37	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 03:37	
1,4-Dioxane	40 U	40	13	1	09/27/23 03:37	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	09/27/23 03:37	
2-Hexanone	5.0 U	5.0	0.20	1	09/27/23 03:37	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	09/27/23 03:37	
Acetone	5.0 U	5.0	5.0	1	09/27/23 03:37	
Benzene	1.0 U	1.0	0.20	1	09/27/23 03:37	
Bromochloromethane	1.0 U	1.0	0.20	1	09/27/23 03:37	
Bromodichloromethane	1.0 U	1.0	0.20	1	09/27/23 03:37	
Bromoform	1.0 U	1.0	0.25	1	09/27/23 03:37	
Bromomethane	1.0 U	1.0	0.70	1	09/27/23 03:37	
Carbon Disulfide	1.0 U	1.0	0.42	1	09/27/23 03:37	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	09/27/23 03:37	
Chlorobenzene	1.0 U	1.0	0.20	1	09/27/23 03:37	
Chloroethane	1.0 U	1.0	0.23	1	09/27/23 03:37	
Chloroform	1.0 U	1.0	0.51	1	09/27/23 03:37	
Chloromethane	1.0 U	1.0	0.80	1	09/27/23 03:37	
Cyclohexane	1.0 U	1.0	0.60	1	09/27/23 03:37	
Dibromochloromethane	1.0 U	1.0	0.20	1	09/27/23 03:37	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.20	1	09/27/23 03:37	
Dichloromethane (CFC 12)	1.0 U	1.0	0.65	1	09/27/23 03:37	
Ethylbenzene	1.0 U	1.0	0.20	1	09/27/23 03:37	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	09/27/23 03:37	
Methyl Acetate	2.0 U	2.0	0.20	1	09/27/23 03:37	
Methyl tert-Butyl Ether	1.0 U	1.0	0.37	1	09/27/23 03:37	
Methylcyclohexane	1.0 U	1.0	0.20	1	09/27/23 03:37	
Styrene Styrene	1.0 U	1.0	0.20	1	09/27/23 03:37	
Tetrachloroethene (PCE)	1.0 U	1.0	0.20	1	09/27/23 03:37	
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Toluene	1.0 U	1.0	0.20	1	09/27/23 03:37	

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Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/15/23 09:55

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 MW-1S
 Units: ug/L

 Lab Code:
 R2308533-007
 Basis: NA

Volatile Organic Compounds by GC/MS

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	09/27/23 03:37	_
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	09/27/23 03:37	
Vinyl Chloride	1.0 U	1.0	0.20	1	09/27/23 03:37	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	09/27/23 03:37	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	09/27/23 03:37	
m,p-Xylenes	2.0 U	2.0	0.20	1	09/27/23 03:37	
o-Xylene	1.0 U	1.0	0.20	1	09/27/23 03:37	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	09/27/23 03:37	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	09/27/23 03:37	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	92	85 - 122	09/27/23 03:37	
Dibromofluoromethane	91	80 - 116	09/27/23 03:37	
Toluene-d8	94	87 - 121	09/27/23 03:37	

Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/15/23 11:15

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 MW-07
 Units: ug/L

 Lab Code:
 R2308533-008
 Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C **Prep Method:** EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	3.9	1.0	0.20	1	09/27/23 04:00	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	09/27/23 04:00	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	09/27/23 04:00	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	09/27/23 04:00	
1,1-Dichloroethane (1,1-DCA)	1.5	1.0	0.20	1	09/27/23 04:00	
1,1-Dichloroethene (1,1-DCE)	0.66 J	1.0	0.20	1	09/27/23 04:00	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	09/27/23 04:00	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	09/27/23 04:00	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	09/27/23 04:00	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	09/27/23 04:00	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 04:00	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	09/27/23 04:00	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	09/27/23 04:00	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 04:00	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 04:00	
1,4-Dioxane	40 U	40	13	1	09/27/23 04:00	,
2-Butanone (MEK)	5.0 U	5.0	0.78	1	09/27/23 04:00	
2-Hexanone	5.0 U	5.0	0.20	1	09/27/23 04:00	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	09/27/23 04:00	
Acetone	5.0 U	5.0	5.0	1	09/27/23 04:00	
Benzene	1.0 U	1.0	0.20	1	09/27/23 04:00	
Bromochloromethane	1.0 U	1.0	0.20	1	09/27/23 04:00	
Bromodichloromethane	1.0 U	1.0	0.20	1	09/27/23 04:00	
Bromoform	1.0 U	1.0	0.25	1	09/27/23 04:00	
Bromomethane	1.0 U	1.0	0.70	1	09/27/23 04:00	
Carbon Disulfide	1.0 U	1.0	0.42	1	09/27/23 04:00	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	09/27/23 04:00	
Chlorobenzene	1.0 U	1.0	0.20	1	09/27/23 04:00	
Chloroethane	1.0 U	1.0	0.23	1	09/27/23 04:00	
Chloroform	1.0 U	1.0	0.51	1	09/27/23 04:00	
Chloromethane	1.0 U	1.0	0.80	1	09/27/23 04:00	
Cyclohexane	1.0 U	1.0	0.60	1	09/27/23 04:00	
Dibromochloromethane	1.0 U	1.0	0.20	1	09/27/23 04:00	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	09/27/23 04:00	
Dichloromethane (e1 e 12)	1.0 U	1.0	0.65	1	09/27/23 04:00	
Ethylbenzene	1.0 U	1.0	0.20	1	09/27/23 04:00	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	09/27/23 04:00	
Methyl Acetate	2.0 U	2.0	0.87	1	09/27/23 04:00	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	09/27/23 04:00	
Methylcyclohexane	1.0 U	1.0	0.20	1	09/27/23 04:00	
Styrene	1.0 U	1.0	0.20	1	09/27/23 04:00	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	09/27/23 04:00	
Toluene	1.0 U	1.0	0.20	1	09/27/23 04:00	
TOTACHE	1.0 0	1.0	0.20	1	07/21/23 04.00	

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Analytical Report

Client: Service Request: R2308533 LU Engineers

Date Collected: 09/15/23 11:15 **Project:** Cuba LF/50191-01

Sample Matrix: Water **Date Received:** 09/15/23 15:35

Sample Name: MW-07 Units: ug/L

Lab Code: R2308533-008 Basis: NA

Volatile Organic Compounds by GC/MS

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	6.9	1.0	0.20	1	09/27/23 04:00	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	09/27/23 04:00	
Vinyl Chloride	1.0 U	1.0	0.20	1	09/27/23 04:00	
cis-1,2-Dichloroethene	3.0	1.0	0.23	1	09/27/23 04:00	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	09/27/23 04:00	
m,p-Xylenes	2.0 U	2.0	0.20	1	09/27/23 04:00	
o-Xylene	1.0 U	1.0	0.20	1	09/27/23 04:00	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	09/27/23 04:00	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	09/27/23 04:00	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	92	85 - 122	09/27/23 04:00	
Dibromofluoromethane	92	80 - 116	09/27/23 04:00	
Toluene-d8	96	87 - 121	09/27/23 04:00	

Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/15/23 12:05

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 MW-12
 Units: ug/L

 Lab Code:
 R2308533-009
 Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C **Prep Method:** EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	0.36 Ј	1.0	0.20	1	09/27/23 04:22	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	09/27/23 04:22	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	09/27/23 04:22	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	09/27/23 04:22	
1,1-Dichloroethane (1,1-DCA)	0.36 J	1.0	0.20	1	09/27/23 04:22	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	09/27/23 04:22	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	09/27/23 04:22	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	09/27/23 04:22	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	09/27/23 04:22	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	09/27/23 04:22	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 04:22	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	09/27/23 04:22	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	09/27/23 04:22	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 04:22	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 04:22	
1,4-Dioxane	40 U	40	13	1	09/27/23 04:22	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	09/27/23 04:22	
2-Hexanone	5.0 U	5.0	0.20	1	09/27/23 04:22	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	09/27/23 04:22	
Acetone	5.0 U	5.0	5.0	1	09/27/23 04:22	
Benzene	1.0 U	1.0	0.20	1	09/27/23 04:22	
Bromochloromethane	1.0 U	1.0	0.20	1	09/27/23 04:22	
Bromodichloromethane	1.0 U	1.0	0.20	1	09/27/23 04:22	
Bromoform	1.0 U	1.0	0.25	1	09/27/23 04:22	
Bromomethane	1.0 U	1.0	0.70	1	09/27/23 04:22	
Carbon Disulfide	1.0 U	1.0	0.42	1	09/27/23 04:22	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	09/27/23 04:22	
Chlorobenzene	1.0 U	1.0	0.20	1	09/27/23 04:22	
Chloroethane	1.0 U	1.0	0.23	1	09/27/23 04:22	
Chloroform	1.0 U	1.0	0.23	1	09/27/23 04:22	
Chloromethane	1.0 U	1.0	0.80	1	09/27/23 04:22	
Cyclohexane	1.0 U	1.0	0.60	1	09/27/23 04:22	
Dibromochloromethane	1.0 U	1.0	0.00	1	09/27/23 04:22	
	1.0 U	1.0	0.20	1	09/27/23 04:22	
Dichlorodifluoromethane (CFC 12) Dichloromethane	1.0 U 1.0 U	1.0	0.21	1	09/27/23 04:22	
	1.0 U	1.0	0.03			
Ethylbenzene			0.20	1 1	09/27/23 04:22	
Isopropylbenzene (Cumene)	1.0 U 2.0 U	1.0			09/27/23 04:22	
Methyl Acetate		2.0	0.87	1	09/27/23 04:22	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	09/27/23 04:22	
Methylcyclohexane	1.0 U	1.0	0.20	1	09/27/23 04:22	
Styrene	1.0 U	1.0	0.20	1	09/27/23 04:22	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	09/27/23 04:22	
Toluene	1.0 U	1.0	0.20	1	09/27/23 04:22	

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Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/15/23 12:05

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 MW-12
 Units: ug/L

 Lab Code:
 R2308533-009
 Basis: NA

Volatile Organic Compounds by GC/MS

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	0.60 J	1.0	0.20	1	09/27/23 04:22	_
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	09/27/23 04:22	
Vinyl Chloride	1.0 U	1.0	0.20	1	09/27/23 04:22	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	09/27/23 04:22	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	09/27/23 04:22	
m,p-Xylenes	2.0 U	2.0	0.20	1	09/27/23 04:22	
o-Xylene	1.0 U	1.0	0.20	1	09/27/23 04:22	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	09/27/23 04:22	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	09/27/23 04:22	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	85 - 122	09/27/23 04:22	
Dibromofluoromethane	93	80 - 116	09/27/23 04:22	
Toluene-d8	95	87 - 121	09/27/23 04:22	

Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/15/23 12:20

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 SW-03
 Units: ug/L

 Lab Code:
 R2308533-010
 Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C **Prep Method:** EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	09/27/23 04:44	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	09/27/23 04:44	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	09/27/23 04:44	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	09/27/23 04:44	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	09/27/23 04:44	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	09/27/23 04:44	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	09/27/23 04:44	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	09/27/23 04:44	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	09/27/23 04:44	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	09/27/23 04:44	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 04:44	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	09/27/23 04:44	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	09/27/23 04:44	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 04:44	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 04:44	
1,4-Dioxane	40 U	40	13	1	09/27/23 04:44	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	09/27/23 04:44	
2-Hexanone	5.0 U	5.0	0.20	1	09/27/23 04:44	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	09/27/23 04:44	
Acetone	5.0 U	5.0	5.0	1	09/27/23 04:44	
Benzene	1.0 U	1.0	0.20	1	09/27/23 04:44	
Bromochloromethane	1.0 U	1.0	0.20	1	09/27/23 04:44	
Bromodichloromethane	1.0 U	1.0	0.20	1	09/27/23 04:44	
Bromoform	1.0 U	1.0	0.25	1	09/27/23 04:44	
Bromomethane	1.0 U	1.0	0.70	1	09/27/23 04:44	
Carbon Disulfide	1.0 U	1.0	0.42	1	09/27/23 04:44	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	09/27/23 04:44	
Chlorobenzene	1.0 U	1.0	0.20	1	09/27/23 04:44	
Chloroethane	1.0 U	1.0	0.23	1	09/27/23 04:44	
Chloroform	1.0 U	1.0	0.51	1	09/27/23 04:44	
Chloromethane	1.0 U	1.0	0.80	1	09/27/23 04:44	
Cyclohexane	1.0 U	1.0	0.60	1	09/27/23 04:44	
Dibromochloromethane	1.0 U	1.0	0.20	1	09/27/23 04:44	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	09/27/23 04:44	
Dichloromethane (CFC 12)	1.0 U	1.0	0.65	1	09/27/23 04:44	
Ethylbenzene	1.0 U	1.0	0.20	1	09/27/23 04:44	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	09/27/23 04:44	
Methyl Acetate	2.0 U	2.0	0.20	1	09/27/23 04:44	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	09/27/23 04:44	
Methylcyclohexane	1.0 U	1.0	0.20	1	09/27/23 04:44	
Styrene Styrene	1.0 U	1.0	0.20	1	09/27/23 04:44	
Tetrachloroethene (PCE)	1.0 U	1.0	0.20	1	09/27/23 04:44	
Toluene	1.0 U	1.0	0.21	1	09/27/23 04:44	
TOTUCITE	1.0 U	1.0	0.20	1	03/21/23 04:44	

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Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/15/23 12:20

Sample Matrix: Water Date Received: 09/15/23 15:35

Sample Name: SW-03 Units: ug/L

Lab Code: R2308533-010 **Basis:** NA

Volatile Organic Compounds by GC/MS

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	09/27/23 04:44	_
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	09/27/23 04:44	
Vinyl Chloride	1.0 U	1.0	0.20	1	09/27/23 04:44	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	09/27/23 04:44	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	09/27/23 04:44	
m,p-Xylenes	2.0 U	2.0	0.20	1	09/27/23 04:44	
o-Xylene	1.0 U	1.0	0.20	1	09/27/23 04:44	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	09/27/23 04:44	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	09/27/23 04:44	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	85 - 122	09/27/23 04:44	
Dibromofluoromethane	92	80 - 116	09/27/23 04:44	
Toluene-d8	96	87 - 121	09/27/23 04:44	

Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/15/23 12:35

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 SW-4
 Units: ug/L

 Lab Code:
 R2308533-011
 Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C **Prep Method:** EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	09/27/23 05:06	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	09/27/23 05:06	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	09/27/23 05:06	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	09/27/23 05:06	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	09/27/23 05:06	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	09/27/23 05:06	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	09/27/23 05:06	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	09/27/23 05:06	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	09/27/23 05:06	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	09/27/23 05:06	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 05:06	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	09/27/23 05:06	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	09/27/23 05:06	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 05:06	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 05:06	
1,4-Dioxane	40 U	40	13	1	09/27/23 05:06	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	09/27/23 05:06	
2-Hexanone	5.0 U	5.0	0.20	1	09/27/23 05:06	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	09/27/23 05:06	
Acetone	5.0 U	5.0	5.0	1	09/27/23 05:06	
Benzene	1.0 U	1.0	0.20	1	09/27/23 05:06	
Bromochloromethane	1.0 U	1.0	0.20	1	09/27/23 05:06	
Bromodichloromethane	1.0 U	1.0	0.20	1	09/27/23 05:06	
Bromoform	1.0 U	1.0	0.25	1	09/27/23 05:06	
Bromomethane	1.0 U	1.0	0.70	1	09/27/23 05:06	
Carbon Disulfide	1.0 U	1.0	0.42	1	09/27/23 05:06	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	09/27/23 05:06	
Chlorobenzene	1.0 U	1.0	0.20	1	09/27/23 05:06	
Chloroethane	1.0 U	1.0	0.23	1	09/27/23 05:06	
Chloroform	1.0 U	1.0	0.51	1	09/27/23 05:06	
Chloromethane	1.0 U	1.0	0.80	1	09/27/23 05:06	
Cyclohexane	1.0 U	1.0	0.60	1	09/27/23 05:06	
Dibromochloromethane	1.0 U	1.0	0.20	1	09/27/23 05:06	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	09/27/23 05:06	
Dichloromethane (CFC 12)	1.0 U	1.0	0.65	1	09/27/23 05:06	
Ethylbenzene	1.0 U	1.0	0.20	1	09/27/23 05:06	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	09/27/23 05:06	
Methyl Acetate	2.0 U	2.0	0.20	1	09/27/23 05:06	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	09/27/23 05:06	
Methylcyclohexane	1.0 U	1.0	0.20	1	09/27/23 05:06	
Styrene Styrene	1.0 U	1.0	0.20	1	09/27/23 05:06	
Tetrachloroethene (PCE)	1.0 U	1.0	0.20	1	09/27/23 05:06	
* *			0.21	1	09/27/23 05:06	
Toluene	1.0 U	1.0	0.20	1	09/27/23 05:06	

