Village of Cuba Landfill Site

ALLEGANY COUNTY, NEW YORK

Periodic Review Report
(2020-2021)

NYSDEC Site Number: 902012

Prepared for

Village of Cuba
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EXECUTIVE SUMMARY

The Cuba Landfill Site (the "Site") is a 40-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 four (4) wells in October, 2020. However, the data indicate that groundwater VOC concentrations have generally decreased since remedy implementation. Inorganic concentrations show minor fluctuations in constituent concentrations, with some exceedances in iron, sodium and manganese. As indicated by the data, surface water quality does not appear to be impacted by surface water runoff from the Site.

1.0 PERIODIC REVIEW REPORT

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, 2020 to January 25, 2021. 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 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 40-acre former waste disposal facility located in the Town of Cuba, Allegany County, New York. The landfill Site is owned by the Village of Cuba and was operated by the Village of Cuba from the 1950s to the 1980s. 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, as illustrated on Figure 1 and Figure 2. 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. Note, MW-8 is located off-Site and is not located within the acquired 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 Engineering Science, 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 2a 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 –Twelve (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). Subsurface soil samples from two (2) locations did not contain concentrations of VOCs, semi-volatile organic compounds (SVOCs), pesticides, or PCBs greater than the 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 – No VOCs, pesticides, or PCBs were detected in any of the sediment samples analyzed. One (1) sampling location at the southwest corner of the property contained one (1) SVOC, phenol, and a few metals exceeding the SCGs. Both upgradient and downgradient samples from both tributaries contained similar metals concentrations.
- Groundwater Springs – Groundwater springs located downgradient and at various off-Site locations contained VOCs, endrin, Aroclor 1260, and a few metals were detected at concentrations greater than the 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), some 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 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 IMPLEMENTATION 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
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)	June 2015
Ninth Inspection/Monitoring Report (October 2016 event, Lu Engineers)	October 2016
Tenth Inspection/Monitoring Report (March 2017 event, Lu Engineers)	March 2017
Eleventh Inspection/Monitoring Report (May 2018 event, Lu Engineers)	May 2018
NYSDEC Emerging Contaminant Sampling Event	August 2018
Twelfth Inspection/Monitoring Report (September 2019 event, Lu Engineers)	September 2019
Thirteenth Inspection/Monitoring Report (October 2020 event, Lu Engineers)	October 2020 February 2021

(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.

(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.

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. Ten (10) post-remediation sampling events were conducted in accordance with and as outlined in the SMP in:

- January 2011
- November 2011
- July 2014
- November 2014
- June 2015
- October 2016
- March 2017
- May/August 2018
- September 2019
- October 2020

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
- 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 Table 4. Information in Table 4 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, 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/Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
Groundwater Monitoring	Annual (rotating quarterly)	Groundwater	EPA Method 8260 VOCs; EPA Method 6010 TAL Metals
Surface Water Monitoring	Annual (rotating quarterly)	Surface Water	EPA Method 8260 VOCs; EPA Method 6010 TAL Metals
Landfill Gas Monitoring	Annual (rotating quarterly)	Organic Vapors	PID Screening
Cover System Monitoring	Annual (rotating quarterly)	Soil/Geotextile Cover System	Visual Inspection, determine applicable maintenance

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

Monitoring activities completed during this reporting period (2020) included the following:

- Annual groundwater sampling of seven (7) monitoring wells (refer to Figure 2); access to the down-gradient (private) water source at 8354 Jackson Hill Road was not possible at the time of the Site monitoring event;
- Annual sampling of three (3) surface water locations (note: SW-1 was dry at the time of the sampling event);
- 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. Site wells were sampled on October 27, 2020 and October 28, 2020 using sampling methods and procedures outlined in the SMP. Groundwater quality measurements including 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.

Three (3) monitoring wells were sampled in August 2018 as part of New York State's emerging contaminant program. The sampled wells were approved by NYSDEC and were analyzed for 1,4-dioxane and PFAs; however, PFOA sampling was not conducted during the 2019 or 2020 sampling periods. Groundwater monitoring logs are included as Appendix A of this report.

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 for the reporting period:

Volatile Organics

- 1,1,1-trichloroethane (1,1,1-TCA)
- 1,1-dichloroethane (1,1-DCA)
- 1, 1-dichloroethene (1,1-DCE)
- chloroethane (ETC)
- cis-1,2-dichloroethene (cis-1,2-DCE)
- trichloroethene (TCE)
- Vinyl Chloride

Metals

- Iron
- Manganese

The following provides a comprehensive summary of October 2020 Findings:

- No VOCs exceedances were detected at the upgradient well, MW-1D, consistent with previous sampling events;
- All VOC exceedances detected at MW-04 (cis-1,2-DCE, 1,1-DCA, 1,1-DCE) slightly increased and 1,1,1-TCA decreased in concentration relative to September 2019;
- At MW-07, cVOC concentrations generally continue to decline for TCE and 1,1,1-TCE since November 2011, as indicated by Table 2. Reduced concentrations of TCE and the presence of daughter products (below Part 703.5 AWQS) suggest on-going reductive dechlorination;
- VOC concentrations increased slightly for each parameter detected at MW-08 and MW-11 in comparison to the September 2019 sample event;
- Levels of cis-1,2-DCE and 1,1-DCA exceeded Part 703.5 AWQS in October 2020 at MW-08 and MW-11. MW-08 also indicated exceedances of 1,1,1-TCA and TCE
- No VOC concentrations were detected in exceedance of Part 703.5 AWQS in MW-12;
- Upgradient wells MW-1S and MW-9 and downgradient wells, MW-3, MW-10 and MW-13 were not sampled, and no parameters were obtained due to low volumes.
- Iron and manganese were detected in exceedance of Part 703.5 AWQS at MW-1D, MW-4, MW-7, MW-8, MW-10D, MW-11 and MW-12, and generally decreased in concentration relative to the September 2019 sampling period, with the exception of MW-1D and MW-12 where concentrations increased (Table 3).