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Analytical Report

Client: Service Request: R2308533 LU Engineers

Date Collected: 09/15/23 12:35 **Project:** Cuba LF/50191-01

Sample Matrix: Water **Date Received:** 09/15/23 15:35

SW-4 **Sample Name:** Units: ug/L Lab Code: R2308533-011

Basis: NA

Volatile Organic Compounds by GC/MS

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	09/27/23 05:06	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	09/27/23 05:06	
Vinyl Chloride	1.0 U	1.0	0.20	1	09/27/23 05:06	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	09/27/23 05:06	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	09/27/23 05:06	
m,p-Xylenes	2.0 U	2.0	0.20	1	09/27/23 05:06	
o-Xylene	1.0 U	1.0	0.20	1	09/27/23 05:06	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	09/27/23 05:06	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	09/27/23 05:06	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	85 - 122	09/27/23 05:06	
Dibromofluoromethane	93	80 - 116	09/27/23 05:06	
Toluene-d8	97	87 - 121	09/27/23 05:06	

Analytical Report

 Client:
 LU Engineers
 Service Request:
 R2308533

 Project:
 Cuba LF/50191-01
 Date Collected:
 09/14/23

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 Trip Blank
 Units: ug/L

 Lab Code:
 R2308533-012
 Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C **Prep Method:** EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	09/27/23 01:01	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	09/27/23 01:01	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	09/27/23 01:01	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	09/27/23 01:01	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	09/27/23 01:01	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	09/27/23 01:01	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	09/27/23 01:01	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	09/27/23 01:01	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	09/27/23 01:01	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	09/27/23 01:01	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 01:01	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	09/27/23 01:01	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	09/27/23 01:01	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 01:01	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	09/27/23 01:01	
1,4-Dioxane	40 U	40	13	1	09/27/23 01:01	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	09/27/23 01:01	
2-Hexanone	5.0 U	5.0	0.20	1	09/27/23 01:01	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	09/27/23 01:01	
Acetone	5.0 U	5.0	5.0	1	09/27/23 01:01	
Benzene	1.0 U	1.0	0.20	1	09/27/23 01:01	
Bromochloromethane	1.0 U	1.0	0.20	1	09/27/23 01:01	
Bromodichloromethane	1.0 U	1.0	0.20	1	09/27/23 01:01	
Bromoform	1.0 U	1.0	0.25	1	09/27/23 01:01	
Bromomethane	1.0 U	1.0	0.70	1	09/27/23 01:01	
Carbon Disulfide	1.0 U	1.0	0.42	1	09/27/23 01:01	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	09/27/23 01:01	
Chlorobenzene	1.0 U	1.0	0.20	1	09/27/23 01:01	
Chloroethane	1.0 U	1.0	0.23	1	09/27/23 01:01	
Chloroform	1.0 U	1.0	0.23	1	09/27/23 01:01	
Chloromethane	1.0 U	1.0	0.80	1	09/27/23 01:01	
Cyclohexane	1.0 U	1.0	0.60	1	09/27/23 01:01	
Dibromochloromethane	1.0 U	1.0	0.00	1	09/27/23 01:01	
	1.0 U	1.0	0.20	1	09/27/23 01:01	
Dichlorodifluoromethane (CFC 12) Dichloromethane	1.0 U	1.0	0.21	1	09/27/23 01:01	
	1.0 U	1.0	0.03			
Ethylbenzene			0.20	1 1	09/27/23 01:01	
Isopropylbenzene (Cumene)	1.0 U	1.0			09/27/23 01:01	
Methyl Acetate	2.0 U	2.0	0.87	1	09/27/23 01:01	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	09/27/23 01:01	
Methylcyclohexane	1.0 U	1.0	0.20	1	09/27/23 01:01	
Styrene	1.0 U	1.0	0.20	1	09/27/23 01:01	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	09/27/23 01:01	
Toluene	0.22 J	1.0	0.20	1	09/27/23 01:01	

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Analytical Report

 Client:
 LU Engineers
 Service Request:
 R2308533

 Project:
 Cuba LF/50191-01
 Date Collected:
 09/14/23

Sample Matrix: Water Date Received: 09/15/23 15:35

 Sample Name:
 Trip Blank
 Units: ug/L

 Lab Code:
 R2308533-012
 Basis: NA

Volatile Organic Compounds by GC/MS

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	09/27/23 01:01	_
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	09/27/23 01:01	
Vinyl Chloride	1.0 U	1.0	0.20	1	09/27/23 01:01	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	09/27/23 01:01	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	09/27/23 01:01	
m,p-Xylenes	2.0 U	2.0	0.20	1	09/27/23 01:01	
o-Xylene	1.0 U	1.0	0.20	1	09/27/23 01:01	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	09/27/23 01:01	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	09/27/23 01:01	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	85 - 122	09/27/23 01:01	
Dibromofluoromethane	93	80 - 116	09/27/23 01:01	
Toluene-d8	97	87 - 121	09/27/23 01:01	



Semivolatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com

Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 **Date Collected:** 09/14/23 09:25

Sample Matrix: Water Date Received: 09/15/23 15:35

Sample Name: MW-11 Units: ug/L

Lab Code: R2308533-002 **Basis:** NA

1,4-Dioxane by GC/MS

Analysis Method: 8270D SIM **Prep Method:** EPA 3535A

Analyte Name Result MRL MDL Dil. Date Analyzed Date Extracted Q

1,4-Dioxane **4.0** 0.16 0.11 1 09/21/23 16:21 9/19/23

Surrogate Name% RecControl LimitsDate AnalyzedQTetrahydrofuran-d8 (SUR)8764 - 12409/21/23 16:21



Metals

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com



Form 1

Inorganic Analysis Data Sheet

Metals By 6010C, 7470A

Workorder

R2308533

Client

LU Engineers

Project

Cuba LF

10/04/2023

ALS Environmental–Rochester Laboratory

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Client LU Engineers

Workorder

Project Cuba LF

R2308533

Metals By 6010C, 7470A

R2308533-001		Collected	Received	Matrix	Prep Method	Basis
MW-04		09/14/23 0955	09/15/23 1535	Water	EPA 3005A/3010A, Method	NA
Analyte	Units MC Result	Q DL	LOQ	DF Analy	ysis Date Run ID	PrepBatch
Aluminum, Total	ug/L P 200	30	100	1 09/28	3/23 00:47 RPAES07_81	8730 427123
Antimony, Total	ug/L P 60	U 11	60	1 09/28	3/23 00:47 RPAES07_81	8730 427123
Arsenic, Total	ug/L P 10	U 6	10	1 09/28	3/23 00:47 RPAES07_81	8730 427123
Barium, Total	ug/L P 29	3	20	1 09/28	8/23 00:47 RPAES07_81	8730 427123
Beryllium, Total	ug/L P 3.0	U 0.2	3.0	1 09/28	8/23 00:47 RPAES07_81	8730 427123
Cadmium, Total	ug/L P 5.0	U 0.4	5.0	1 09/28	8/23 00:47 RPAES07_81	8730 427123
Calcium, Total	ug/L P 49700	300	1000	1 09/28	3/23 00:47 RPAES07_81	8730 427123
Chromium, Total	ug/L P 10	U 2	10	1 09/28	3/23 00:47 RPAES07_81	8730 427123
Cobalt, Total	ug/L P 1	J 0.9	50	1 09/28	3/23 00:47 RPAES07_81	8730 427123
Copper, Total	ug/L P 20	U 4	20	1 09/28	3/23 00:47 RPAES07_81	8730 427123
Iron, Total	ug/L P 260	70	100	1 09/28	3/23 00:47 RPAES07_81	8730 427123
Lead, Total	ug/L P 50	U 4	50	1 09/28	3/23 00:47 RPAES07_81	8730 427123
Magnesium, Total	ug/L P 11800	30	1000	1 09/28	3/23 00:47 RPAES07_81	8730 427123
Manganese, Total	ug/L P 4590	4	10	1 09/28	3/23 00:47 RPAES07_81	8730 427123
Mercury, Total	ug/L CV 0.20	U 0.08	0.20	1 09/20	0/23 14:56 RCVAA02_81	7875 426736
Nickel, Total	ug/L P 40	U 3	40	1 09/28	3/23 00:47 RPAES07_81	8730 427123
Potassium, Total	ug/L P 2500	400	2000	1 09/28	3/23 00:47 RPAES07_81	8730 427123
Selenium, Total	ug/L P 10	U 7	10	1 09/28	3/23 00:47 RPAES07_81	8730 427123
Silver, Total	ug/L P 10	U 0.6	10	1 09/28	3/23 00:47 RPAES07_81	8730 427123
Sodium, Total	ug/L P 4100	300	1000	1 09/28	3/23 00:47 RPAES07_81	8730 427123
Thallium, Total	ug/L P 10	U 8	10	1 09/28	3/23 00:47 RPAES07_81	8730 427123
Vanadium, Total	ug/L P 50	U 0.7	50	1 09/28	3/23 00:47 RPAES07_81	8730 427123
Zinc, Total	ug/L P 8	J 3	20	1 09/28	3/23 00:47 RPAES07_81	8730 427123



Client LU Engineers

Workorder

Project Cuba LF

R2308533

Metals By 6010C, 7470A

R2308533-002		Collected	Received	Matrix	Prep Method	Basis
MW-11		09/14/23 0925	09/15/23 1535	Water	EPA 3005A/3010A, Method	NA
Analyte	Units MC Result	Q DL	LOQ	DF Anal	ysis Date Run ID	PrepBatch
Aluminum, Total	ug/L P 840	30	100	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Antimony, Total	ug/L P 60	J 11	60	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Arsenic, Total	ug/L P 10	J 6	10	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Barium, Total	ug/L P 12	J 3	20	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Beryllium, Total	ug/L P 3.0	U 0.2	3.0	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Cadmium, Total	ug/L P 5.0	U 0.4	5.0	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Calcium, Total	ug/L P 49100	300	1000	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Chromium, Total	ug/L P 10	J 2	10	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Cobalt, Total	ug/L P 50	U 0.9	50	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Copper, Total	ug/L P 20	U 4	20	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Iron, Total	ug/L P 680	70	100	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Lead, Total	ug/L P 50	U 4	50	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Magnesium, Total	ug/L P 11200	30	1000	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Manganese, Total	ug/L P 84	4	10	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Mercury, Total	ug/L CV 0.20	U 0.08	0.20	1 09/2	0/23 14:58 RCVAA02_8	17875 426736
Nickel, Total	ug/L P 40	J 3	40	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Potassium, Total	ug/L P 2100	400	2000	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Selenium, Total	ug/L P 10	J 7	10	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Silver, Total	ug/L P 10	U 0.6	10	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Sodium, Total	ug/L P 3400	300	1000	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Thallium, Total	ug/L P 10	J 8	10	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Vanadium, Total	ug/L P 2	J 0.7	50	1 09/2	8/23 00:51 RPAES07_81	8730 427123
Zinc, Total	ug/L P 5	J 3	20	1 09/2	8/23 00:51 RPAES07_81	8730 427123



Client LU Engineers

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Project Cuba LF

R2308533

Metals By 6010C, 7470A

R2308533-003		Collected	Received	Mati	rix Prep Mo	ethod Basis	
MW-08		09/14/23 1115	09/15/23 1535	Wat	er EPA 3005 <i>A</i> Meth	,	
Analyte	Units MC Result	Q DL	LOQ	DF A	nalysis Date	Run ID	PrepBatch
Aluminum, Total	ug/L P 60100	30	100	1 09	9/28/23 01:07	RPAES07_818730	427123
Antimony, Total	ug/L P 60	U 11	60	1 09	9/28/23 01:07	RPAES07_818730	427123
Arsenic, Total	ug/L P 32	6	10	1 09	9/28/23 01:07	RPAES07_818730	427123
Barium, Total	ug/L P 274	3	20	1 09	9/28/23 01:07	RPAES07_818730	427123
Beryllium, Total	ug/L P 3.1	0.2	3.0	1 09	9/28/23 01:07	RPAES07_818730	427123
Cadmium, Total	ug/L P 0.6	J 0.4	5.0	1 09	9/28/23 01:07	RPAES07_818730	427123
Calcium, Total	ug/L P 37700	300	1000	1 09	9/28/23 01:07	RPAES07_818730	427123
Chromium, Total	ug/L P 75	2	10	1 09	9/28/23 01:07	RPAES07_818730	427123
Cobalt, Total	ug/L P 39	J 0.9	50	1 09	9/28/23 01:07	RPAES07_818730	427123
Copper, Total	ug/L P 176	4	20	1 09	9/28/23 01:07	RPAES07_818730	427123
Iron, Total	ug/L P 81300	700	1000	10 09	9/28/23 02:15	RPAES07_818730	427123
Lead, Total	ug/L P 27	J 4	50	1 09	9/28/23 01:07	RPAES07_818730	427123
Magnesium, Total	ug/L P 28400	30	1000	1 09	9/28/23 01:07	RPAES07_818730	427123
Manganese, Total	ug/L P 977	4	10	1 09	9/28/23 01:07	RPAES07_818730	427123
Mercury, Total	ug/L CV 0.20	U 0.08	0.20	1 09	9/20/23 15:04	RCVAA02_817875	426736
Nickel, Total	ug/L P 14	J 3	40	1 09	9/28/23 01:07	RPAES07_818730	427123
Potassium, Total	ug/L P 17900	400	2000	1 09	9/28/23 01:07	RPAES07_818730	427123
Selenium, Total	ug/L P 10	U 7	10	1 09	9/28/23 01:07	RPAES07_818730	427123
Silver, Total	ug/L P 10	U 0.6	10	1 09	9/28/23 01:07	RPAES07_818730	427123
Sodium, Total	ug/L P 5500	300	1000	1 09	9/28/23 01:07	RPAES07_818730	427123
Thallium, Total	ug/L P 10	U 8	10	1 09	9/28/23 01:07	RPAES07_818730	427123
Vanadium, Total	ug/L P 79	0.7	50	1 09	9/28/23 01:07	RPAES07_818730	427123
Zinc, Total	ug/L P 203	3	20	1 09	9/28/23 01:07	RPAES07_818730	427123



Client LU Engineers

Workorder

Project Cuba LF

R2308533

Metals By 6010C, 7470A

R2308533-004		Collected	Received	Matrix	Prep Method	Basis
MW-13		09/14/23 1025	09/15/23 1535	Water	EPA 3005A/3010A, Method	NA
Analyte	Units MC Resu	t Q DL	LOQ	DF Anal	ysis Date Run ID	PrepBatch
Aluminum, Total	ug/L P 6160	30	100	1 09/2	8/23 01:10 RPAES07_818	730 427123
Antimony, Total	ug/L P 6	0 U 11	60	1 09/2	8/23 01:10 RPAES07_818	730 427123
Arsenic, Total	ug/L P 2	1 6	10	1 09/2	8/23 01:10 RPAES07_818	730 427123
Barium, Total	ug/L P 55	2 3	20	1 09/2	8/23 01:10 RPAES07_818	730 427123
Beryllium, Total	ug/L P 2	2 J 0.2	3.0	1 09/2	8/23 01:10 RPAES07_818	730 427123
Cadmium, Total	ug/L P 0	5 J 0.4	5.0	1 09/2	8/23 01:10 RPAES07_818	730 427123
Calcium, Total	ug/L P 9170	300	1000	1 09/2	8/23 01:10 RPAES07_818	730 427123
Chromium, Total	ug/L P 8	6 2	10	1 09/2	8/23 01:10 RPAES07_818	730 427123
Cobalt, Total	ug/L P 3	5 J 0.9	50	1 09/2	8/23 01:10 RPAES07_818	730 427123
Copper, Total	ug/L P 5	9 4	20	1 09/2	8/23 01:10 RPAES07_818	730 427123
Iron, Total	ug/L P 8640	700	1000	10 09/2	8/23 02:18 RPAES07_818	730 427123
Lead, Total	ug/L P 2	6 J 4	50	1 09/2	8/23 01:10 RPAES07_818	730 427123
Magnesium, Total	ug/L P 2380	30	1000	1 09/2	8/23 01:10 RPAES07_818	730 427123
Manganese, Total	ug/L P 302	0 4	10	1 09/2	8/23 01:10 RPAES07_818	730 427123
Mercury, Total	ug/L CV 0.2	0.08 U	0.20	1 09/2	0/23 13:52 RCVAA02_817	7874 426729
Nickel, Total	ug/L P 4	0 U 3	40	1 09/2	8/23 01:10 RPAES07_818	730 427123
Potassium, Total	ug/L P 1800	400	2000	1 09/2	8/23 01:10 RPAES07_818	730 427123
Selenium, Total	ug/L P 1	0 U 7	10	1 09/2	8/23 01:10 RPAES07_818	730 427123
Silver, Total	ug/L P 1	0.6	10	1 09/2	8/23 01:10 RPAES07_818	730 427123
Sodium, Total	ug/L P 450	300	1000	1 09/2	8/23 01:10 RPAES07_818	730 427123
Thallium, Total	ug/L P 1	8 U C	10	1 09/2	8/23 01:10 RPAES07_818	730 427123
Vanadium, Total	ug/L P 7	7 0.7	50	1 09/2	8/23 01:10 RPAES07_818	730 427123
Zinc, Total	ug/L P 19	3 3	20	1 09/2	8/23 01:10 RPAES07_818	730 427123



Client LU Engineers

Workorder

Project Cuba LF

R2308533

Metals By 6010C, 7470A

R2308533-005		Collected	Received	Matrix	Prep Method Bas	sis
MW-10D		09/14/23 1425	09/15/23 1535	Water	EPA 3005A/3010A, N. Method	A
Analyte	Units MC Result	Q DL	LOQ	DF Analy	ysis Date Run ID	PrepBatch
Aluminum, Total	ug/L P 1970	30	100	1 09/28	3/23 01:20 RPAES07_818730	427123
Antimony, Total	ug/L P 60	U 11	60	1 09/28	3/23 01:20 RPAES07_818730	427123
Arsenic, Total	ug/L P 10	U 6	10	1 09/28	3/23 01:20 RPAES07_818730	427123
Barium, Total	ug/L P 69	3	20	1 09/28	8/23 01:20 RPAES07_818730	427123
Beryllium, Total	ug/L P 3.0	U 0.2	3.0	1 09/28	B/23 01:20 RPAES07_818730	427123
Cadmium, Total	ug/L P 5.0	U 0.4	5.0	1 09/28	B/23 01:20 RPAES07_818730	427123
Calcium, Total	ug/L P 46300	300	1000	1 09/28	8/23 01:20 RPAES07_818730	427123
Chromium, Total	ug/L P 2	J 2	10	1 09/28	8/23 01:20 RPAES07_818730	427123
Cobalt, Total	ug/L P 1	J 0.9	50	1 09/28	8/23 01:20 RPAES07_818730	427123
Copper, Total	ug/L P 4	J 4	20	1 09/28	B/23 01:20 RPAES07_818730	427123
Iron, Total	ug/L P 1640	70	100	1 09/28	8/23 01:20 RPAES07_818730	427123
Lead, Total	ug/L P 50	U 4	50	1 09/28	8/23 01:20 RPAES07_818730	427123
Magnesium, Total	ug/L P 21100	30	1000	1 09/28	B/23 01:20 RPAES07_818730	427123
Manganese, Total	ug/L P 876	4	10	1 09/28	3/23 01:20 RPAES07_818730	427123
Mercury, Total	ug/L CV 0.20	U 0.08	0.20	1 09/20	0/23 13:54 RCVAA02_817874	426729
Nickel, Total	ug/L P 40	U 3	40	1 09/28	3/23 01:20 RPAES07_818730	427123
Potassium, Total	ug/L P 2800	400	2000	1 09/28	3/23 01:20 RPAES07_818730	427123
Selenium, Total	ug/L P 10	U 7	10	1 09/28	3/23 01:20 RPAES07_818730	427123
Silver, Total	ug/L P 10	U 0.6	10	1 09/28	3/23 01:20 RPAES07_818730	427123
Sodium, Total	ug/L P 16500	300	1000	1 09/28	3/23 01:20 RPAES07_818730	427123
Thallium, Total	ug/L P 10	U 8	10	1 09/28	3/23 01:20 RPAES07_818730	427123
Vanadium, Total	ug/L P 2	J 0.7	50	1 09/28	3/23 01:20 RPAES07_818730	427123
Zinc, Total	ug/L P 17	J 3	20	1 09/28	8/23 01:20 RPAES07_818730	427123



Client LU Engineers

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Project Cuba LF

R2308533

Metals By 6010C, 7470A

R2308533-006			Collected	Received	N	Matrix Pr	ep Method	Basis	
8354 Jackson Hi	ill Rd		09/14/23 1505	09/15/23 1535	٧	Water EPA	3005A/3010A, Method	NA	
Analyte	Units MC	Result Q	DL	LOQ	DF	Analysis Date	Run ID		PrepBatch
Aluminum, Total	ug/L P	40 J	30	100	1	09/28/23 01:23	RPAES07_8	18730	427123
Antimony, Total	ug/L P	60 U	11	60	1	09/28/23 01:23	RPAES07_8	18730	427123
Arsenic, Total	ug/L P	10 U	6	10	1	09/28/23 01:23	RPAES07_8	18730	427123
Barium, Total	ug/L P	56	3	20	1	09/28/23 01:23	RPAES07_8	18730	427123
Beryllium, Total	ug/L P	3.0 U	0.2	3.0	1	09/28/23 01:23	RPAES07_8	18730	427123
Cadmium, Total	ug/L P	5.0 U	0.4	5.0	1	09/28/23 01:23	RPAES07_8	18730	427123
Calcium, Total	ug/L P	22800	300	1000	1	09/28/23 01:23	RPAES07_8	18730	427123
Chromium, Total	ug/L P	10 U	2	10	1	09/28/23 01:23	RPAES07_8	18730	427123
Cobalt, Total	ug/L P	50 U	0.9	50	1	09/28/23 01:23	RPAES07_8	18730	427123
Copper, Total	ug/L P	20 U	4	20	1	09/28/23 01:23	RPAES07_8	18730	427123
Iron, Total	ug/L P	220	70	100	1	09/28/23 01:23	RPAES07_8	18730	427123
Lead, Total	ug/L P	50 U	4	50	1	09/28/23 01:23	RPAES07_8	18730	427123
Magnesium, Total	ug/L P	6800	30	1000	1	09/28/23 01:23	RPAES07_8	18730	427123
Manganese, Total	ug/L P	10 U	4	10	1	09/28/23 01:23	RPAES07_8	18730	427123
Mercury, Total	ug/L CV	0.20 U	0.08	0.20	1	09/20/23 13:56	RCVAA02_8	317874	426729
Nickel, Total	ug/L P	40 U	3	40	1	09/28/23 01:23	RPAES07_8	18730	427123
Potassium, Total	ug/L P	2500	400	2000	1	09/28/23 01:23	RPAES07_8	18730	427123
Selenium, Total	ug/L P	10 U	7	10	1	09/28/23 01:23	RPAES07_8	18730	427123
Silver, Total	ug/L P	10 U	0.6	10	1	09/28/23 01:23	RPAES07_8	18730	427123
Sodium, Total	ug/L P	20300	300	1000	1	09/28/23 01:23	RPAES07_8	18730	427123
Thallium, Total	ug/L P	10 U	8	10	1	09/28/23 01:23	RPAES07_8	18730	427123
Vanadium, Total	ug/L P	50 U	0.7	50	1	09/28/23 01:23	RPAES07_8	18730	427123
Zinc, Total	ug/L P	38	3	20	1	09/28/23 01:23	RPAES07_8	18730	427123



Client LU Engineers

Workorder

Project Cuba LF

R2308533

Metals By 6010C, 7470A

R2308533-007		Collected	Received	Matrix	Prep Method	Basis
MW-1S		09/15/23 0955	09/15/23 1535	Water	EPA 3005A/3010A, Method	NA
Analyte	Units MC Result	Q DL	LOQ	DF Analy	rsis Date Run ID	PrepBatch
Aluminum, Total	ug/L P 25600	30	100	1 09/28	3/23 01:26 RPAES07_818	3730 427123
Antimony, Total	ug/L P 60	U 11	60	1 09/28	3/23 01:26 RPAES07_818	3730 427123
Arsenic, Total	ug/L P 18	6	10	1 09/28	8/23 01:26 RPAES07_818	3730 427123
Barium, Total	ug/L P 611	3	20	1 09/28	8/23 01:26 RPAES07_818	3730 427123
Beryllium, Total	ug/L P 1.2	J 0.2	3.0	1 09/28	3/23 01:26 RPAES07_818	3730 427123
Cadmium, Total	ug/L P 1.6	J 0.4	5.0	1 09/28	3/23 01:26 RPAES07_818	3730 427123
Calcium, Total	ug/L P 121000	300	1000	1 09/28	8/23 01:26 RPAES07_818	3730 427123
Chromium, Total	ug/L P 34	2	10	1 09/28	8/23 01:26 RPAES07_818	3730 427123
Cobalt, Total	ug/L P 17	J 0.9	50	1 09/28	8/23 01:26 RPAES07_818	3730 427123
Copper, Total	ug/L P 273	4	20	1 09/28	8/23 01:26 RPAES07_818	3730 427123
Iron, Total	ug/L P 33400	70	100	1 09/28	8/23 01:26 RPAES07_818	3730 427123
Lead, Total	ug/L P 46	J 4	50	1 09/28	8/23 01:26 RPAES07_818	3730 427123
Magnesium, Total	ug/L P 10800	30	1000	1 09/28	3/23 01:26 RPAES07_818	3730 427123
Manganese, Total	ug/L P 1280	4	10	1 09/28	3/23 01:26 RPAES07_818	3730 427123
Mercury, Total	ug/L CV 0.08	BJ 0.08	0.20	1 09/20	0/23 13:58 RCVAA02_81	7874 426729
Nickel, Total	ug/L P 40	U 3	40	1 09/28	3/23 01:26 RPAES07_818	3730 427123
Potassium, Total	ug/L P 8700	400	2000	1 09/28	3/23 01:26 RPAES07_818	3730 427123
Selenium, Total	ug/L P 10	U 7	10	1 09/28	3/23 01:26 RPAES07_818	3730 427123
Silver, Total	ug/L P 10	U 0.6	10	1 09/28	3/23 01:26 RPAES07_818	3730 427123
Sodium, Total	ug/L P 2600	300	1000	1 09/28	3/23 01:26 RPAES07_818	3730 427123
Thallium, Total	ug/L P 10	U 8	10	1 09/28	3/23 01:26 RPAES07_818	3730 427123
Vanadium, Total	ug/L P 34	J 0.7	50	1 09/28	3/23 01:26 RPAES07_818	3730 427123
Zinc, Total	ug/L P 131	3	20	1 09/28	3/23 01:26 RPAES07_818	3730 427123



Client LU Engineers

Workorder

Project Cuba LF

R2308533

Metals By 6010C, 7470A

R2308533-008		Collected	Received	Matrix	Prep Method B	asis
MW-07		09/15/23 1115	09/15/23 1535	Water	EPA 3005A/3010A, Method	NA
Analyte	Units MC Result	Q DL	LOQ	DF Analy	ysis Date Run ID	PrepBatch
Aluminum, Total	ug/L P 5910	30	100	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Antimony, Total	ug/L P 60	U 11	60	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Arsenic, Total	ug/L P 10	U 6	10	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Barium, Total	ug/L P 85	3	20	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Beryllium, Total	ug/L P 0.2	J 0.2	3.0	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Cadmium, Total	ug/L P 0.5	J 0.4	5.0	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Calcium, Total	ug/L P 51000	300	1000	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Chromium, Total	ug/L P 9	J 2	10	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Cobalt, Total	ug/L P 3	J 0.9	50	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Copper, Total	ug/L P 12	J 4	20	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Iron, Total	ug/L P 5710	70	100	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Lead, Total	ug/L P 5	J 4	50	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Magnesium, Total	ug/L P 25700	30	1000	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Manganese, Total	ug/L P 171	4	10	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Mercury, Total	ug/L CV 0.20	U 0.08	0.20	1 09/20	0/23 14:00 RCVAA02_8178	74 426729
Nickel, Total	ug/L P 40	U 3	40	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Potassium, Total	ug/L P 3700	400	2000	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Selenium, Total	ug/L P 10	U 7	10	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Silver, Total	ug/L P 10	U 0.6	10	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Sodium, Total	ug/L P 7000	300	1000	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Thallium, Total	ug/L P 10	U 8	10	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Vanadium, Total	ug/L P 8	J 0.7	50	1 09/28	8/23 01:30 RPAES07_81873	30 427123
Zinc, Total	ug/L P 23	3	20	1 09/28	8/23 01:30 RPAES07_81873	30 427123



Client LU Engineers

Workorder

Project Cuba LF

R2308533

Metals By 6010C, 7470A

R2308533-009		Collected	Received	Matrix	Prep Method	Basis
MW-12		09/15/23 1205	09/15/23 1535	Water	EPA 3005A/3010A, Method	NA
Analyte	Units MC Result	Q DL	LOQ	DF Ana	lysis Date Run ID	PrepBato
Aluminum, Total	ug/L P 29300	30	100	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Antimony, Total	ug/L P 60	U 11	60	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Arsenic, Total	ug/L P 11	6	10	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Barium, Total	ug/L P 204	3	20	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Beryllium, Total	ug/L P 1.0	J 0.2	3.0	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Cadmium, Total	ug/L P 5.0	U 0.4	5.0	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Calcium, Total	ug/L P 82700	300	1000	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Chromium, Total	ug/L P 36	2	10	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Cobalt, Total	ug/L P 15	J 0.9	50	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Copper, Total	ug/L P 22	4	20	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Iron, Total	ug/L P 38000	70	100	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Lead, Total	ug/L P 16	J 4	50	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Magnesium, Total	ug/L P 45200	30	1000	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Manganese, Total	ug/L P 1940	4	10	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Mercury, Total	ug/L CV 0.13	3J 0.08	0.20	1 09/2	20/23 14:02 RCVAA02_	817874 426729
Nickel, Total	ug/L P 40	U 3	40	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Potassium, Total	ug/L P 12700	400	2000	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Selenium, Total	ug/L P 10	U 7	10	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Silver, Total	ug/L P 10	U 0.6	10	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Sodium, Total	ug/L P 25400	300	1000	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Thallium, Total	ug/L P 10	U 8	10	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Vanadium, Total	ug/L P 39	J 0.7	50	1 09/2	28/23 01:33 RPAES07_8	318730 427123
Zinc, Total	ug/L P 83	3	20	1 09/2	28/23 01:33 RPAES07_8	318730 427123



Client LU Engineers

Workorder

Project Cuba LF

R2308533

Metals By 6010C, 7470A

R2308533-010		Collected	Received	Matrix	Prep Method	Basis	
SW-03		09/15/23 1220	09/15/23 1535	Water	EPA 3005A/3010A, Method	NA	
Analyte	Units MC Result	Q DL	LOQ	DF Ana	lysis Date Run ID	F	PrepBatch
Aluminum, Total	ug/L P 1270	30	100	1 09/2	28/23 01:36 RPAES07_	_818730	427123
Antimony, Total	ug/L P 60	U 11	60	1 09/2	28/23 01:36 RPAES07_	_818730	427123
Arsenic, Total	ug/L P 10	U 6	10	1 09/2	28/23 01:36 RPAES07_	_818730	427123
Barium, Total	ug/L P 23	3	20	1 09/2	28/23 01:36 RPAES07_	_818730	427123
Beryllium, Total	ug/L P 3.0	U 0.2	3.0	1 09/2	28/23 01:36 RPAES07_	_818730	427123
Cadmium, Total	ug/L P 5.0	U 0.4	5.0	1 09/2	28/23 01:36 RPAES07_	_818730	427123
Calcium, Total	ug/L P 18400	300	1000	1 09/2	28/23 01:36 RPAES07_	_818730	427123
Chromium, Total	ug/L P 2	J 2	10	1 09/2	28/23 01:36 RPAES07_	_818730	427123
Cobalt, Total	ug/L P 50	U 0.9	50	1 09/2	28/23 01:36 RPAES07_	_818730	427123
Copper, Total	ug/L P 20	U 4	20	1 09/2	28/23 01:36 RPAES07_	_818730	427123
Iron, Total	ug/L P 1110	70	100	1 09/2	28/23 01:36 RPAES07_	_818730	427123
Lead, Total	ug/L P 50	U 4	50	1 09/2	28/23 01:36 RPAES07_	_818730	427123
Magnesium, Total	ug/L P 2700	30	1000	1 09/2	28/23 01:36 RPAES07_	_818730	427123
Manganese, Total	ug/L P 314	4	10	1 09/2	28/23 01:36 RPAES07_	_818730	427123
Mercury, Total	ug/L CV 0.20	U 0.08	0.20	1 09/2	20/23 14:10 RCVAA02	_817874	426729
Nickel, Total	ug/L P 40	U 3	40	1 09/2	28/23 01:36 RPAES07_	818730	427123
Potassium, Total	ug/L P 2300	400	2000	1 09/2	28/23 01:36 RPAES07_	_818730	427123
Selenium, Total	ug/L P 10	U 7	10	1 09/2	28/23 01:36 RPAES07_	818730	427123
Silver, Total	ug/L P 10	U 0.6	10	1 09/2	28/23 01:36 RPAES07_	_818730	427123
Sodium, Total	ug/L P 2800	300	1000	1 09/2	28/23 01:36 RPAES07_	818730	427123
Thallium, Total	ug/L P 10	U 8	10	1 09/2	28/23 01:36 RPAES07_	_818730	427123
Vanadium, Total	ug/L P 2	J 0.7	50	1 09/2	28/23 01:36 RPAES07_	_818730	427123
Zinc, Total	ug/L P 8	J 3	20	1 09/2	28/23 01:36 RPAES07_	_818730	427123