The residential well located at 8345 Jackson Hill Road was not sampled during the October 2020 sample event due to a lack of access in the property.

6.2 SURFACE WATER DATA

SW-4 exhibited an iron exceedance consistent with previous sampling rounds. Previously detected iron exceedances at SW-3 were not observed during the May 2018 or September 2019 sampling rounds, although iron exceedances were observed during the October 2020 sample event. It should be noted that the iron detections in October 2020 increased in relative to the September 2019 sampling event at SW-3, but decreased at SW-4.

6.3 LEACHATE INDICATOR DATA

Leachate indicators, such as total organic carbon (TOC) and biochemical oxygen demand (BOD), help determine the extent and magnitude of total leachate impacts throughout the landfill. Table 3 presents the most recent leachate indicator data, which was collected in July 2014.

Analytical results associated with unfiltered groundwater samples collected as part of the post-remedial sampling events in July/August 2011, November 2011, February 2012 were submitted for NYSDEC Part 360 2.11 (d) routine leachate indicator analysis.

There were no exceedances of Part 703.5 AWQS values in samples collected in July/August 2011. Overburden monitoring well MW-3 exceeded the applicable NYSDEC AWQS for phenolics in November 2011. Surface water sample results from sample points SW-03 and SW-04 exceeded the applicable NYSDEC AWQS for phenolics in February 2013.

In July 2014, groundwater and surface water samples were analyzed for NYSDEC Part 360 2.11 (d) baseline leachate indicator analysis. Groundwater and surface water samples collected in July 2014 did not exceed the NYSDEC AWQS for leachate indicator parameters. Leachate indicators, other than TAL metals, have not been collected since 2014. NYSDEC confirmed in an email dated March 24, 2021 that leachate sampling is no longer required.

6.4 LANDFILL GAS MONITORING DATA

The landfill gas vents were monitored during the October 2020 sampling event for VOCs and explosivity. Refer to Figure 2 for gas vent locations. No elevated readings in the vents were found during the October 2020 sampling event and Site-wide inspection, as documented in Appendix D.

6.5 SITE INSPECTIONS

In October 2020, 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. Maintenance items including landfill vent cap replacement and monitoring well lock replacement were completed during this certifying period. MW-1S upheaval has not yet been repaired. 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. 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 EC's.

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. cVOCs are the primary contaminants of concern at the Site. Groundwater cVOC concentrations have generally decreased over time, but have fluctuated since 2011. 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 OVERALL CONCLUSIONS AND RECOMMENDATIONS

7.1 COMPLIANCE WITH SITE MANAGEMENT PLAN

The controlling document for the Site is the approved SMP. The implementation of and compliance with 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.

7.2 PERFORMANCE AND EFFECTIVENESS OF THE REMEDIES

Overall, the remedy performance monitoring data collected during this reporting period indicate 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 overall declining leachate indicator parameter concentrations.

Landfill gas is typical and 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.

The following repairs are recommended for Site maintenance:

- Continue to monitor willow trees;
- If determined necessary, repair the exposed green geotextile on the Site cap;