Client LU Engineers

Workorder

Project Cuba LF

R2308533

Metals By 6010C, 7470A

R2308533-011		Collected	Received	Matrix	Prep Method Basis	i
SW-4		09/15/23 1235	09/15/23 1535	Water	EPA 3005A/3010A, NA Method	
Analyte	Units MC Result	Q DL	LOQ	DF Analys	sis Date Run ID	PrepBatch
Aluminum, Total	ug/L P 4300	30	100	1 09/28	/23 01:39 RPAES07_818730	427123
Antimony, Total	ug/L P 60	U 11	60	1 09/28	/23 01:39 RPAES07_818730	427123
Arsenic, Total	ug/L P 10	U 6	10	1 09/28	/23 01:39 RPAES07_818730	427123
Barium, Total	ug/L P 38	3	20	1 09/28	/23 01:39 RPAES07_818730	427123
Beryllium, Total	ug/L P 0.2	J 0.2	3.0	1 09/28	/23 01:39 RPAES07_818730	427123
Cadmium, Total	ug/L P 5.0	U 0.4	5.0	1 09/28	/23 01:39 RPAES07_818730	427123
Calcium, Total	ug/L P 8000	300	1000	1 09/28	/23 01:39 RPAES07_818730	427123
Chromium, Total	ug/L P 4	J 2	10	1 09/28	/23 01:39 RPAES07_818730	427123
Cobalt, Total	ug/L P 2	J 0.9	50	1 09/28	/23 01:39 RPAES07_818730	427123
Copper, Total	ug/L P 20	U 4	20	1 09/28	/23 01:39 RPAES07_818730	427123
Iron, Total	ug/L P 3970	70	100	1 09/28	/23 01:39 RPAES07_818730	427123
Lead, Total	ug/L P 50	U 4	50	1 09/28	/23 01:39 RPAES07_818730	427123
Magnesium, Total	ug/L P 2200	30	1000	1 09/28	/23 01:39 RPAES07_818730	427123
Manganese, Total	ug/L P 414	4	10	1 09/28	/23 01:39 RPAES07_818730	427123
Mercury, Total	ug/L CV 0.20	U 0.08	0.20	1 09/20	/23 14:12 RCVAA02_817874	426729
Nickel, Total	ug/L P 40	U 3	40	1 09/28	/23 01:39 RPAES07_818730	427123
Potassium, Total	ug/L P 4200	400	2000	1 09/28	/23 01:39 RPAES07_818730	427123
Selenium, Total	ug/L P 10	U 7	10	1 09/28	/23 01:39 RPAES07_818730	427123
Silver, Total	ug/L P 10	U 0.6	10	1 09/28	/23 01:39 RPAES07_818730	427123
Sodium, Total	ug/L P 5500	300	1000	1 09/28	/23 01:39 RPAES07_818730	427123
Thallium, Total	ug/L P 10	U 8	10	1 09/28	/23 01:39 RPAES07_818730	427123
Vanadium, Total	ug/L P 7	J 0.7	50	1 09/28	/23 01:39 RPAES07_818730	427123
Zinc, Total	ug/L P 12	J 3	20	1 09/28	/23 01:39 RPAES07_818730	427123



Client LU Engineers

Workorder

Project Cuba LF

R2308533

Metals By 6010C, 7470A

R2308533-MB1					ľ	Matrix Prep	o Method Basis	
Method Blank					١		05A/3010A, NA 1ethod	
Analyte	Units MC	Result Q	DL	LOQ	DF	Analysis Date	Run ID	PrepBatch
Aluminum, Total	ug/L P	100 U	30	100	1	09/28/23 00:41	RPAES07_818730	427123
Antimony, Total	ug/L P	60 U	11	60	1	09/28/23 00:41	RPAES07_818730	427123
Arsenic, Total	ug/L P	10 U	6	10	1	09/28/23 00:41	RPAES07_818730	427123
Barium, Total	ug/L P	20 U	3	20	1	09/28/23 00:41	RPAES07_818730	427123
Beryllium, Total	ug/L P	3.0 U	0.2	3.0	1	09/28/23 00:41	RPAES07_818730	427123
Cadmium, Total	ug/L P	5.0 U	0.4	5.0	1	09/28/23 00:41	RPAES07_818730	427123
Calcium, Total	ug/L P	1000 U	300	1000	1	09/28/23 00:41	RPAES07_818730	427123
Chromium, Total	ug/L P	10 U	2	10	1	09/28/23 00:41	RPAES07_818730	427123
Cobalt, Total	ug/L P	50 U	0.9	50	1	09/28/23 00:41	RPAES07_818730	427123
Copper, Total	ug/L P	20 U	4	20	1	09/28/23 00:41	RPAES07_818730	427123
Iron, Total	ug/L P	100 U	70	100	1	09/28/23 00:41	RPAES07_818730	427123
Lead, Total	ug/L P	50 U	4	50	1	09/28/23 00:41	RPAES07_818730	427123
Magnesium, Total	ug/L P	1000 U	30	1000	1	09/28/23 00:41	RPAES07_818730	427123
Manganese, Total	ug/L P	10 U	4	10	1	09/28/23 00:41	RPAES07_818730	427123
Mercury, Total	ug/L CV	0.52	0.08	0.20	1	09/20/23 14:08	RCVAA02_817874	426729
Nickel, Total	ug/L P	40 U	3	40	1	09/28/23 00:41	RPAES07_818730	427123
Potassium, Total	ug/L P	2000 U	400	2000	1	09/28/23 00:41	RPAES07_818730	427123
Selenium, Total	ug/L P	10 U	7	10	1	09/28/23 00:41	RPAES07_818730	427123
Silver, Total	ug/L P	10 U	0.6	10	1	09/28/23 00:41	RPAES07_818730	427123
Sodium, Total	ug/L P	1000 U	300	1000	1	09/28/23 00:41	RPAES07_818730	427123
Thallium, Total	ug/L P	10 U	8	10	1	09/28/23 00:41	RPAES07_818730	427123
Vanadium, Total	ug/L P	50 U	0.7	50	1	09/28/23 00:41	RPAES07_818730	427123
Zinc, Total	ug/L P	20 U	3	20	1	09/28/23 00:41	RPAES07_818730	427123



Client LU Engineers Workorder R2308533

Project Cuba LF

Metals By 6010C, 7470A

R2308533-MB2					Matrix	Prep Method	Basis	
Method Blank					Water	Method	NA	
Analyte	Units MC	Result Q	DL	LOQ	DF Analysis D	ate Run ID		PrepBatch
Mercury, Total	ug/L CV	0.20 U	0.08	0.20	1 09/20/23	14:52 RCVAA02_	_817875	426736



QC Summary Forms

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com



Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com

QA/QC Report

Service Request: R2308533

Client: LU Engineers

Cuba LF/50191-01

Sample Matrix:

Project:

Water

SURROGATE RECOVERY SUMMARYVolatile Organic Compounds by GC/MS

Analysis Method: 8260C

Extraction Method: EPA 5030C

		4-Bromofluorobenzene	Dibromofluoromethane	Toluene-d8
Sample Name	Lab Code	85 - 122	80 - 116	87 - 121
MW-04	R2308533-001	94	95	97
MW-11	R2308533-002	93	93	95
MW-08	R2308533-003	93	92	95
MW-13	R2308533-004	93	94	95
MW-10D	R2308533-005	93	91	95
8354 Jackson Hill Rd	R2308533-006	93	91	95
MW-1S	R2308533-007	92	91	94
MW-07	R2308533-008	92	92	96
MW-12	R2308533-009	94	93	95
SW-03	R2308533-010	93	92	96
SW-4	R2308533-011	94	93	97
Trip Blank	R2308533-012	94	93	97
Lab Control Sample	RQ2312626-03	96	97	97
Method Blank	RQ2312626-04	94	94	97
MW-11 MS	RQ2312626-11	96	98	98
MW-11 DMS	RQ2312626-12	94	97	97

QA/QC Report

Client: LU Engineers
Project: Cuba LF/50191-01

Sample Matrix: Water

Service Request: R2308533 **Date Collected:** 09/14/23

Date Received: 09/15/23 **Date Analyzed:** 09/27/23

Date Extracted: NA

Units:

Basis:

Duplicate Matrix Spike Summary Volatile Organic Compounds by GC/MS

Sample Name: MW-11

ug/L NA

Lab Code: R2308533-002 **Analysis Method:** 8260C

Prep Method: EPA 5030C

	Matrix Spike	Duplicate Matrix Spike
	RQ2312626-11	RQ2312626-12
Sample	e Spike	Spike

		114-01-	-0-0 11							
	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
1,1,1-Trichloroethane (TCA)	2.4	56.7	50.0	109	56.8	50.0	109	74-127	<1	30
1,1,2,2-Tetrachloroethane	1.0 U	49.6	50.0	99	49.3	50.0	99	72-122	<1	30
1,1,2-Trichloroethane	1.0 U	51.0	50.0	102	49.4	50.0	99	82-121	3	30
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	48.3	50.0	97	47.4	50.0	95	50-147	2	30
1,1-Dichloroethane (1,1-DCA)	14	65.8	50.0	104	65.4	50.0	103	74-132	<1	30
1,1-Dichloroethene (1,1-DCE)	0.83 J	51.0	50.0	100	50.3	50.0	99	71-118	1	30
1,2,3-Trichlorobenzene	1.0 U	50.3	50.0	101	49.4	50.0	99	59-129	2	30
1,2,4-Trichlorobenzene	1.0 U	49.9	50.0	100	49.2	50.0	98	69-122	2	30
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	54.3	50.0	109	54.3	50.0	109	37-150	<1	30
1,2-Dibromoethane	1.0 U	53.8	50.0	108	52.6	50.0	105	67-127	2	30
1,2-Dichlorobenzene	1.0 U	50.8	50.0	102	50.3	50.0	101	77-120	<1	30
1,2-Dichloroethane	1.0 U	49.0	50.0	98	47.5	50.0	95	68-130	3	30
1,2-Dichloropropane	1.0 U	52.0	50.0	104	50.9	50.0	102	79-124	2	30
1,3-Dichlorobenzene	1.0 U	52.6	50.0	105	51.8	50.0	104	83-121	1	30
1,4-Dichlorobenzene	1.0 U	50.9	50.0	102	50.1	50.0	100	82-120	1	30
1,4-Dioxane	40 U	964	1000	96	1010	1000	101	44-154	4	30
2-Butanone (MEK)	5.0 U	38.3	50.0	77	38.1	50.0	76	61-137	<1	30
2-Hexanone	5.0 U	47.2	50.0	94	47.2	50.0	94	56-132	<1	30
4-Methyl-2-pentanone	5.0 U	45.8	50.0	92	45.3	50.0	91	60-141	1	30
Acetone	5.0 U	42.7	50.0	85	43.8	50.0	88	35-183	3	30
Benzene	1.0 U	52.7	50.0	105	52.2	50.0	104	76-129	<1	30
Bromochloromethane	1.0 U	49.6	50.0	99	48.9	50.0	98	80-122	1	30
Bromodichloromethane	1.0 U	51.3	50.0	103	50.6	50.0	101	78-133	1	30
Bromoform	1.0 U	56.3	50.0	113	55.5	50.0	111	58-133	1	30
Bromomethane	1.0 U	35.0	50.0	70	34.7	50.0	69	10-184	<1	30
Carbon Disulfide	1.0 U	47.6	50.0	95	47.5	50.0	95	59-140	<1	30
Carbon Tetrachloride	1.0 U	59.5	50.0	119	58.7	50.0	117	65-135	1	30
Chlorobenzene	1.0 U	51.6	50.0	103	51.0	50.0	102	76-125	1	30
Chloroethane	$0.36 \mathrm{J}$	43.5	50.0	86	42.8	50.0	85	48-146	2	30
Chloroform	1.0 U	50.0	50.0	100	49.6	50.0	99	75-130	<1	30
Chloromethane	1.0 U	51.0	50.0	102	50.2	50.0	100	55-160	1	30
Cyclohexane	1.0 U	46.1	50.0	92	45.2	50.0	90	52-145	2	30
Dibromochloromethane	1.0 U	55.7	50.0	111	54.7	50.0	109	72-128	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

QA/QC Report

Client: LU Engineers
Project: Cuba LF/50191-01

Sample Matrix: Water

Service Request:
Date Collected:

R2308533

Date Received:

09/14/23 09/15/23

Date Analyzed:

09/13/23

Date Extracted:

NA

Duplicate Matrix Spike Summary Volatile Organic Compounds by GC/MS

Sample Name: MW-11

Lab Code: R2308533-002

Analysis Method: Prep Method:

8260C

EPA 5030C

Units: Basis: ug/L NA

Matrix Spike

Duplicate Matrix Spike

RO2312626-12

		KQ2312	2020-11		KŲ	2312626-12				
	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Dichlorodifluoromethane (CFC 12)	1.0 U	42.0	50.0	84	41.7	50.0	83	49-154	<1	30
Dichloromethane	1.0 U	48.1	50.0	96	47.9	50.0	96	73-122	<1	30
Ethylbenzene	1.0 U	53.2	50.0	106	52.6	50.0	105	72-134	<1	30
Isopropylbenzene (Cumene)	1.0 U	55.2	50.0	110	54.7	50.0	109	77-128	<1	30
Methyl Acetate	2.0 U	25.2	50.0	50	24.5	50.0	49	26-121	3	30
Methyl tert-Butyl Ether	1.0 U	47.5	50.0	95	47.5	50.0	95	75-119	<1	30
Methylcyclohexane	1.0 U	46.7	50.0	93	45.8	50.0	92	45-146	2	30
Styrene	1.0 U	55.2	50.0	110	54.7	50.0	109	74-136	<1	30
Tetrachloroethene (PCE)	$0.80 \mathrm{~J}$	54.8	50.0	108	54.1	50.0	107	72-125	1	30
Toluene	1.0 U	52.4	50.0	105	51.7	50.0	103	79-119	1	30
Trichloroethene (TCE)	2.0	54.0	50.0	104	53.1	50.0	102	74-122	2	30
Trichlorofluoromethane (CFC 11)	1.0 U	49.9	50.0	100	49.1	50.0	98	71-136	2	30
Vinyl Chloride	0.46 J	43.4	50.0	86	43.5	50.0	86	74-159	<1	30
cis-1,2-Dichloroethene	6.5	56.5	50.0	100	55.9	50.0	99	77-127	1	30
cis-1,3-Dichloropropene	1.0 U	50.6	50.0	101	50.1	50.0	100	52-134	1	30
m,p-Xylenes	2.0 U	109	100	109	107	100	107	80-126	2	30
o-Xylene	1.0 U	54.5	50.0	109	53.0	50.0	106	79-123	3	30
trans-1,2-Dichloroethene	1.0 U	51.6	50.0	103	52.1	50.0	104	73-118	1	30
trans-1,3-Dichloropropene	1.0 U	51.8	50.0	104	51.3	50.0	103	71-133	<1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 Date Collected: NA

Sample Matrix: Water Date Received: NA

 Sample Name:
 Method Blank
 Units: ug/L

 Lab Code:
 RQ2312626-04
 Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C **Prep Method:** EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	09/26/23 23:54	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	09/26/23 23:54	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	09/26/23 23:54	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.22 J	1.0	0.20	1	09/26/23 23:54	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	09/26/23 23:54	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	09/26/23 23:54	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	09/26/23 23:54	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	09/26/23 23:54	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	09/26/23 23:54	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	09/26/23 23:54	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	09/26/23 23:54	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	09/26/23 23:54	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	09/26/23 23:54	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	09/26/23 23:54	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	09/26/23 23:54	
1,4-Dioxane	40 U	40	13	1	09/26/23 23:54	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	09/26/23 23:54	
2-Hexanone	5.0 U	5.0	0.20	1	09/26/23 23:54	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	09/26/23 23:54	
Acetone	5.0 U	5.0	5.0	1	09/26/23 23:54	
Benzene	1.0 U	1.0	0.20	1	09/26/23 23:54	
Bromochloromethane	1.0 U	1.0	0.20	1	09/26/23 23:54	
Bromodichloromethane	1.0 U	1.0	0.20	1	09/26/23 23:54	
Bromoform	1.0 U	1.0	0.25	1	09/26/23 23:54	
Bromomethane	1.0 U	1.0	0.70	1	09/26/23 23:54	
Carbon Disulfide	1.0 U	1.0	0.42	1	09/26/23 23:54	
Carbon Tetrachloride	1.0 U	1.0	0.42	1	09/26/23 23:54	
Chlorobenzene	1.0 U	1.0	0.34	1	09/26/23 23:54	
Chloroethane	1.0 U	1.0	0.20	1	09/26/23 23:54	
Chloroform	1.0 U	1.0	0.23	1		
Chloromethane	1.0 U	1.0	0.80	1	09/26/23 23:54 09/26/23 23:54	
	1.0 U	1.0	0.60	1	09/26/23 23:54	
Cyclohexane		1.0	0.80			
Dibromochloromethane	1.0 U			1 1	09/26/23 23:54	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21		09/26/23 23:54	
Dichloromethane	1.0 U	1.0	0.65	1	09/26/23 23:54	
Ethylbenzene	1.0 U	1.0	0.20	1	09/26/23 23:54	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	09/26/23 23:54	
Methyl Acetate	2.0 U	2.0	0.87	1	09/26/23 23:54	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	09/26/23 23:54	
Methylcyclohexane	1.0 U	1.0	0.20	1	09/26/23 23:54	
Styrene	1.0 U	1.0	0.20	1	09/26/23 23:54	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	09/26/23 23:54	
Toluene	1.0 U	1.0	0.20	1	09/26/23 23:54	

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Superset Reference:23-0000675431 rev 00

Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 Date Collected: NA

Sample Matrix: Water Date Received: NA

 Sample Name:
 Method Blank
 Units: ug/L

 Lab Code:
 RQ2312626-04
 Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C **Prep Method:** EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	09/26/23 23:54	_
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	09/26/23 23:54	
Vinyl Chloride	1.0 U	1.0	0.20	1	09/26/23 23:54	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	09/26/23 23:54	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	09/26/23 23:54	
m,p-Xylenes	2.0 U	2.0	0.20	1	09/26/23 23:54	
o-Xylene	1.0 U	1.0	0.20	1	09/26/23 23:54	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	09/26/23 23:54	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	09/26/23 23:54	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	85 - 122	09/26/23 23:54	
Dibromofluoromethane	94	80 - 116	09/26/23 23:54	
Toluene-d8	97	87 - 121	09/26/23 23:54	

QA/QC Report

Client: LU Engineers **Project:** Cuba LF/50191-01

Sample Matrix: Water Service Request: R2308533 Date Analyzed: 09/26/23

Lab Control Sample Summary Volatile Organic Compounds by GC/MS

Units:ug/L Basis:NA

Lab Control Sample

RQ2312626-03

Analytical

Analyte Name	Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	8260C	19.4	20.0	97	75-125
1,1,2,2-Tetrachloroethane	8260C	20.5	20.0	102	78-126
1,1,2-Trichloroethane	8260C	20.5	20.0	103	82-121
1,1,2-Trichloro-1,2,2-trifluoroethane	8260C	18.2	20.0	91	67-124
1,1-Dichloroethane (1,1-DCA)	8260C	20.1	20.0	101	80-124
1,1-Dichloroethene (1,1-DCE)	8260C	18.6	20.0	93	71-118
1,2,3-Trichlorobenzene	8260C	20.6	20.0	103	67-136
1,2,4-Trichlorobenzene	8260C	20.1	20.0	100	75-132
1,2-Dibromo-3-chloropropane (DBCP)	8260C	22.0	20.0	110	55-136
1,2-Dibromoethane	8260C	21.4	20.0	107	82-127
1,2-Dichlorobenzene	8260C	20.3	20.0	101	80-119
1,2-Dichloroethane	8260C	19.1	20.0	96	71-127
1,2-Dichloropropane	8260C	20.7	20.0	104	80-119
1,3-Dichlorobenzene	8260C	21.0	20.0	105	83-121
1,4-Dichlorobenzene	8260C	20.3	20.0	102	79-119
1,4-Dioxane	8260C	408	400	102	44-154
2-Butanone (MEK)	8260C	16.2	20.0	81	61-137
2-Hexanone	8260C	19.0	20.0	95	63-124
4-Methyl-2-pentanone	8260C	18.9	20.0	95	66-124
Acetone	8260C	17.3	20.0	86	40-161
Benzene	8260C	20.4	20.0	102	79-119
Bromochloromethane	8260C	19.5	20.0	98	81-126
Bromodichloromethane	8260C	19.4	20.0	97	81-123
Bromoform	8260C	22.0	20.0	110	65-146
Bromomethane	8260C	14.5	20.0	73	42-166
Carbon Disulfide	8260C	18.7	20.0	94	66-128
Carbon Tetrachloride	8260C	20.5	20.0	103	70-127
Chlorobenzene	8260C	20.3	20.0	101	80-121
Chloroethane	8260C	16.3	20.0	81	62-131
Chloroform	8260C	19.2	20.0	96	79-120
Chloromethane	8260C	23.3	20.0	117	65-135
Cyclohexane	8260C	18.2	20.0	91	69-120
Dibromochloromethane	8260C	20.4	20.0	102	72-128
Printed 10/5/2023 12:58:07 PM			Superset I	Reference:23-0000	675431 rev 00

QA/QC Report

Client: LU Engineers
Project: Cuba LF/50191-01

Sample Matrix: Water

Service Request: R2308533 Date Analyzed: 09/26/23

Lab Control Sample Summary Volatile Organic Compounds by GC/MS

Units:ug/L Basis:NA

Lab Control Sample

RQ2312626-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Dichlorodifluoromethane (CFC 12)	8260C	15.7	20.0	7 8	59-155
Dichloromethane	8260C	19.2	20.0	96	73-122
Ethylbenzene	8260C	20.5	20.0	103	76-120
Isopropylbenzene (Cumene)	8260C	21.1	20.0	105	77-128
Methyl Acetate	8260C	13.2	20.0	66	61-133
Methyl tert-Butyl Ether	8260C	19.4	20.0	97	75-118
Methylcyclohexane	8260C	19.0	20.0	95	51-129
Styrene	8260C	21.8	20.0	109	80-124
Tetrachloroethene (PCE)	8260C	20.4	20.0	102	72-125
Toluene	8260C	20.4	20.0	102	79-119
Trichloroethene (TCE)	8260C	20.1	20.0	100	74-122
Trichlorofluoromethane (CFC 11)	8260C	18.2	20.0	91	71-136
Vinyl Chloride	8260C	15.9	20.0	79	74-159
cis-1,2-Dichloroethene	8260C	19.5	20.0	97	80-121
cis-1,3-Dichloropropene	8260C	20.9	20.0	105	77-122
m,p-Xylenes	8260C	41.8	40.0	105	80-126
o-Xylene	8260C	21.0	20.0	105	79-123
trans-1,2-Dichloroethene	8260C	20.1	20.0	100	73-118
trans-1,3-Dichloropropene	8260C	21.5	20.0	107	71-133



Semivolatile Organic Compounds by GC/MS

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QA/QC Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01

Sample Matrix: Water

SURROGATE RECOVERY SUMMARY 1,4-Dioxane by GC/MS

Analysis Method: 8270D SIM **Extraction Method:** EPA 3535A

Tetrahydrofuran-d8 (SUR)

Sample Name	Lab Code	64 - 124	
MW-11	R2308533-002	87	
MW-11 MS	RQ2312147-01	93	
MW-11 DMS	RQ2312147-02	84	
Method Blank	RQ2312147-03	88	
Lab Control Sample	RQ2312147-04	69	
Duplicate Lab Control Sample	RQ2312147-05	88	

QA/QC Report

Client: LU Engineers **Service Request:** R2308533 **Project:** Cuba LF/50191-01 **Date Collected:** 09/14/23 **Sample Matrix:** Water **Date Received:** 09/15/23 Date Analyzed: 09/21/23 **Date Extracted:** 09/19/23

Duplicate Matrix Spike Summary 1,4-Dioxane by GC/MS

 Sample Name:
 MW-11
 Units:
 ug/L

 Lab Code:
 R2308533-002
 Basis:
 NA

Analysis Method: 8270D SIM **Prep Method:** EPA 3535A

Matrix SpikeDuplicate Matrix SpikeRQ2312147-01RQ2312147-02

RPD Sample **Spike Spike** % Rec Result % Rec Amount Limits **RPD Analyte Name** Result **Amount** Result % Rec Limit 4.0 32.3 40.0 1,4-Dioxane 36.7 40.0 30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Analytical Report

Client: LU Engineers Service Request: R2308533

Project: Cuba LF/50191-01 Date Collected: NA

Sample Matrix: Water Date Received: NA

Sample Name:Method BlankUnits: ug/LLab Code:RQ2312147-03Basis: NA

1,4-Dioxane by GC/MS

Analysis Method: 8270D SIM

Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed Date Extracted	Q
1,4-Dioxane	0.040 U	0.040	0.027	1	09/21/23 13:26 9/19/23	_

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
Tetrahydrofuran-d8 (SUR)	88	64 - 124	09/21/23 13:26		

QA/QC Report

Client: LU Engineers
Project: Cuba LF/50191-01

Sample Matrix: Water

Service Request: R2308533 Date Analyzed: 09/21/23

Duplicate Lab Control Sample Summary 1,4-Dioxane by GC/MS

> Units:ug/L Basis:NA

Lab Control Sample

Duplicate Lab Control Sample

RQ2312147-04

RQ2312147-05

	Analytical		Spike			Spike		% Rec		RPD
Analyte Name	Method	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
1,4-Dioxane	8270D SIM	6.69	10.0	67	7.76	10.0	78	58-124	15	30



Metals

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Form 3

Blanks

Metals By 7470A, 6010C

Workorder

R2308533

Client

LU Engineers

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Cuba LF

10/04/2023

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Client LU Engineers Workorder

Project Cuba LF R2308533

RCVAA02_817874			I	СВ	C	СВ	С	СВ	CC	СВ	MB-81787	74	CC	СВ
Units		Run Date	09/20/	23	09/20/	23	09/20/	23	09/20/2	23	09/20/2	23	09/20/2	23
ug/L		Run Time	11:	28	13:	25	13:	43	14:0)6	14:0	8(14:2	27
Analyte	DL	LOQ	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Mercury	0.08	0.20	0.08	U	0.08	U	0.08	U	0.08	U	0.52		0.08	U

Q - Result Flag * - Result Outside Limits

RCVAA02_817874			С	СВ
Units		Run Date	09/20/	/23
ug/L		Run Time	14:	:50
Analyte	DL	LOQ	Result	Q
Mercury	0.08	0.20	0.08	U

Q - Result Flag * - Result Outside Limits



Form 3 - Blanks

Client LU Engineers Workorder

Project Cuba LF R2308533

RCVAA02_817875			I	СВ	C	СВ	С	СВ	MB-81787	75	cc	СВ	CC	ЭВ
Units		Run Date	09/20/	23	09/20/	23	09/20/	23	09/20/2	23	09/20/2	23	09/20/2	23
ug/L		Run Time	11:	28	14:	27	14:	50	14:5	52	15:1	12	15:3	34
Analyte	DL	LOQ	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Mercury	0.08	0.20	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U

Q - Result Flag * - Result Outside Limits

RCVAA02_817875			С	СВ	С	СВ	С	СВ
Units		Run Date	09/20/	′23	09/20/	23	09/20/	23
ug/L		Run Time	16:	:03	16:	32	16:	48
Analyte	DL	LOQ	Result	Q	Result	Q	Result	Q
Mercury	0.08	0.20	0.08	U	0.08	U	0.08	U

Q - Result Flag * - Result Outside Limits

ALS

Form 3 - Blanks

Client LU Engineers

Workorder

Project Cuba LF

R2308533

RPAES07_818730			ı	СВ	C	СВ	С	СВ	MB-8187	30	С	СВ	C	СВ
Units		Run Date	09/27/	23	09/28/	23	09/28/	23	09/28/	23	09/28/	23	09/28/	23
ug/L		Run Time	17:	57	00	21	00:	38	00:	41	01:	17	01:	56
Analyte	DL	LOQ	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	30	100	30	U	30	U	30	U	30	U	30	U	30	U
Antimony	11	60	11	U	11	U	11	U	11	U	11	U	11	U
Arsenic	6	10	6	U	6	U	6	U	6	U	6	U	6	U
Barium	3	20	3	U	3	U	3	U	3	U	3	U	3	U
Beryllium	0.2	3.0	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Cadmium	0.4	5.0	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
Calcium	300	1000	300	U	300	U	300	U	300	U	300	U	300	U
Chromium	2	10	2	U	2	U	2	U	2	U	2	U	2	U
Cobalt	0.9	50	0.9	U	0.9	U	0.9	U	0.9	U	0.9	U	0.9	U
Copper	4	20	4	U	4	U	4	U	4	U	4	U	4	U
Iron	70	100	70	U	70	U	70	U	70	U	70	U	70	U
Lead	4	50	4	U	4	U	4	U	4	U	4	U	4	U
Magnesium	30	1000	30	U	30	U	30	U	30	U	30	U	30	U
Manganese	4	10	4	U	4	U	4	U	4	U	4	U	4	U
Nickel	3	40	3	U	3	U	3	U	3	U	3	U	3	U
Potassium	400	2000	400	U	400	U	400	U	400	U	400	U	400	U
Selenium	7	10	7	U	7	U	7	U	7	U	7	U	7	U
Silver	0.6	10	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
Sodium	300	1000	300	U	300	U	300	U	300	U	300	U	300	U
Thallium	8	10	8	U	8	U	8	U	8	U	8	U	8	U
Vanadium	0.7	50	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Zinc	3	20	3	U	3	U	3	U	3	U	3	U	3	U

Q - Result Flag * - Result Outside Limits

ALS

Form 3 - Blanks

Client LU Engineers

Workorder

Project Cuba LF

R2308533

RPAES07_818730			C	СВ	C	СВ
Units		Run Date	09/28/		09/28/	
ug/L		Run Time	02:		02:	
Analyte	DL	LOQ	Result	Q	Result	Q
Aluminum	30	100	30	U	30	U
Antimony	11	60	11	U	11	U
Arsenic	6	10	6	U	6	U
Barium	3	20	3	U	3	U
Beryllium	0.2	3.0	0.2	U	0.2	U
Cadmium	0.4	5.0	0.4	U	0.4	U
Calcium	300	1000	300	U	300	U
Chromium	2	10	2	U	2	U
Cobalt	0.9	50	0.9	U	0.9	U
Copper	4	20	4	U	4	U
Iron	70	100	70	U	70	U
Lead	4	50	4	U	4	U
Magnesium	30	1000	30	U	30	U
Manganese	4	10	4	U	4	U
Nickel	3	40	3	U	3	U
Potassium	400	2000	400	U	400	U
Selenium	7	10	7	U	7	U
Silver	0.6	10	0.6	U	0.6	U
Sodium	300	1000	300	U	300	U
Thallium	8	10	8	U	8	U
Vanadium	0.7	50	0.7	U	0.7	U
Zinc	3	20	3	U	3	U

Q - Result Flag * - Result Outside Limits



Form 5A

Matrix Spike Sample Recovery

Metals By 6010C, 7470A

Workorder

R2308533

Client

LU Engineers

Project

Cuba LF

10/04/2023

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Form 5A - Matrix Spike Sample Recovery

Client LU Engineers Workorder

Project Cuba LF R2308533

RunID

Metals By 6010C, 7470A

RCVAA02-817875

MW-11			R230	8533-002		R2308533	-002M	S	R2308533-	002DN	/IS			
Samp Matrix Water		Run Date	n Date 09/20/23		09/20/	23		09/20/23						
Prep Method Method	Units	Run Time	1	4:58		15:00)		15:0	2				
Prep Batch 426736 09/19/2	3 ug/L	Prep Amt	2	25 mL		25 m	L		25 m	L				
	%R	Spike		Sample		MS			MSD			RPD		
Analyte	Limits	Added	DF	Result	Q	Result	%R	Q	Result	%R	Q	Limit	RPD	Q
Mercury	75-125	1.00	1	0.08	U	0.96	96		1.03	103		20	8	

Q - %Recovery / RPD Flag

^{* - %}Recovery / RPD Outside Limits



Form 5A - Matrix Spike Sample Recovery

Client LU Engineers

Workorder

Project Cuba LF

R2308533

RunID

Metals By 6010C, 7470A

RPAES07-818730

MW-11			R230	8533-002		R2308533	-002M	S	R2308533-	002DI	ИS			
Samp Matrix Water		Run Date	09/	/28/23		09/28/	23		09/28/	23				
Prep Method EPA 3005A/3010A	Units	Run Time	0	0:51		00:54	1		00:5	7				
Prep Batch 427123 09/26/23	ug/L	Prep Amt	5	0 mL		50 ml	L		50 m	L				
Analyte	%R Limits	Spike Added	DF	Sample Result	Q	MS Result	%R	Q	MSD Result	%R	Q	RPD Limit	RPD	Q
Aluminum	75-125	2000	1	840		2470	82		2470	82		20	0	
Antimony	75-125	500	1	11	U	499	100		505	101		20	1	
Arsenic	75-125	40	1	6	U	41	101		41	103		20	1	
Barium	75-125	2000	1	12	J	2000	99		2010	100		20	0	
Beryllium	75-125	50.0	1	0.2	U	48.3	97		48.5	97		20	0	
Cadmium	75-125	50.0	1	0.4	U	49.9	100		50.2	100		20	0	
Calcium	75-125	2000	1	49100		50700	78		51200	104		20	1	
Chromium	75-125	200	1	2	U	199	100		201	100		20	0	
Cobalt	75-125	500	1	0.9	U	492	98		495	99		20	0	
Copper	75-125	250	1	4	U	245	98		246	98		20	0	
Iron	75-125	1000	1	680		1510	83		1500	82		20	0	
Lead	75-125	500	1	4	U	496	99		500	100		20	0	
Magnesium	75-125	2000	1	11200		13000	90		13100	97		20	0	
Manganese	75-125	500	1	84		560	95		563	96		20	0	
Nickel	75-125	500	1	3	U	497	99		502	100		20	0	
Potassium	75-125	20000	1	2100		21400	97		21600	97		20	0	
Selenium	75-125	1010	1	7	U	1020	101		1030	102		20	1	
Silver	75-125	50	1	0.6	U	50	100		50	100		20	0	
Sodium	75-125	20000	1	3400		24000	103		24200	104		20	0	
Thallium	75-125	2000	1	8	U	1970	99		1980	99		20	0	
Vanadium	75-125	500	1	2	J	488	97		491	98		20	0	
Zinc	75-125	500	1	5	J	501	99		507	100		20	1	