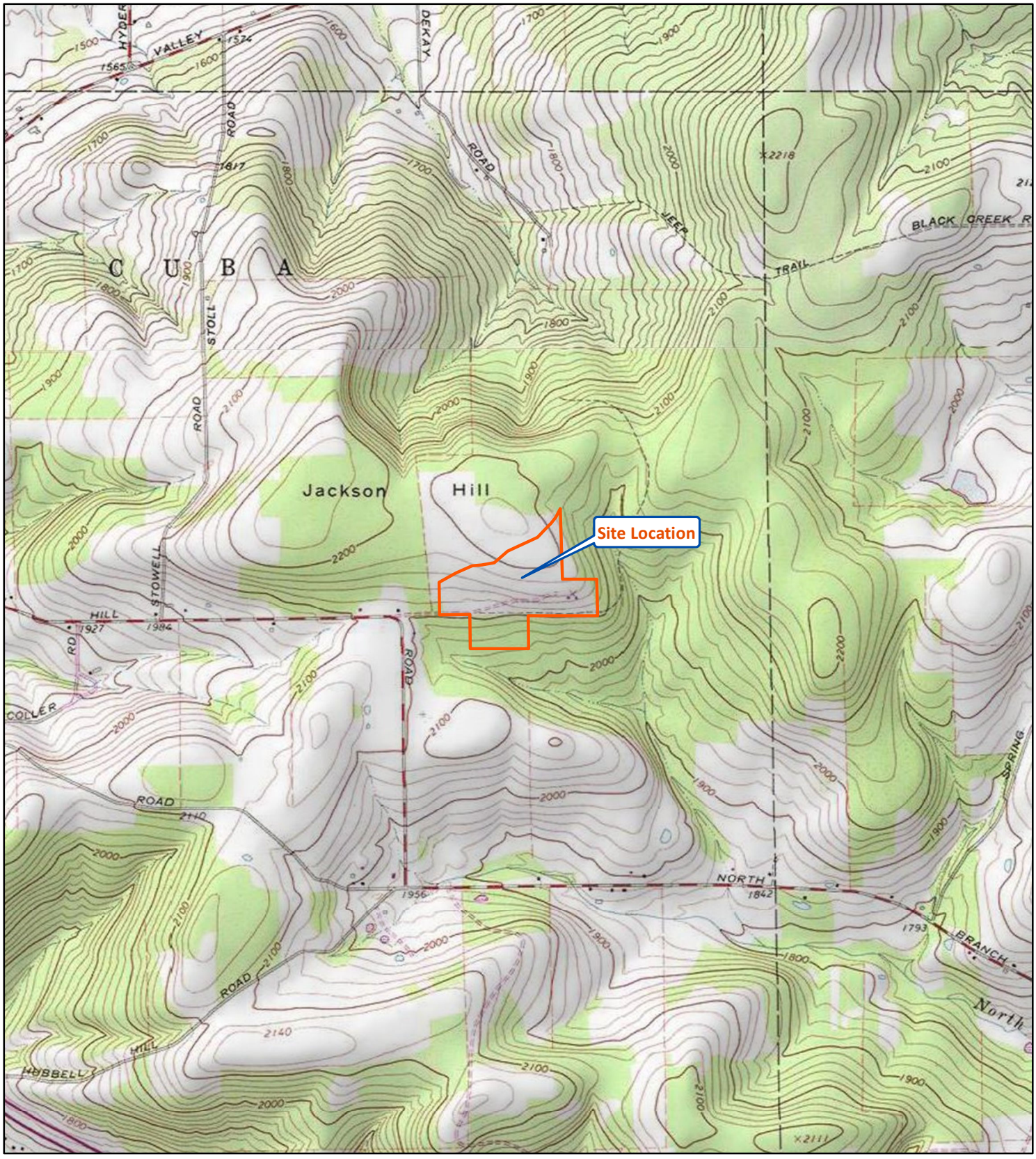
7.3 FUTURE SAMPLING SCHEDULE AND PERIODIC REVIEW REPORT SUBMITTALS

Based on the analytical data generated during this reporting period, it is evident that VOCs and metal concentrations are the primary contaminants of concern at the Site. Increased concentrations of Iron, manganese and VOCs in a portion of the Site monitoring wells may be attributed to seasonal lows in water depth elevations. The trend of VOC concentrations

suggests that degradation is occurring. Lu Engineers recommends that the overburden and bedrock monitoring wells, and surface waters included in the SMP monitoring program be sampled annually for VOCs and TAL metals, on a rotating quarterly basis. Lu Engineers will perform the next sampling event during the first quarter of 2021.

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 by the NYSDEC.

Figures



Scale: 1:24,000

Contour Interval: 20 feet

1,000 0 1,000 2,000 3,000 4,000

Feet

N

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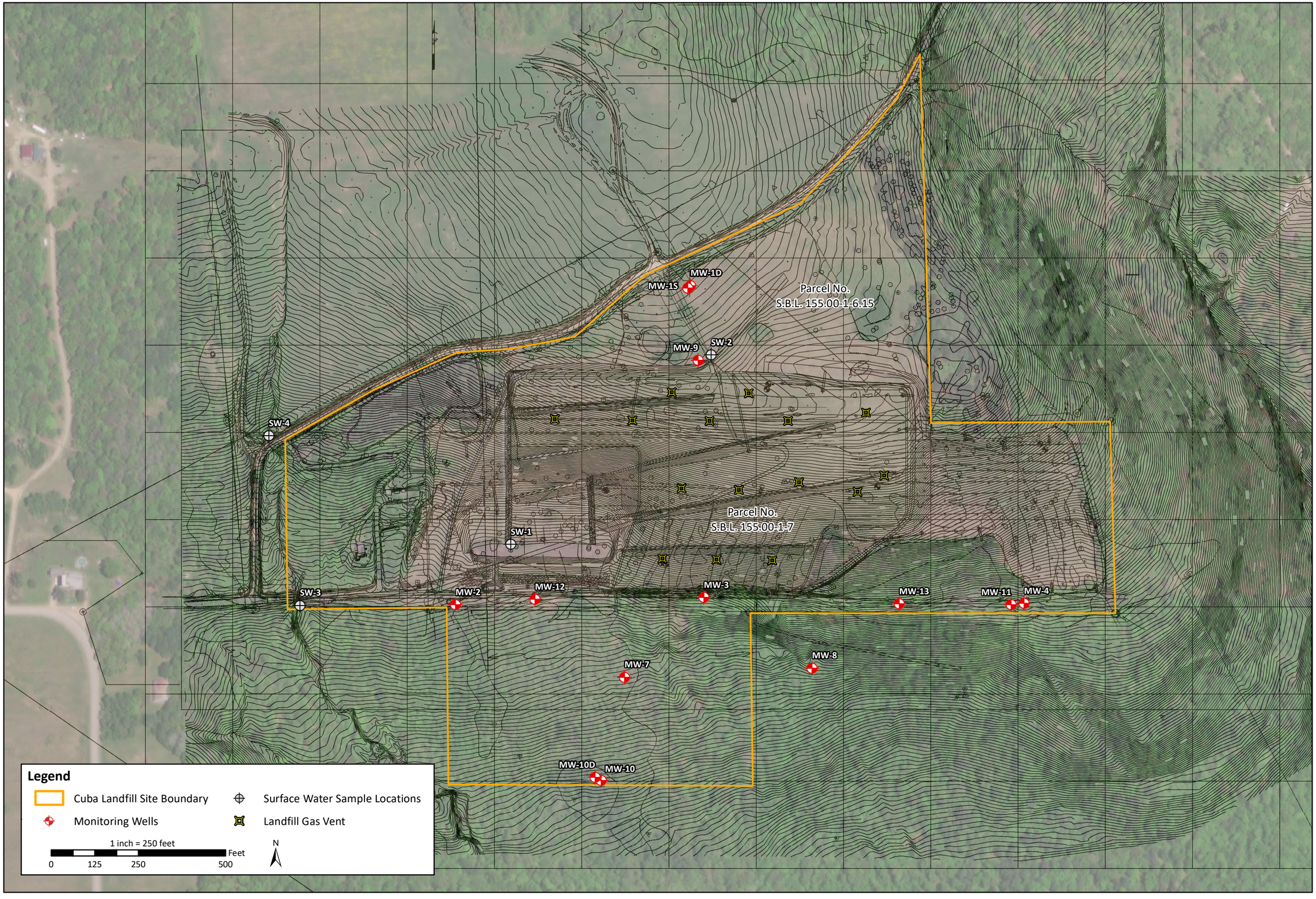
Figure 1. Site Location Plan
Cuba Landfill Site
NYSDEC SITE #902012
Cuba, New York

DATE: January 2020
PROJECT #: 50191-01
DRAWN/CHECKED: BGS/GLA
DATA SOURCE: ESRI Online Basemap



DATE: January 2021
Project Number: 50191-01
DRAWN/CHECKED: BGS/GLA
DATA SOURCE:
ESRI Online Basemap; Client Data

Figure 2. Site Layout Plan
Cuba Landfill
NYSDEC Site #902012
Cuba, New York

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Figure 3. Analytical Results and Groundwater Contour Map
Cuba Landfill Site
NYSDEC Site #902012
Cuba, New York

DATE:	March 2021
Project Number:	50191-01
DRAWN/CHECKED:	KM/GLA
DATA SOURCE:	ESRI Online Basemap; Client Data

MW-1D
Surface Water
Metals[2]:
Iron: ... 4,150

MW-1S
Groundwater
-Not Sampled-

SW-2
Groundwater
- No Exceedances Detected -

MW-9
Groundwater
-Not Sampled-

SW-4
Surface Water
Metals[2]:
Iron: ... 707

MW-12
Groundwater
Metals[2]:
Iron: ..... .43,800.0
Manganese: ...2,450.0

SW-1
Surface Water
-Not Sampled-

SW-3
Surface Water
Metals[2]:
Iron: ... 752

MW-2
Groundwater
-No Exceedances Detected-

MW-3
Groundwater
-Not Sampled-

MW-13
Groundwater
-Not Sampled-

MW-11
Groundwater
Volatile Organics[1]:
1,1-Dichloroethane: 30.0
cis-1,2-Dichloroethene: ...12.0

Metals[2]:
Iron: 8,830.0
Managnese: 784.0

MW-4
Groundwater
Volatile Organics[1]:
1,1,1-Trichloroethane: 17.0
1,1-Dichloroethane: 77.0
1,1-Dichloroethane: 7.2
cis-1,2-Dichloroethene: ... 32.0
Vinyl Chloride: 3.6

Metals[2]:
Manganese: 4,980.0

MW-8
Groundwater
Volatile Organics[1]:
1,1,1-Trichloroethane: 6.8
1,1-Dichloroethene: 5.3
cis-1,2-Dichloroethene: ... 6.4
Trichloroethene: 13.0

Metals[2]:
Iron:..... 28,800
Manganese:..... 381.0

MW-7
Groundwater
Volatile Organics[1]:
Trichloroethene: 7.1

Metals[2]:
Iron: 2,350.0

MW-10
Groundwater
-Not Sampled-

MW-10D
Groundwater
Metals[2]:
Iron: 355.0

Inferred Flow Direction

Parcel No.
S.B.L. 155.00-1-6.15

Parcel No.
S.B.L. 155.00-1-7

*8354 Jackson Hill Rd sample location

8354 Jackson Hill Road
Surface Water
-Not Sampled-

1 inch = 200 feet

Legend

- Cuba Landfill Site Boundary
- Monitoring Wells
- Surface Water Sample Locations
- Landfill Gas Vent
- Groundwater Contour (10 ft. interval)

N

Notes:
BLUE TEXT indicates NYSDEC Part 703 Groundwater Standard Exceedance
1. Values presented in ug/L
2. Values presented in mg/L

1 inch = 250 feet

0 125 250 500 Feet

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Tables

Village of Cuba Landfill Site
NYSDEC Site #902012
Periodic Review Report (2020)

Table 1 - Volatile Organic Compounds Detected in Groundwater & Surface Water (October 2020)