Q - %Recovery / RPD Flag * - %Recovery / RPD Outside Limits



Form 7

Laboratory Control Sample

Metals By 6010C, 7470A

Workorder

R2308533

Client

LU Engineers

Project

Cuba LF

10/04/2023

ALS Environmental-Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com



Form 7 - Laboratory Control Sample

Client LU Engineers Workorder

Project Cuba LF R2308533

RunID

RCVAA02-817874

Metals By 6010C, 7470A

RCVAA02_817874			R230853	3-LCS1	
Spike Matrix Water			Run Date	09/20/2	3
Result Units ug/L	Prep Me	thod	Run Time	13:48	
Prep Batch 426729	Metho	od		NA	
Prep Date 09/19/23			Prep Amt	25 mL	
Analyte	%Recovery Limits	Spike Added	LCS Result	%R	Q
Mercury, Total	80-120	1.00	1.04	104	Q
iviercury, rotai	00-120	1.00	1.04	104	

Q - %Recovery / RPD Flag * - %Recovery / RPD Outside Limits %R - %Recovery DF - Dilution Factor Amt - Amount (weight or volume)



Form 7 - Laboratory Control Sample

Client LU Engineers Workorder

Project Cuba LF R2308533

RunID

RCVAA02-817875

Metals By 6010C, 7470A

RCVAA02_817875			R230853	3-LCS2	
Spike Matrix Water			Run Date	09/20/2	3
Result Units ug/L	Prep Me	thod	Run Time	14:54	
Prep Batch 426736	Metho	od		NA	
Prep Date 09/19/23			Prep Amt	25 mL	
	%Recovery	Spike	LCS		
Analyte	Limits	Added	Result	%R	Q
Mercury, Total	80-120	1.00	1.04	104	

Q - %Recovery / RPD Flag * - %Recovery / RPD Outside Limits %R - %Recovery DF - Dilution Factor Amt - Amount (weight or volume)



Form 7 - Laboratory Control Sample

Client LU Engineers Workorder

Project Cuba LF R2308533

RunID

RPAES07-818730

Metals By 6010C, 7470A

motals by correct,			KFAE307-010730
RPAES07_818730		R2308533-LCS1	
Spike Matrix Water Result Units ug/L Prep Batch 427123 Prep Date 09/26/23	Prep Method EPA 3005A/3010A	Run Date 09/28/23 Run Time 00:44 NA Prep Amt 50 mL	
Analyte	%Recovery Spike Limits Added	LCS Result %R (Ω
Aluminum, Total	80-120 2000	1920 96	
Antimony, Total	80-120 500	493 99	
Arsenic, Total	80-120 40	39.8 100	
Barium, Total	80-120 2000	2010 101	
Beryllium, Total	80-120 50.0	48.0 96	
Cadmium, Total	80-120 50.0	51.1 102	
Calcium, Total	80-120 2000	1990 100	
Chromium, Total	80-120 200	200 100	
Cobalt, Total	80-120 500	502 100	
Copper, Total	80-120 250	247 99	
Iron, Total	80-120 1000	1000 100	
Lead, Total	80-120 500	508 102	
Magnesium, Total	80-120 2000	1960 98	
Manganese, Total	80-120 500	490 98	
Nickel, Total	80-120 500	514 103	
Potassium, Total	80-120 20000	19000 95	
Selenium, Total	80-120 1010	1010 100	
Silver, Total	80-120 50	49.8 100	
Sodium, Total	80-120 20000	20500 102	
Thallium, Total	80-120 2000	2000 100	
Vanadium, Total	80-120 500	486 97	
Zinc, Total	80-120 500	504 101	

 $Q-\% Recovery / RPD \ Flag \ *-\% Recovery / RPD \ Outside \ Limits \ \% R-\% Recovery \ DF-Dilution \ Factor \ Amt-Amount (weight or volume)$



Subcontracted Analytical Parameters

ALS Environmental—Rochester Laboratory 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 Phone (585) 288-5380 Fax (585) 288-8475 www.alsglobal.com



04-Oct-2023

Janice Jaeger
ALS Environmental
1565 Jefferson Rd
Bldg 300
Rochester, NY 14623

Re: **R2308533** Work Order: **23091636**

Dear Janice,

ALS Environmental received 1 sample on 19-Sep-2023 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 17.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Electronically approved by: Chelsey Cook

Chelsey Cook Project Manager

Report of Laboratory Analysis

Certificate No: NY: 12128

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group, USA

Date: 04-Oct-23

Client: ALS Environmental

Project: R2308533 Work Order Sample Summary Work Order: 23091636

<u>Lab Samp ID Client Sample ID Matrix Tag Number Collection Date Date Received Hold</u>

23091636-01 MW-11 Water 9/14/2023 09:25 9/19/2023 09:00

ALS Group, USA

Date: 04-Oct-23

Client: ALS Environmental QUALIFIERS,

Project: R2308533
WorkOrder: 23091636

R2308533

ACRONYMS, UNITS

Qualifier **Description** Value exceeds Regulatory Limit ** Estimated Value a Analyte is non-accredited B Analyte detected in the associated Method Blank above the Reporting Limit Е Value above quantitation range Н Analyzed outside of Holding Time Hr BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated. Analyte is present at an estimated concentration between the MDL and Report Limit J Analyte accreditation is not offered n ND Not Detected at the Reporting Limit O Sample amount is > 4 times amount spiked P Dual Column results percent difference > 40% R RPD above laboratory control limit S Spike Recovery outside laboratory control limits U Analyzed but not detected above the MDL X Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level. Acronym Description Method Duplicate DUP LCS Laboratory Control Sample LCSD Laboratory Control Sample Duplicate LOD Limit of Detection (see MDL) LOQ Limit of Quantitation (see PQL) MBLK Method Blank MDL Method Detection Limit MS Matrix Spike MSD Matrix Spike Duplicate **PQL** Practical Quantitation Limit RPD Relative Percent Difference TDL Target Detection Limit TNTC Too Numerous To Count APHA Standard Methods A ASTM D Е EPA SW SW-846 Update III

Units Reported Description

ng/L Nanograms per Liter

ALS Group, USA

Client: ALS Environmental

Project: R2308533 Case Narrative Work Order: 23091636

Samples for the above noted Work Order were received on 09/19/2023. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Extractable Organics:

Batch 224901, Method E537 Mod, Sample 23091636-01A MSD: EIS03: The extracted internal standard response was outside recovery criteria with low bias; sample results may exhibit bias.: 13C-PFTeDA IS, d7-N-MeFOSE IS.

Batch 224901, Method E537 Mod, Sample 23091636-01A MSD: EIS03: The extracted internal standard response was outside recovery criteria with low bias; sample results may exhibit bias.: d5-NEtFOSA_IS, d9-EtFOSE_IS, d3-NMeFOSA_IS, 13C2-PFHxDA_IS.

Batch 224901, Method E537 Mod, Sample MW-11 (23091636-01A): The extracted internal standard response was outside recovery criteria with low bias; sample results may exhibit bias. 13C-PFTeDA_IS.

Batch 224901, Method E537 Mod, Sample 23091636-01A MS: The extracted internal standard response was outside recovery criteria with low bias; sample results may exhibit bias. 13C-PFTeDA_IS, d7-N-MeFOSE_IS, 13C-PFDoA_IS, d5-NEtFOSA_IS, d9-EtFOSE_IS, d3-NMeFOSA_IS, 13C2-PFHxDA_IS.

Batch 224901, Method E537 Mod, Sample MW-11 (23091636-01A): One or more surrogate recoveries were below the lower control limits. The sample results may be biased low. 13C2-PFDoA, 13C2-PFTeA, d3-N-MeFOSA, d5-N-EtFOSA, d7-N-MeFOSE, d9-N-EtFOSE.

Batch 224901, Method E537 Mod, Sample 23091636-01A MS: The MS recovery was below

Client: ALS Environmental

Project: R2308533 Case Narrative

Work Order: 23091636

the lower control limit. The corresponding result in the parent sample may be biased low for this analyte: 13C2-PFTeA, PFDoS, 13C2-PFHxDA, d3-N-MeFOSA, d5-N-EtFOSA, d9-N-EtFOSE.

Batch 224901, Method E537 Mod, Sample 23091636-01A MSD: The MSD recovery was below the lower control limit. The corresponding result in the parent sample may be biased low for this analyte: 13C2-PFTeA, PFDoS, PFHpA, PFHxA, PFOA, PFPeA, d3-N-MeFOSA, d5-N-EtFOSA, d9-N-EtFOSE

Batch 224901, Method E537 Mod, Sample 23091636-01A MSD: The RPD between the MS and MSD was outside of the control limit. The corresponding result should be considered estimated for this compound: 13C2-PFTeA, PFHpA, PFHxA, PFOA, PFPeA, 13C2-PFHxDA.

Batch 224901, Method E537 Mod, Samples MW-11 (23091636-01A, -01A MS, -01A MSD): Heavy sediment in sample. Sample spiked in bottle and poured into 250 mL HDPE.

No other deviations or anomalies were noted.

ALS Group, USA

Client: ALS Environmental

 Project:
 R2308533
 Work Order:
 23091636

 Sample ID:
 MW-11
 Lab ID:
 23091636-01

 Collection Date:
 9/14/2023 09:25 AM
 Matrix:
 WATER

Report **Dilution Date Analyzed** Limit **Analyses** Result Qual **MDL Factor** Units **PFAS BY EPA 537 MODIFIED** Method: E537 MOD Prep: E537 Mod / 9/22/23 Analyst: MNM Fluorotelomer Sulphonic Acid 6:2 (FtS ND 9/26/2023 19:27 5.2 ng/L Fluorotelomer Sulphonic Acid 8:2 (FtS ND 1.2 5.2 ng/L 1 9/26/2023 19:27 8:2) ND Perfluorobutanesulfonic Acid (PFBS) 0.37 5.2 ng/L 1 9/26/2023 19:27 Perfluorobutanoic Acid (PFBA) ND 2.7 5.2 ng/L 1 9/26/2023 19:27 Perfluorodecanesulfonic Acid (PFDS) ND 1.4 5.2 ng/L 1 9/26/2023 19:27 Perfluorodecanoic Acid (PFDA) ND 1.3 5.2 ng/L 1 9/26/2023 19:27 Perfluorododecanoic Acid (PFDoA) ND 0.72 5.2 ng/L 9/26/2023 19:27 Perfluoroheptanesulfonic Acid (PFHpS) ND 0.59 5.2 ng/L 1 9/26/2023 19:27 ND Perfluoroheptanoic Acid (PFHpA) 1.8 5.2 ng/L 1 9/26/2023 19:27 Perfluorohexanesulfonic Acid (PFHxS) ND 0.94 5.2 ng/L 1 9/26/2023 19:27 Perfluorohexanoic Acid (PFHxA) ND 1.2 5.2 ng/L 1 9/26/2023 19:27 Perfluorononanoic Acid (PFNA) ND 0.90 5.2 ng/L 1 9/26/2023 19:27 Perfluorooctanesulfonamide (PFOSA) ND 0.74 5.2 ng/L 9/26/2023 19:27 1 Perfluorooctanesulfonic Acid (PFOS) 25 0.93 9/26/2023 19:27 2.1 ng/L 1 9/26/2023 19:27 Perfluorooctanoic Acid (PFOA) 9.3 0.66 2.1 ng/L ND 5.2 9/26/2023 19:27 Perfluoropentanoic Acid (PFPeA) 1.3 ng/L 1 Perfluorotetradecanoic Acid (PFTeA) ND 2.7 5.2 ng/L 1 9/26/2023 19:27 ND Perfluorotridecanoic Acid (PFTriA) 2.0 5.2 ng/L 1 9/26/2023 19:27 Perfluoroundecanoic Acid (PFUnA) ND 1.0 5.2 ng/L 1 9/26/2023 19:27 ND 5.2 1.6 ng/L 1 9/26/2023 19:27 Ethylperfluorooctanesulfonamidoacetic Acid ND 0.67 5.2 1 9/26/2023 19:27 ng/L Methylperfluorooctanesulfonamidoaceti Surr: 13C2-FtS 6:2 146 50-150 %REC 1 9/26/2023 19:27 50-150 %REC Surr: 13C2-FtS 8:2 81.1 1 9/26/2023 19:27 Surr: 13C2-PFDA 72.4 50-150 %REC 9/26/2023 19:27 1 Surr: 13C2-PFDoA 46.4 S 50-150 %REC 1 9/26/2023 19:27 Surr: 13C2-PFHxA 76.0 50-150 %REC 9/26/2023 19:27 1 Surr: 13C2-PFTeA 17.6 S 50-150 %REC 9/26/2023 19:27 Surr: 13C2-PFUnA 64 1 50-150 %REC 1 9/26/2023 19:27 Surr: 13C3-HFPO-DA 77.4 50-150 %REC 9/26/2023 19:27 1 Surr: 13C3-PFBS 75.6 50-150 %REC 1 9/26/2023 19:27 Surr: 13C4-PFBA 50-150 %REC 75.1 1 9/26/2023 19:27 Surr: 13C4-PFHpA 78.3 50-150 %REC 9/26/2023 19:27 1 Surr: 13C4-PFOA 84.0 50-150 %REC 1 9/26/2023 19:27 Surr: 13C4-PFOS 72 1 50-150 %REC 9/26/2023 19:27

Note: See Qualifiers page for a list of qualifiers and their definitions.

Date: 04-Oct-23

ALS Group, USA

Client: ALS Environmental

 Project:
 R2308533
 Work Order: 23091636

 Sample ID:
 MW-11
 Lab ID: 23091636-01

Collection Date: 9/14/2023 09:25 AM Matrix: WATER

Analyses	Result (Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 13C5-PFNA	75.3			50-150	%REC	1	9/26/2023 19:27
Surr: 13C5-PFPeA	77.0			50-150	%REC	1	9/26/2023 19:27
Surr: 13C8-FOSA	63.3			50-150	%REC	1	9/26/2023 19:27
Surr: 1802-PFHxS	75.1			50-150	%REC	1	9/26/2023 19:27
Surr: d5-N-EtFOSA	22.1	S		50-150	%REC	1	9/26/2023 19:27
Surr: d5-N-EtFOSAA	58.5			50-150	%REC	1	9/26/2023 19:27
Surr: d9-N-EtFOSE	25.3	S		50-150	%REC	1	9/26/2023 19:27
Surr: d3-N-MeFOSA	29.2	S		50-150	%REC	1	9/26/2023 19:27
Surr: d3-N-MeFOSAA	62.5			50-150	%REC	1	9/26/2023 19:27
Surr: d7-N-MeFOSE	34.8	S		50-150	%REC	1	9/26/2023 19:27

Date: 04-Oct-23

Note: See Qualifiers page for a list of qualifiers and their definitions.