Detected Parameters USEPA Method 8260B	NYSDEC Ambient Water Quality Standard Class GA	Sample ID	8354 Jackson	MW-1S	MW-1D	MW-3	MW-4	MW-7	MW-8	MW-9	MW-10	MW-10D
		Sample Type	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
		Sample Date	10/27/2020	10/27/2020	10/28/2020	10/27/2020	10/27/2020	10/27/2020	10/27/2020	10/27/2020	10/27/2020	10/28/2020
1,1,1-Trichloroethane	5(s)	µg/L	NS	NS	ND	NS	**17**	4.5	**6.8**	NS	NS	1.60
1,1,2-Trichloroethane	1	µg/L	NS	NS	ND	NS	0.23 J	ND	ND	NS	NS	ND
1,1-Dichloroethane	5(s)	µg/L	NS	NS	ND	NS	**77**	1.8	**5.3**	NS	NS	0.61 J
1,1-Dichloroethene	5(s)	µg/L	NS	NS	ND	NS	**7.2**	0.83 J	0.47 J	NS	NS	0.20 J
Acetone	50*	µg/L	NS	NS	ND	NS	ND	ND	ND	NS	NS	ND
1,4-Dioxane	–	µg/L	NS	NS	ND	NS	29.00 J	ND	ND	NS	NS	ND
Chlorobenzene	5(s)	µg/L	NS	NS	ND	NS	0.21 J	ND	ND	NS	NS	ND
1,4-Dichlorobenzene	3(s)	µg/L	NS	NS	ND	NS	0.30 J	ND	ND	NS	NS	ND
Chloromethane	–	µg/L	NS	NS	0.37 J	NS	0.50 J	0.28 J	0.30 J	NS	NS	ND
Chloroethane	5(s)	µg/L	NS	NS	ND	NS	4.4	ND	ND	NS	NS	ND
cis-1,2-Dichloroethene	5(s)	µg/L	NS	NS	ND	NS	**32**	3.5	**6.4**	NS	NS	0.83 J
1,2-Dichloroethane	0.6	µg/L	NS	NS	ND	NS	0.48 J	ND	ND	NS	NS	ND
Tetrachloroethene	5(s)	µg/L	NS	NS	ND	NS	0.46 J	ND	ND	NS	NS	ND
trans-1,2-Dichloroethene	5(s)	µg/L	NS	NS	ND	NS	0.31 J	ND	ND	NS	NS	ND
Trichloroethene	5(s)	µg/L	NS	NS	ND	NS	2.2	**7.1**	**13.0**	NS	NS	0.70 J
Vinyl chloride	2(s)	µg/L	NS	NS	ND	NS	**3.6**	ND	ND	NS	NS	ND

Detected Parameter List USEPA Method 8260B	NYSDEC Ambient Water Quality Standard Class GA	Sample ID	MW-11	MW-12	MW-13	SW-01	SW-02	SW-03	SW-04	Trip Blank
		Sample Type	Groundwater	Groundwater	Groundwater	Surfacewater	Surfacewater	Surfacewater	Surfacewater	Water
		Sample Date	10/27/2020	10/28/2020	10/27/2020	10/27/2020	10/28/2020	10/27/2020	10/27/2020	10/27/2020
1,1,1-Trichloroethane	5(s)	µg/L	4.9	ND	NS	NS	ND	ND	ND	ND
1,1,2-Trichloroethane	1	µg/L	ND	ND	NS	NS	ND	ND	ND	ND
1,1-Dichloroethane	5(s)	µg/L	**30**	0.21 J	NS	NS	ND	ND	ND	ND
1,1-Dichloroethene	5(s)	µg/L	2.2	ND	NS	NS	ND	ND	ND	ND
Acetone	50*	µg/L	ND	ND	NS	NS	ND	ND	ND	ND
1,4-Dioxane	–	µg/L	ND	ND	NS	NS	ND	ND	ND	ND
Chlorobenzene	5(s)	µg/L	ND	ND	NS	NS	ND	ND	ND	ND
1,4-Dichlorobenzene	3(s)		ND	ND	NS	NS	ND	ND	ND	ND
Chloromethane	–	µg/L	0.51 J	0.55 J	NS	NS	0.31 J	0.40 J	0.39 J	ND
Chloroethane	5(s)	µg/L	1.50	ND	NS	NS	ND	ND	ND	ND
cis-1,2-Dichloroethene	5(s)	µg/L	**12.0**	ND	NS	NS	ND	ND	ND	ND
1,2-Dichloroethane	0.6	µg/L	ND	ND	NS	NS	ND	ND	ND	ND
Tetrachloroethene	5(s)	µg/L	1.1	ND	NS	NS	ND	ND	ND	ND
trans-1,2-Dichloroethene	5(s)	µg/L	ND	ND	NS	NS	ND	ND	ND	ND
Trichloroethene	5(s)	µg/L	3.1	0.30 J	NS	NS	ND	ND	ND	ND
Vinyl chloride	2(s)	µg/L	0.67 J	ND	NS	NS	ND	ND	ND	ND

USEPA: U.S. Environmental Protection Agency
NYDEC: New York State Department of Environmental Conservation
--- indicates no applicable standard.
µg/L: micrograms per liter.
ND: Not detected above minimum laboratory quantitation limit
NS: No sample collected.
Wells or surface water not sampled due to dry conditions
Exceeds 6 NYCRR Part 703.5 Class GA Ambient Groundwater Standard or Guidance Value
Ambient Water Quality Standards and Guidance Values from Division of Water and Technical and Operational Guidance Series (TOGS) 1.1.1, August 1999.
* NYSDEC Part 703.5 Guidance Value (no standard)
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.

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Table 2A - 1S VOC Groundwater Results Trend Analysis

Detected Parameters[1]	NYS Groundwater Standard[2]	MW-1S										
		Pre-Remediation	Post-Remediation									
VOCs 8260B		Nov-97	Jan-14	Nov-14	Jul-14	Nov-15	Jun-16	Oct-16	Mar-17	May-18	Sep-19	Oct-20
Acetone	**50***	ND	ND	**2.21**	ND	ND	ND	NS	ND	NS	NS	NS
Chloroethane	**5**	ND	ND	ND	ND	ND	ND	NS	ND	NS	NS	NS
cis-1,2-Dichloroethene	**5**	ND	ND	ND	ND	ND	ND	NS	ND	NS	NS	NS
1,1-Dichloroethane	**5**	ND	ND	ND	ND	ND	ND	NS	ND	NS	NS	NS
1,1-Dichloroethene	**5**	ND	ND	ND	ND	ND	ND	NS	ND	NS	NS	NS
Ethylbenzene	**5**	ND	**0.11**	ND	ND	ND	ND	NS	ND	NS	NS	NS
1,1,1-Trichloroethane	**5**	**1**	ND	ND	ND	ND	ND	NS	ND	NS	NS	NS
Tetrachloroethene	**5**	**1**	ND	ND	ND	ND	ND	NS	ND	NS	NS	NS
Toluene	**5**	ND	**0.47**	ND	ND	ND	ND	NS	ND	NS	NS	NS
Trichloroethene	**5**	ND	ND	ND	ND	ND	ND	NS	ND	NS	NS	NS

Notes:

Exceeds 6 NYCRR Part 703.5 Class GA Ambient Groundwater Standard or Guidance Value

ND - Not detected above reporting limit

NS - No sample collected

1 - Results presentend in ug/L or parts per billion (ppb)

2 - NYS Ambient Groundwater Standards (6 NYCRR Part 703.5)

* - NYSDEC Guidance Value (TOGS 1.1.1)

NOTE: Sample results are illustrated for all available data. Not all wells were sampled during each sampling event presented in this table.

Table 2B - MW-1D VOC Groundwater Results Trend Analysis

Detected Parameters[1]	NYS Groundwater Standard[2]	MW-1D									
		Post-Remediation									
VOCs 8260B		Jan-14	Nov-14	Jul-14	Nov-15	Jun-16	Oct-16	Mar-17	May-18	Sep-19	Oct-20
Acetone	**50***	ND	NA	ND	ND	ND	NS	**2.6 J**	ND	ND	ND
Chloroethane	**5**	ND	NA	ND	ND	ND	NS	ND	ND	ND	ND
cis-1,2-Dichloroethene	**5**	ND	NA	ND	ND	ND	NS	ND	ND	ND	ND
1,1-Dichloroethane	**5**	**0.19**	NA	ND	ND	ND	NS	ND	ND	ND	ND
1,1-Dichloroethene	**5**	ND	NA	ND	ND	ND	NS	ND	ND	ND	ND
Ethylbenzene	**5**	ND	NA	ND	ND	ND	NS	ND	ND	ND	ND
1,1,1-Trichloroethane	**5**	**0.2**	NA	ND	ND	ND	NS	ND	ND	ND	ND
Tetrachloroethene	**5**	ND	NA	ND	ND	ND	NS	ND	ND	ND	ND
Toluene	**5**	ND	NA	ND	ND	ND	NS	ND	ND	ND	ND
Trichloroethene	**5**	ND	NA	ND	ND	ND	NS	ND	ND	ND	ND

Notes:

Exceeds 6 NYCRR Part 703.5 Class GA Ambient Groundwater Standard or Guidance Value

ND - Not detected above reporting limit

NS - No sample collected

1 - Results presentend in ug/L or parts per billion (ppb)

2 - NYS Ambient Groundwater Standards (6 NYCRR Part 703.5)

* - NYSDEC Guidance Value (TOGS 1.1.1)

NOTE: Sample results are illustrated for all available data. Not all wells were sampled during each sampling event presented in this table.

Table 2C - MW-03 VOC Groundwater Results Trend Analysis

Detected Parameters[1]	NYS Groundwater Standard[2]	MW-03										
		Pre-Remediation	Post-Remediation									
VOCs 8260B		Nov-97	Jan-14	Nov-14	Jul-14	Nov-15	Jun-16	Oct-16	Mar-17	May-18	Sep-19	Oct-20
Acetone	**50***	**14**	**433**	ND	NS	NS	ND	NS	NS	NS	NS	NS
Chloroethane	**5**	**4.0**	**20.6**	**56.2**	NS	NS	**14.0**	NS	NS	NS	NS	NS
cis-1,2-Dichloroethene	**5**	ND	**622**	ND	NS	NS	**79.0**	NS	NS	NS	NS	NS
1,1-Dichloroethane	**5**	**11.0**	**81.6**	**86.4**	NS	NS	**27.0**	NS	NS	NS	NS	NS
1,1-Dichloroethene	**5**	**65.0**	**7.2**	**4.8**	NS	NS	ND	NS	NS	NS	NS	NS
Ethylbenzene	**5**	ND	ND	ND	NS	NS	ND	NS	NS	NS	NS	NS
1,1,1-Trichloroethane	**5**	**240.0**	**73.8**	**84.8**	NS	NS	**33.0**	NS	NS	NS	NS	NS
Tetrachloroethene	**5**	ND	ND	ND	NS	NS	ND	NS	NS	NS	NS	NS
Toluene	**5**	ND	ND	ND	NS	NS	ND	NS	NS	NS	NS	NS
Trichloroethene	**5**	**290.0**	**99.8**	**162.0**	NS	NS	**210.0**	NS	NS	NS	NS	NS

Notes:

Exceeds 6 NYCRR Part 703.5 Class GA Ambient Groundwater Standard or Guidance Value

ND - Not detected above reporting limit

NS - No sample collected due to dry conditions

1 - Results presentend in ug/L or parts per billion (ppb)

2 - NYS Ambient Groundwater Standards (6 NYCRR Part 703.5)

* - NYSDEC Guidance Value (TOGS 1.1.1)

NOTE: Sample results are illustrated for all available data. Not all wells were sampled during each sampling event presented in this table.