Date: 04-Oct-23 ALS Environmental **Client:** QC BATCH REPORT

Work Order: 23091636 **Project:** R2308533

Batch ID: 224901 Instrument ID I CMS1 Method: **F537 Mod**

Batch ID: 224901	Instrument ID LCMS	61	ľ	Method:	E537 Mod							
MBLK Samp	ole ID: MBLK-224901	1-224901		Units: ng/L				Analysis Date: 9/23/2023 06:59 PM				
Client ID:		Run ID: LCM	S1_2309	22B	Seq	No: 100 1	17555	Prep Date: 9/22	/2023	DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Fluorotelomer Sulphonic Ac		1.9	5.0									
Fluorotelomer Sulphonic Ac		1.1	5.0									
Perfluorobutanesulfonic Acid		0.35	5.0									
Perfluorobutanoic Acid (PFE	•	2.6	5.0									
Perfluorodecanesulfonic Aci	-	1.4	5.0									
Perfluorodecanoic Acid (PFI		1.2	5.0									
Perfluorododecanoic Acid (F		0.69	5.0									
Perfluoroheptanesulfonic Ac		0.57	5.0									
Perfluoroheptanoic Acid (PF		1.7	5.0									
Perfluorohexanesulfonic Aci		0.9	5.0									
Perfluorohexanoic Acid (PFI		1.2	5.0									
Perfluorononanoic Acid (PFI		0.87	5.0									
Perfluorooctanesulfonamide		0.71	5.0									
Perfluorooctanesulfonic Acid	•	0.89	2.0									
Perfluorooctanoic Acid (PFC	`	0.63	2.0								J	
Perfluoropentanoic Acid (PF		1.3	5.0								0	
Perfluorotetradecanoic Acid		2.6	5.0									
Perfluorotridecanoic Acid (P	•	1.9	5.0									
Perfluoroundecanoic Acid (F		0.97	5.0									
N-Ethylperfluorooctanesulfo		1.5	5.0									
N-Methylperfluorooctanesult		0.64	5.0									
Surr: 13C2-FtS 6:2				150	0	101	E0 1E0	0				
Surr: 13C2-FtS 8:2	188.8 179	0	0	152 153.3	0	124	50-150					
Surr: 13C2-PFDA		0	0		0	117	50-150					
Surr: 13C2-PFDoA	183.3	0	0	160	0	115	50-150					
	166.7	0	0	160	0	104	50-150					
Surr: 13C2-PFHxA Surr: 13C2-PFTeA	184.1	0	0	160	0	115	50-150					
	182.7	0	0	160	0	114	50-150					
Surr: 13C2-PFUnA Surr: 13C3-HFPO-DA	179.4	0	0	160	0	112	50-150					
	189.4	0	0	160	0	118	50-150					
Surr: 13C3-PFBS	174.4	0	0	148.8	0	117	50-150					
Surr: 13C4-PFBA	175.7	0	0	160	0	110	50-150					
Surr: 13C4-PFHpA	190	0	0	160	0	119	50-150					
Surr: 13C4-PFOA	196.9	0	0	160	0	123	50-150					
Surr: 13C4-PFOS	171.6	0	0	152.8	0	112	50-150					
Surr: 13C5-PFNA	186.4	0	0	160	0	117	50-150					
Surr: 13C5-PFPeA	188.7	0	0	160	0	118	50-150					
Surr: 13C8-FOSA	177.1	0	0	160	0	111	50-150					
Surr: 1802-PFHxS	172.6	0	0	151.2	0	114	50-150					
Surr: d5-N-EtFOSA	143.2	0	0	160	0	89.5	50-150	0				
Surr: d5-N-EtFOSAA	167.3	0	0	160	0	105	50-150	0				
Surr: d9-N-EtFOSE	176.7	0	0	160	0	110	50-150	0				

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC Page: 1 of 7

Client: ALS Environmental

Work Order: 23091636 **Project:** R2308533

Ω	DA'	TCU	DFD	ODT
Ųυ	DA	\mathbf{I}	KLI	ORT

Batch ID: 224901	Instrument ID LCMS1		M	ethod:	E537 Mod			
Surr: d3-N-MeFOSA	145.2	0	0	160	0	90.7	50-150	0
Surr: d3-N-MeFOSAA	176.6	0	0	160	0	110	50-150	0
Surr: d7-N-MeFOSE	171.3	0	0	160	0	107	50-150	0

See Qualifiers Page for a list of Qualifiers and their explanation.

Note:

QC BATCH REPORT

Client: ALS Environmental

Work Order: 23091636 **Project:** R2308533

Batch ID: 224901 Instrument ID LCMS1 Method: E537 Mod

LCS Sample ID: I	_CS-224901-2	224901			Ur	nits: ng/L		Analysis Date: 9/23/2023 07:26 PM			
Client ID:		Run ID: LCM	IS1_230	922B	Seq	No: 1001	7556	Prep Date: 9/22/2	2023	DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	32.68	1.9	5.0	30.3	0	108	66-151	0			
Fluorotelomer Sulphonic Acid	31.07	1.1	5.0	30.7	0	101	71-148	0			
Perfluorobutanesulfonic Acid (24.43	0.35	5.0	28.3	0	86.3	69-131	0			
Perfluorobutanoic Acid (PFBA	32.96	2.6	5.0	32	0	103	73-139	0			
Perfluorodecanesulfonic Acid (29.64	1.4	5.0	30.8	0	96.2	64-128	0			
Perfluorodecanoic Acid (PFDA	28.02	1.2	5.0	32	0	87.6	77-135	0			
Perfluorododecanoic Acid (PF	30.15	0.69	5.0	32	0	94.2	77-137	0			
Perfluoroheptanesulfonic Acid	30.03	0.57	5.0	30.5	0	98.5	70-137	0			
Perfluoroheptanoic Acid (PFH)	27.48	1.7	5.0	32	0	85.9	72-130	0			
Perfluorohexanesulfonic Acid (27.44	0.9	5.0	29.1	0	94.3	68-131	0			
Perfluorohexanoic Acid (PFHx	31.11	1.2	5.0	32	0	97.2	72-129	0			
Perfluorononanoic Acid (PFNA	31.19	0.87	5.0	32	0	97.5	79-131	0			
Perfluorooctanesulfonamide (F	31.24	0.71	5.0	32	0	97.6	66-140	0			
Perfluorooctanesulfonic Acid (30.61	0.89	2.0	29.7	0	103	72-133				
Perfluorooctanoic Acid (PFOA	30.2	0.63	2.0	32	0	94.4	71-133	0			
Perfluoropentanoic Acid (PFP	29.8	1.3	5.0	32	0	93.1	72-129	0			
Perfluorotetradecanoic Acid (F	30.12	2.6	5.0	32	0	94.1	62-139	0			
Perfluorotridecanoic Acid (PF1	33.94	1.9	5.0	32	0	106	63-147	0			
Perfluoroundecanoic Acid (PF	29.71	0.97	5.0	32	0	92.8	80-135				
N-Ethylperfluorooctanesulfona	32.87	1.5	5.0	32	0	103	67-140	0			
N-Methylperfluorooctanesulfor	29.32	0.64	5.0	32	0	91.6	75-133	0			
Surr: 13C2-FtS 6:2	195.2	0.04	0.0	152	0	128	50-150				
Surr: 13C2-FtS 8:2	191.2	0	0		0	125	50-150	0			
Surr: 13C2-PFDA	198.4	0	0		0	124	50-150				
Surr: 13C2-PFDoA	195.1	0	0	160	0	122	50-150				
Surr: 13C2-PFHxA	196.2	0	0	160	0	123	50-150				
Surr: 13C2-PFTeA	187.1	0	0		0	117	50-150				
Surr: 13C2-PFUnA	198.3	0	0		0	124	50-150				
Surr: 13C3-HFPO-DA	201	0	0	160	0	126	50-150				
Surr: 13C3-PFBS	187.3	0	0	148.8	0	126	50-150				
Surr: 13C4-PFBA		0	0		0		50-150	-			
Surr: 13C4-PFHpA	189.1 215.5	0	0	160 160	0	118 135	50-150				
Surr: 13C4-PFOA	209.1	0	0	160		131					
Surr: 13C4-PFOS	176.5		0		0	115	50-150 50-150				
Surr: 13C5-PFNA		0			0						
Surr: 13C5-PFPeA	195.5	0	0		0	122	50-150				
Surr: 13C8-FOSA	199.7		0		0	125	50-150				
Surr: 1802-PFHxS	190.5	0	0	160	0	119	50-150				
Surr: 1802-PFHXS Surr: d5-N-EtFOSA	190.8	0	0		0	126	50-150				
	158.6	0	0	160	0	99.1	50-150				
Surr: do N. EtFOSE	187.8	0	0		0	117	50-150				
Surr: d9-N-EtFOSE Surr: d3-N-MeFOSA	189	0	0	160	0	118	50-150				
SUIT O SINEMIELUSA	160.4	0	0	160	0	100	50-150	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ALS Environmental

Work Order: 23091636 **Project:** R2308533

QC BATCH REPORT

Batch ID: 224901	Instrument ID LCMS1		М	ethod:	E537 Mod				
Surr: d7-N-MeFOSE	188.4	0	0	160	0	118	50-150	0	

MS Sam	nple ID: 23091636-0	Ur	nits: ng/L		Analysis	s Date:	9/24/2023 0	8:31 AN			
Client ID: MW-11		Run ID: LCN	IS1_2309	922B	Seq	No: 1001	7563	Prep Date: 9/22	/2023	DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorotetradecanoic Aci	d (F 29.27	2.8	5.4	34.46	0.3761	83.8	62-139	0			
Perfluorotridecanoic Acid (PFT 50.08	2.1	5.4	34.46	0	145	63-147	0			
Surr: 13C2-PFTeA	28.85	0	0	172.3	0	16.7	50-150	0			S
Surr: d7-N-MeFOSE	71.53	0	0	172.3	0	41.5	50-150	0			S

Note:

QC BATCH REPORT

Client: ALS Environmental

Work Order: 23091636 **Project:** R2308533

Batch ID: 224901 Instrument ID LCMS1 Method: E537 Mod

MS S	ample ID: 23091 6	636-01	A MS			Ur	nits: ng/L		Analysis	Date: 9/	26/2023 0	7:00 PN
Client ID: MW-11			Run ID: LCM	S1_230	926A	Seq	No: 1002	1594	Prep Date: 9/22/	2023	DF: 1	
						SPK Ref		Control	RPD Ref		RPD	
Analyte	R	esult	MDL	PQL	SPK Val	Value	%REC	Limit	Value	%RPD	Limit	Qual
Fluorotelomer Sulphonic	Acid 3	32.83	2.1	5.4	32.63	0	101	66-151	0			
Fluorotelomer Sulphonic	Acid :	29.5	1.2	5.4	33.06	0	89.2	71-148	0			
Perfluorobutanesulfonic	Acid (30.1	0.38	5.4	30.48	0.4293	97.4	69-131	0			
Perfluorobutanoic Acid ([PFBA] 4	15.13	2.8	5.4	34.46	4.642	117	73-139	0			
Perfluorodecanesulfonio	Acid (2	22.81	1.5	5.4	33.17	0	68.8	64-128	0			
Perfluorodecanoic Acid	(PFDA 3	89.84	1.3	5.4	34.46	0.4593	114	77-135	0			
Perfluorododecanoic Ac	id (PFI 3	86.71	0.74	5.4	34.46	0	107	77-137	0			
Perfluoroheptanesulfoni	c Acid 3	88.73	0.61	5.4	32.85	0	118	70-137	0			
Perfluoroheptanoic Acid	(PFH _i 3	34.17	1.9	5.4	34.46	1.904	93.6	72-130	0			
Perfluorohexanesulfonio	Acid (3.99	0.97	5.4	31.34	1.125	105	68-131	0			
Perfluorohexanoic Acid	(PFHx 3	88.05	1.3	5.4	34.46	1.544	106	72-129	0			
Perfluorononanoic Acid	(PFNA 3	86.09	0.94	5.4	34.46	0.9551	102	79-131	0			
Perfluorooctanesulfonar	nide (F 3	35.56	0.77	5.4	34.46	1.368	99.2	66-140	0			
Perfluorooctanesulfonic	Acid (I 5	3.53	0.96	2.2	31.99	25.3	88.3	72-133	0			
Perfluorooctanoic Acid (PFOA 4	10.15	0.68	2.2	34.46	9.338	89.4	71-133	0			
Perfluoropentanoic Acid	(PFPe 3	32.87	1.4	5.4	34.46	1.857	90	72-129	0			
Perfluoroundecanoic Ac	id (PFI 3	37.56	1	5.4	34.46	0	109	80-135	0			
N-Ethylperfluorooctanes	sulfona 3	86.86	1.7	5.4	34.46	1.055	104	67-140	0			
N-Methylperfluorooctane	esulfor 3	36.13	0.69	5.4	34.46	0.4326	104	75-133	0			
Surr: 13C2-FtS 6:2	1	160.4	0	0	163.7	0	98	50-150	0			
Surr: 13C2-FtS 8:2	1	122.6	0	0	165.1	0	74.2	50-150	0			
Surr: 13C2-PFDA	1	111.8	0	0	172.3	0	64.9	50-150	0			
Surr: 13C2-PFDoA	7	72.94	0	0	172.3	0	42.3	50-150	0			S
Surr: 13C2-PFHxA		119	0	0	172.3	0	69.1	50-150	0			
Surr: 13C2-PFUnA	1	100.4	0	0	172.3	0	58.2	50-150	0			
Surr: 13C3-HFPO-DA	1	129.4	0	0	172.3	0	75.1	50-150	0			
Surr: 13C3-PFBS		124	0	0	160.3	0	77.4	50-150	0			
Surr: 13C4-PFBA	1	125.2	0	0	172.3	0	72.6	50-150	0			
Surr: 13C4-PFHpA		131	0	0	172.3	0	76	50-150	0			
Surr: 13C4-PFOA	1	125.7	0	0	172.3	0	72.9	50-150	0			
Surr: 13C4-PFOS	1	109.6	0	0	164.6	0	66.6	50-150	0			
Surr: 13C5-PFNA	1	122.3	0	0	172.3	0	71	50-150	0			
Surr: 13C5-PFPeA	1	131.2	0	0	172.3	0	76.1	50-150	0			
Surr: 13C8-FOSA	1	109.6	0	0	172.3	0	63.6	50-150	0			
Surr: 1802-PFHxS	1	109.5	0	0		0	67.3	50-150				
Surr: d5-N-EtFOSA	3	39.33	0	0	172.3	0	22.8	50-150	0			S
Surr: d5-N-EtFOSAA		101.1	0	0		0	58.7	50-150				
Surr: d9-N-EtFOSE		17.21	0	0		0	27.4	50-150				S
Surr: d3-N-MeFOSA		53.08	0	0		0	30.8	50-150				S
Surr: d3-N-MeFOSAA		101.3	0	0		0	58.8	50-150				

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ALS Environmental

Work Order: 23091636 **Project:** R2308533

QC BATCH REPORT

Batch ID: 224901	Instrument ID LCMS1	Method:	E537 Mod
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MSD Sample ID	: 23091636-01	A MSD			Ur	nits: ng/L		Analysis	s Date: 9	/24/2023 08	8:44 AM
Client ID: MW-11		Run ID: LCM	S1_230	922B	Seq	No: 1001	7564	Prep Date: 9/22/	2023	DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorotetradecanoic Acid (F	29.49	2.7	5.1	32.56	0.3761	89.4	62-139	29.27	0.734	4 30	
Perfluorotridecanoic Acid (PF1	41.06	2	5.1	32.56	0	126	63-147	50.08	19.8	3 30	
Surr: 13C2-PFTeA	54.11	0	0	162.8	0	33.2	50-150	28.85	60.9	9 30	SR
Surr: d7-N-MeFOSE	88.59	0	0	162.8	0	54.4	50-150	71.53	21.3	3 30	

Note:

QC BATCH REPORT

Client: ALS Environmental

Work Order: 23091636 **Project:** R2308533

Batch ID: 224901 Instrument ID LCMS1 Method: E537 Mod

MSD	Sample ID: 2	23091636-01	A MSD			Ur	nits: ng/L		Analysis	Date: 9/	26/2023 0	7:14 PI
Client ID: MW-11			Run ID: LCM	S1_2309	926A	Seq	No: 1002	1595	Prep Date: 9/22/	2023	DF: 1	
Analyte		Result	MDL	P∩I	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulpho	nic Acid	32.64	2	5.1	30.83	0	106	66-151	32.83	0.598	30	Quai
Fluorotelomer Sulpho		29.61	1.1	5.1	31.24	0	94.8	71-148	29.5	0.356	30	
Perfluorobutanesulfor		29.77	0.36	5.1	28.8	0.4293	102	69-131	30.1	1.12	30	
Perfluorobutanoic Ac	`	41.16	2.6	5.1	32.56	4.642	112	73-139	45.13	9.2	30	
Perfluorodecanesulfo	, ,	23.06	1.4	5.1	31.34	4.042	73.6	64-128	22.81	1.12	30	
Perfluorodecanoic Ac		35.05	1.3	5.1	32.56	0.4593	106	77-135	39.84	12.8	30	
Perfluorododecanoic	•	32.45	0.7	5.1	32.56	0.4393	99.7	77-137	36.71	12.3	30	
Perfluoroheptanesulfe	•	33.06	0.58	5.1	31.04	0	107	70-137	38.73	15.8	30	
Perfluoroheptanoic A		120.6	1.8	5.1	32.56	1.904	364	72-130	34.17	112	30	SR
Perfluorohexanesulfo		29.13	0.92	5.1	29.61	1.125	94.6	68-131	33.99	15.4	30	SIX
Perfluorohexanoic Ac		66.62	1.2	5.1	32.56	1.123	200	72-129	38.05	54.6	30	SR
Perfluorononanoic Ad	•	30.97	0.89	5.1	32.56	0.9551	92.2	79-131	36.09	15.3	30	Six
Perfluorooctanesulfor	`	30.68	0.09	5.1	32.56	1.368	90	66-140	35.56	14.7	30	
Perfluorooctanesulfor		45.27	0.72	2.0	30.22	25.3	66.1	72-133	53.53	16.7	30	s
Perfluorooctanoic Aci	` `	487.9	0.64	2.0	32.56	9.338	1470	71-133	40.15	170	30	SR
Perfluoropentanoic A	•	57.53	1.3	5.1	32.56	1.857	171	72-129	32.87	54.5	30	SR
Perfluoroundecanoic		32.74	0.99	5.1	32.56	0	101	80-135	37.56	13.7	30	SIX
N-Ethylperfluorooctar	•	34.18	1.6	5.1	32.56	1.055	101	67-140	36.86	7.55	30	
N-Methylperfluorooct		33.95	0.66	5.1	32.56	0.4326	103	75-133	36.13	6.24	30	
Surr: 13C2-FtS 6:2		151.5	0.00	0	154.7	0.4320	97.9	50-150	160.4	5.69	30	
Surr: 13C2-FtS 8:2		118.6	0	0	156	0	76	50-150	122.6	3.29	30	
Surr: 13C2-PFDA	-	122.7	0	0	162.8	0	75.4	50-150		9.29	30	
Surr: 13C2-PFDoA		87.11	0	0	162.8	0	53.5	50-150	72.94	17.7	30	
Surr: 13C2-PFHxA		125.6	0	0	162.8	0	77.1	50-150	119	5.35	30	
Surr: 13C2-PFUnA		109.4	0	0	162.8	0	67.2	50-150	100.4	8.57	30	
Surr: 13C3-HFPO-		125.9	0	0	162.8	0	77.4	50-150	129.4	2.71	30	
Surr: 13C3-PFBS		118	0	0	151.4	0	77.9	50-150	124	4.95	30	
Surr: 13C4-PFBA		125.5	0	0	162.8	0	77.1	50-150	125.2	0.263	30	
Surr: 13C4-PFHpA	1	128.4	0	0	162.8	0	78.8	50-150	131	2.04	30	
Surr: 13C4-PFOA		127.8	0	0	162.8	0	78.5	50-150	125.7	1.63	30	
Surr: 13C4-PFOS		121.5	0		155.5	0	78.2	50-150	109.6	10.3	30	
Surr: 13C5-PFNA		137.7	0	0	162.8	0	84.6	50-150		11.8	30	
Surr: 13C5-PFPeA	<u> </u>	128.3	0	0	162.8	0	78.8	50-150	131.2	2.23	30	
Surr: 13C8-FOSA		117.8	0	0	162.8	0	72.4	50-150		7.25	30	
Surr: 1802-PFHxS	3	120.1	0	0	153.9	0	78.1	50-150		9.23	30	
Surr: d5-N-EtFOSA		45.61	0	0	162.8	0	28	50-150		14.8	30	s
Surr: d5-N-EtFOSA		96.58	0	0	162.8	0	59.3	50-150	101.1	4.59	30	
Surr: d9-N-EtFOSE		46.43	0	0	162.8	0	28.5	50-150		1.67	30	s
Surr: d3-N-MeFOS		60.61	0	0	162.8	0	37.2	50-150		13.2		S
Surr: d3-N-MeFOS		99.59	0	0	162.8	0	61.2			1.71	30	J