Table 2D - MW-04 VOC Groundwater Results Trend Analysis

Detected Parameters[1]	NYS Groundwater Standard[2]	MW-04											
		Pre-Remediation	Post-Remediation										
VOCs 8260B		Nov-97	11-Jan	11-Jul	11-Nov	14-Jul	14-Nov	15-Jun	16-Oct	Mar-18	May-18	Sep-19	Oct-20
Acetone	**50***	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**7.9 B**	ND
Chloroethane	**5**	ND	**5.62**	**6.22**	**2.12**	**5.1**	**11.0**	**12.0**	ND	**9.6**	**6.0**	**6.4**	**4.4**
cis-1,2-Dichloroethene	**5**	ND	**13.4**	**10.2**	**10.1**	**15.0**	**18.0**	**21.0**	**20.0**	**12.0**	**10.0**	**29.0**	**32.0**
1,1-Dichloroethane	**5**	**100.0**	**85.5**	**84.6**	**62.7**	**89.0**	**79.0**	**68.0**	**100.0**	**38.0**	**30.0**	**57.0**	**77.0**
1,1-Dichloroethene	**5**	**1.0**	**3.62**	**3.95**	**3.08**	**8.7**	**6.9**	**7.7**	**6.0**	**3.1**	**3.3**	**6.2**	**7.2**
Ethylbenzene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	**5**	**12.0**	**30.1**	**24.5**	**19.7**	**35.0**	**24.0**	**32.0**	**30.0**	**12.0**	**10.0**	**19.0**	**17.0**
Tetrachloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.46 J**
Toluene	**5**	ND	**2.26**	**1.25**	**1.55**	ND	ND	ND	ND	**0.44**	ND	ND	ND
Trichloroethene	**5**	**4.0**	**14.1**	**6.22**	**6.75**	ND	ND	ND	**6.4**	**5.3**	**4.3**	**2.5**	**2.2**

Notes:

Exceeds 6 NYCRR Part 703.5 Class GA Ambient Groundwater Standard or Guidance Value

ND - Not detected above reporting limit

NS - No sample collected

1 - Results presentend in ug/L or parts per billion (ppb)

2 - NYS Ambient Groundwater Standards (6 NYCRR Part 703.5)

* - NYSDEC Guidance Value (TOGS 1.1.1)

NOTE: Sample results are illustrated for all available data. Not all wells were sampled during each sampling event presented in this table.

Table 2E - MW-07 VOC Groundwater Results Trend Analysis

Detected Parameters[1]	NYS Groundwater Standard[2]	MW-07								
		Post-Remediation								
VOCs 8260B		Nov-14	Jul-14	Nov-15	Jun-16	Oct-16	Mar-17	May-18	Sep-19	Oct-20
Acetone	**50***	ND	ND	ND	ND	NS	ND	ND	**5.4 B**	ND
Chloroethane	**5**	ND	ND	ND	ND	NS	ND	ND	ND	ND
cis-1,2-Dichloroethene	**5**	**3.22**	ND	ND	ND	NS	**2.9**	**2.8**	**3.0**	**3.5**
1,1-Dichloroethane	**5**	**1.53**	ND	ND	ND	NS	**1.3 J**	**1.3 J**	**1.6**	**1.8**
1,1-Dichloroethene	**5**	**0.55**	ND	ND	ND	NS	**0.56**	**0.62**	ND	**0.83 J**
Ethylbenzene	**5**	ND	ND	ND	ND	NS	ND	ND	ND	ND
1,1,1-Trichloroethane	**5**	**5.63**	**5.9**	ND	ND	NS	**4.5**	**4.4**	**4.4**	**4.5**
Tetrachloroethene	**5**	ND	ND	ND	ND	NS	ND	ND	ND	ND
Toluene	**5**	ND	ND	ND	ND	NS	ND	ND	ND	ND
Trichloroethene	**5**	**7.55**	**6.9**	**6.9**	**7.1**	NS	**6.4**	**6.3**	**7.3**	**7.1**

Notes:

Exceeds 6 NYCRR Part 703.5 Class GA Ambient Groundwater Standard or Guidance Value

ND - Not detected above reporting limit

NS - No sample collected

1 - Results presentend in ug/L or parts per billion (ppb)

2 - NYS Ambient Groundwater Standards (6 NYCRR Part 703.5)

* - NYSDEC Guidance Value (TOGS 1.1.1)

NOTE: Sample results are illustrated for all available data. Not all wells were sampled during each sampling event presented in this table.

Table 2F - MW-08 VOC Groundwater Results Trend Analysis

Detected Parameters[1]	NYS Groundwater Standard[2]	MW-08												
		Post-Remediation												
VOCs 8260B		Nov-14	Jul-14	Nov-15	Nov-97	Jan-14	Nov-14	Jul-14	Jun-16	Oct-16	Mar-17	May-18	Sep-19	Oct-20
Acetone	**50***	ND	ND	ND	ND	ND	**51.5**	NS	ND	ND	ND	ND	ND	ND
Chloroethane	**5**	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	**5**	**6.66**	**5.2**	**6.5**	ND	**0.59**	**0.53**	NS	**5.4**	**5.4**	**8.4**	**12**	**5.5**	**6.4**
1,1-Dichloroethane	**5**	**5.61**	**5.3**	**6.2**	**2**	**3.48**	**2.71**	NS	**5.6**	**6**	**7.6**	**8.4**	**4.7**	**5.3**
1,1-Dichloroethene	**5**	0.54	ND	ND	ND	ND	ND	NS	ND	ND	**0.72**	**1.3**	ND	**0.47 J**
Ethylbenzene	**5**	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	**5**	**9.92**	**8.4**	**11.0**	**0.9**	**0.8**	**0.3**	NS	**10.0**	**8.1**	**12.0**	**13.0**	**6.6**	**6.8**
Tetrachloroethene	**5**	ND	ND	ND	**2**	ND	ND	NS	ND	ND	ND	ND	ND	ND
Toluene	**5**	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND
Trichloroethene	**5**	**18.6**	**12.0**	**18.0**	ND	ND	ND	NS	**15.0**	**14**	**21.0**	**27.0**	**13.0**	**13.0**