The following samples were analyzed in this batch:

23091636-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental Chain of Custody
1565 Jefferson Rd, Building 300 · Rochester, NY 14623 · 585-288-5380 · FAX 585-288-8475

Project Manager: Lab Code Sample ID LAB QAP Janice Jaeger

R2308533-002

MW-11

of Cont.

Matrix Water

6

QAP:

Project Number:

R2308533

9/14/23 Time 0925 Holland ALS Lab ID PFAS PFC/537M

1421

(con psy not)

23091636



Special Instructions/Comments mysolic equis v4 redd

P - Test is Authorized for Prep Only

H - Test is On Hold

Relinquished By:

2 1445 Received By:

Requested FAX Date: STANDARD

IV. Data Validation Report with Raw Data

Bill to

III. Results + QC and Calibration Summaries

PO#

58R2308533

PLEASE CIRCLE WORK DAYS

II. Results + QC Summaries

I. Results Only

Report Requirements

Invoice Information

Turnaround Requirements RUSH (Surcharges Apply)

PQL/MDL/J

Requested Report Date:

10/04/23

ALS Contact: Janice Jaeger

Comments:		PC LINE Date 9/18/23 SMO SES Date 9/18/23	Ship To: Holland ALS ALS Laboratory Group 3352 128th Avenue Holland, MI 49424
		No Ice Bill to Client Account	Instructions: Ice Dry Ice
		Ground	Shipping: Overnight 2nd Day

ALS Group USA, Corp. www.alsglobal.com
An ALS Limited Company

Page 102 of 103

ALS Group, USA Holland, Michigan

Client Name: ALS - ROCHESTER

Sample Receipt Checklist

Date/Time Received:

19-Sep-23 09:00

Work Order:	23091636	<u> </u>				Received by	y: <u>J</u>	<u>D</u>		
Checklist comple		Jason Delinger		19-Sep-23	<u> </u>	Reviewed by:	Jodi Blouv	N		19-Sep-23
Matrices: Carrier name:	<u>Water</u> <u>FedEx</u>	ngnature		Date			coignature			Date
Shipping contair	ner/cooler	in good condition?		Yes	✓	No 🗌	Not Present	t 🗆		
Custody seals ir	ntact on sh	ipping container/coole	r?	Yes	✓	No 🗌	Not Present	t 🗌		
Custody seals ir	ntact on sa	imple bottles?		Yes		No 🗌	Not Present	t 🗸		
Chain of custody	y present?			Yes	✓	No 🗌				
Chain of custody	y signed w	hen relinquished and	received?	Yes	✓	No 🗌				
Chain of custody	y agrees w	ith sample labels?		Yes	✓	No 🗌				
Samples in prop	oer contain	er/bottle?		Yes	✓	No 🗌				
Sample containe	ers intact?			Yes	✓	No 🗌				
Sufficient sample	le volume t	for indicated test?		Yes	✓	No 🗌				
All samples rece	eived withi	n holding time?		Yes	✓	No 🗌				
Container/Temp	Blank ten	nperature in complianc	e?	Yes	✓	No 🗌				
Sample(s) recei [,] Temperature(s)/				Yes 3.0/4.0		No 🗌	IR3]	
Cooler(s)/Kit(s):		(-)-								
Date/Time samp	ple(s) sent	to storage:		9/19/20	023 1	12:38:32 PM				
Water - VOA via	als have ze	ero headspace?		Yes			No VOA vials s	ubmitted	✓	
Water - pH acce	eptable upo	on receipt?		Yes			N/A			
pH adjusted? pH adjusted by:				Yes -		No L	N/A 🗸			
Login Notes:										
====	===	======	====:	====	==	====	====	===	===:	=====
Client Contacted	d:		Date Contacted	l:		Person	Contacted:			
Contacted By:			Regarding:							
Comments:										
CorrectiveAction	n:								SRO	C Page 1 of 1

Appendix D

Site Inspection Form

SITE-WIDE INSPECTION FORM

Cuba Landfill Site Town of Cuba, Allegany County

NAME OF INSPECTOR: Klajd	i Macolli Michael Andrus
	2 Engineers
DATE OF INSPECTION: 09/1	5/2023
CURRENT USE OF SITE:	sed Landfill
EVIDENCE OF VANDALISM (well	The state of the s
EVIDENCE OF COVER SYSTEM	INTRUSION (ruts, burrows, excavations):
EVIDENCE OF PENETRATIONS	(poles, posts, stakes):
EVIDENCE OF HUMAN ENCROA	ACHMENT (trash, fire pits, tire/footprints):
GENERAL SITE CONDITION (gate Gates and wells are condition.	
EVIDENCE OF EROSION, SETTL	EMENT RUTTING, POTHOLES, SLIPPAGE:

	OF DAMAGE TO WELLS/VENTS:
-	
	of COVER SYSTEM SUBSIDENCE NEAR WELLS/VENTS:
	OF WILDLIFE INTRUSION (nests, burrows, wasp nests):
EVIDENCE (OF SPILLED LIQUIDS (well tampering/vent blowout):
1 · / A	er er zezeze zezeze (wen umpering vene bieweut).
7.	
	Unusual conditions- belching, whistling, excessive gas production:
MONITORIN	G WELLS: Well covers in place and secure:
EVIDENCE O	OF DRAINAGE ISSUES (i.e., blockage due to sedimentation, pondi
NIA	

	omment, above,
	F PHYTOREMEDIATION FAILURE (i.e., excessive leachate on access road south
of willow trees):	

LANDFILL/GAS VENT MONITORING DATA

Gas Vent	Explosivity	PID Reading (PID)
V	_	0.0
2		
3		
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5		
6		
7		
8		
9		
10		×
il		
12		
13		
14		



Enclosure 2 NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION Site Management Periodic Review Report Notice Institutional and Engineering Controls Certification Form



Sit	e No.	902012	Site Details		Box 1	
Sit	e Name Cu	ba Municipal Waste Dispo	osal			
City Co	e Address: vy/Town: Cu unty: Allegar e Acreage: 3	ıy	Zip Code: 14727			
Re	porting Perio	od: January 25, 2022 to Jar	nuary 25, 2023			
					YES	NO
1.	Is the inform	nation above correct?			X	
	If NO, inclu	de handwritten above or on	a separate sheet.			
2.		or all of the site property be nendment during this Repor	en sold, subdivided, merged, or undeting Period?	ergone a		X
3.		peen any change of use at t RR 375-1.11(d))?	he site during this Reporting Period			X
4.	•	ederal, state, and/or local pe e property during this Repor	ermits (e.g., building, discharge) bee ting Period?	n issued		X
			thru 4, include documentation or busly submitted with this certificat			
5.	Is the site of	currently undergoing develo	oment?			X
					Box 2	
					YES	NO
6.	Is the curre	ent site use consistent with t adfill	he use(s) listed below?		X	
7.	Are all ICs	in place and functioning as	designed?	X		
	IF TH		JESTION 6 OR 7 IS NO, sign and dat REST OF THIS FORM. Otherwise co		and	
AC	Corrective M	easures Work Plan must be	e submitted along with this form to a	address t	hese iss	ues.
 Sig	nature of Ow	ner, Remedial Party or Desig	nated Representative	Date		

SITE NO. 902012 Box 3

Description of Institutional Controls

Parcel Owner Institutional Control

155.00-1-6.15 Village of Cuba

Site Management Plan

Ground Water Use Restriction Soil Management Plan Landuse Restriction Surface Water Use Restriction Monitoring Plan

A revised Site Management Plan (SMP) was approved in March 2022 to manage remaining contamination at the Site in perpetuity or until extinguishment of the Environmental Notice in accordance with ECL Article 71, Title 36.

A Declarartion of Covenants and Restrictions (DCR) has been filed on the two entire parcels (~40 acres) that provides an enforceable legal instrument to ensure compliance with the SMP and all ECs and ICs placed on the Site. The DCR was filed with Allegany County in October 2011, and recorded on 10/11/11 as Instrument No.2011-50956.

Because there is remaining contamination at this site, Engineering Controls (ECs) and Institutional Controls (ICs) have been implemented to protect public health and the environment for future use. The Controlled Property has the following Engineering Controls:

- 1. An engineered landfill cap;
- 2. Fourteen passive gas vents were installed within the landfill cap boundaries;
- 3. Four drainage swales were included in the landfill cap design to promote efficient drainage over the cap;
- 4. One hundred sixty eight willow trees were planted south of the retention pond to mitigate potential leachate seepage south of the site;
- 5. To minimize the potential of vehicular traffic, 8-ft chain link fence gates were installed at the entrances of the property on Deep Snow Road, one to the southwest of the site and one to the north of the site. Gates have been secured with locks to minimize the potential for trespassing;
- 6. An access road to control access to the contaminated area; and
- 7. Sentinel wells for long-term monitoring of site groundwater.

A series of ICs are required to implement, maintain and monitor these ECs. The DCR requires compliance with these ICs, to ensure that:

- All ECs must be operated and maintained as specified in the SMP; and
- All ECs on the Site must be inspected and certified at a frequency and in a manner defined in the SMP; and
- Groundwater, soil vapor, and other environmental or public health monitoring must be performed as defined in the SMP: and
- Data and information pertinent to Site Management for the Controlled Property must be reported at the frequency and in a manner defined in the SMP; and
- An exclusion against any uses other than for a landfill; and
- On-site environmental monitoring devices, including but not limited to, groundwater monitoring wells and

passive soil gas vents, must be protected and replaced as necessary to ensure continued functioning in the manner specified

in the SMP.

In addition, the DCR places the following restrictions on the entire property:

- The property may only be used for its current use as a landfill.
- The property may not be used for a higher level of use without additional remediation and amendment of the DCR, as approved by the NYSDEC.
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP.
- The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use.
- The potential for vapor intrusion must be evaluated for any buildings developed in the area, and any potential impacts that are identified must be monitored or mitigated.
- Vegetable gardens and farming on the property are prohibited.
- The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the controlled property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP.

NYSDEC retains the right to access such controlled property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

These EC/ICs are designed to:

- Prevent ingestion/direct contact with contaminated soil
- Prevent exposure to contaminants volatilizing from contaminated soil
- Prevent exposure to onsite groundwater
- Prevent the migration of LNAPL from the small impacted area of the landfill and the release of LNAPL contaminants into groundwater.

155.00-1-7

VILLAGE OF CUBA

Soil Management Plan

Monitoring Plan Ground Water Use Restriction Landuse Restriction Surface Water Use Restriction Site Management Plan

A revised Site Management Plan (SMP) was approved in March 2022 to manage remaining contamination at the Site in perpetuity or until extinguishment of the Environmental Notice in accordance with ECL Article 71, Title 36.

A Declarartion of Covenants and Restrictions (DCR) has been filed on the two entire parcels (~40 acres) that provides an enforceable legal instrument to ensure compliance with the SMP and all ECs and ICs placed on the Site. The DCR was recorded with Allegany County in October 2011 (recorded on 10/11/11, instrument no. 2011-50956).

Because there is remaining contamination at this site, Engineering Controls (ECs) and Institutional Controls (ICs) have been implemented to protect public health and the environment for future use. The Controlled Property has the following Engineering Controls:

- 1. An engineered landfill cap;
- 2. Fourteen passive gas vents were installed within the landfill cap boundaries;
- 3. Four drainage swales were included in the landfill cap design to promote efficient drainage over the cap;
- 4. One hundred sixty eight willow trees were planted south of the retention pond to mitigate potential leachate seepage south of the site:

- 5. To minimize the potential of vehicular traffic, 8-ft chain link fence gates were installed at the entrances of the property on Deep Snow Road, one to the southwest of the site and one to the north of the site. Gates have been secured with locks to minimize the potential for trespassing;
- 6. An access road to control access to the contaminated area; and
- 7. Sentinel wells for long-term monitoring of site groundwater.

A series of ICs are required to implement, maintain and monitor these ECs. The DCR requires compliance with these ICs, to ensure that:

- All ECs must be operated and maintained as specified in the SMP; and
- All ECs on the Site must be inspected and certified at a frequency and in a manner defined in the SMP; and
- Groundwater, soil vapor, and other environmental or public health monitoring must be performed as defined in the SMP; and
- Data and information pertinent to Site Management for the Controlled Property must be reported at the frequency and in a manner defined in the SMP; and
- An exclusion against any uses other than for a landfill; and
- On-site environmental monitoring devices, including but not limited to, groundwater monitoring wells and passive soil gas vents, must be protected and replaced as necessary to ensure continued functioning in the manner specified in the SMP.

In addition, the DCR places the following restrictions on the entire property:

- The property may only be used for its current use as a landfill.
- The property may not be used for a higher level of use without additional remediation and amendment of the DCR, as approved by the NYSDEC.
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP.
- The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use.
- The potential for vapor intrusion must be evaluated for any buildings developed in the area, and any potential impacts that are identified must be monitored or mitigated.
- Vegetable gardens and farming on the property are prohibited.
- The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the controlled property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP.

NYSDEC retains the right to access such controlled property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

These EC/ICs are designed to:

- Prevent ingestion/direct contact with contaminated soil
- Prevent exposure to contaminants volatilizing from contaminated soil
- Prevent exposure to onsite groundwater
- Prevent the migration of LNAPL from the small impacted area of the landfill and the release of LNAPL contaminants into groundwater.

15	Cover System Subsurface Barriers Fencing/Access Control
15	Subsurface Barriers Cover System Fencing/Access Control
	Box 5
	Periodic Review Report (PRR) Certification Statements
1.	I certify by checking "YES" below that:
	 a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the Engineering Control certification;
	 b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.
	YES NO
	$oldsymbol{oldsymbol{eta}}$
2.	For each Engineering control listed in Box 4, I certify by checking "YES" below that all of the following statements are true:
	(a) The Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;
	(b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;
	(c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;
	(d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and
	(e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.
	YES NO
	lacktriangledown
	IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.
	A Corrective Measures Work Plan must be submitted along with this form to address these issues.
	Signature of Owner, Remedial Party or Designated Representative Date

Engineering Control

<u>Parcel</u>

IC CERTIFICATIONS SITE NO. 902012

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Gregory L. Andrus, P.G. print name	at 280 East Broad Street, Su	ite 170 Rochester, NY 14604,			
·	ner's Representative	(Owner or Remedial Party)			
for the Site named in the Site Details Section of this form.					
sal.	<	2/22/24			
Signature of Owner, Rem Rendering Certification	nedial Party, or Designated Representative	Date			

EC CERTIFICATIONS

Box 7

Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

١, _	Michael E. Hanscom	Lu Engineers, 2	280 East Broad St, Rochester, N.Y.	14604
	print name	prin	t business address	
am certifying as a Professional Engineer for the		theVill	Village of Cuba, New York (Owner)	
	as dividence and the Maria Company of the Company o	(Ov	ner or Remedial Party)	



Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification

Stamp (Required for PE)