Notes:

Exceeds 6 NYCRR Part 703.5 Class GA Ambient Groundwater Standard or Guidance Value

ND - Not detected above reporting limit

NS - No sample collected

1 - Results presentend in ug/L or parts per billion (ppb)

2 - NYS Ambient Groundwater Standards (6 NYCRR Part 703.5)

* - NYSDEC Guidance Value (TOGS 1.1.1)

NOTE: Sample results are illustrated for all available data. Not all wells were sampled during each sampling event presented in this table.

Table 2G - MW-09 VOC Groundwater Results Trend Analysis

Detected Parameters[1]	NYS Groundwater Standard[2]	MW-09										
		Pre-Remediation	Post-Remediation									
VOCs 8260B		Nov-97	Jan-14	Nov-14	Jul-14	Nov-15	Jun-16	Oct-16	Mar-17	May-18	Sep-19	Oct-20
Acetone	**50***	ND	**8.18**	**51.5**	NS	NS	NS	NS	NS	NS	NS	NS
Benzene	**1**	ND	**0.12**	**0.54**	NS	NS	NS	NS	NS	NS	NS	NS
Chloroethane	**5**	ND	**1.3**	**0.96**	NS	NS	NS	NS	NS	NS	NS	NS
cis-1,2-Dichloroethene	**5**	ND	**0.59**	**0.53**	NS	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloroethane	**5**	**2**	**3.48**	**2.71**	NS	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloroethene	**5**	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
Ethylbenzene	**5**	ND	**0.15**	ND	NS	NS	NS	NS	NS	NS	NS	NS
1,1,1-Trichloroethane	**5**	**0.9**	**0.78**	**0.31**	NS	NS	NS	NS	NS	NS	NS	NS
1,1,2-Trichloroethane	**1**	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
Tetrachloroethene	**5**	**2**	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
Toluene	**5**	ND	**0.73**	ND	NS	NS	NS	NS	NS	NS	NS	NS
trans-1,2-Dichloroethene	**5**	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
Trichloroethene	**5**	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
Vinyl chloride	**2**	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
Xylenes (total)	**5**	ND	0.6	ND	NS	NS	NS	NS	NS	NS	NS	NS

Notes:

Exceeds 6 NYCRR Part 703.5 Class GA Ambient Groundwater Standard or Guidance Value

ND - Not detected above reporting limit

NS - No sample collected

1 - Results presentend in ug/L or parts per billion (ppb)

2 - NYS Ambient Groundwater Standards (6 NYCRR Part 703.5)

* - NYSDEC Guidance Value (TOGS 1.1.1)

NOTE: Sample results are illustrated for all available data. Not all wells were sampled during each sampling event presented in this table.

Table 2H - MW-10 VOC Groundwater Results Trend Analysis

Detected Parameters[1]	NYS Groundwater Standard[2]	MW-10									
		Post-Remediation									
VOCs 8260B		Jan-14	Nov-14	Jul-14	Nov-15	Jun-16	Oct-16	Mar-17	May-18	Sep-19	Oct-20
Acetone	**50***	**4.62**	**2.13**	**12.0**	ND	**17.0**	ND	ND	ND	NS	NS
Benzene	**1**	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
Chloroethane	**5**	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
cis-1,2-Dichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
1,1-Dichloroethane	**5**	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
1,1-Dichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
Ethylbenzene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
1,1,1-Trichloroethane	**5**	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
1,1,2-Trichloroethane	**1**	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
Tetrachloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
Toluene	**5**	**0.34**	ND	ND	ND	ND	ND	ND	ND	NS	NS
trans-1,2-Dichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
Trichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
Vinyl chloride	**2**	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
Xylenes (total)	**5**	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS

Notes:

Exceeds 6 NYCRR Part 703.5 Class GA Ambient Groundwater Standard or Guidance Value

ND - Not detected above reporting limit

NS - No sample collected

1 - Results presentend in ug/L or parts per billion (ppb)

2 - NYS Ambient Groundwater Standards (6 NYCRR Part 703.5)

* - NYSDEC Guidance Value (TOGS 1.1.1)

NOTE: Sample results are illustrated for all available data. Not all wells were sampled during each sampling event presented in this table.

Table 2I - MW-10D VOC Groundwater Results Trend Analysis

Detected Parameters[1]	NYS Groundwater Standard[2]	MW-10D								
		Post-Remediation								
VOCs 8260B		Nov-14	Jul-14	Nov-15	Jun-16	Oct-16	Mar-17	May-18	Sep-19	Oct-20
Acetone	**50***	**6.66**	ND	ND	ND	ND	ND	5.7	ND	ND
Benzene	**1**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	**5**	**0.69**	ND	ND	ND	ND	ND	ND	ND	**0.83 J**
1,1-Dichloroethane	**5**	**0.5**	ND	ND	ND	ND	ND	ND	ND	**0.61 J**
1,1-Dichloroethene	**5**	**0.18**	ND	ND	ND	ND	ND	ND	ND	**0.20 J**
Ethylbenzene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	**5**	**1.66**	ND	ND	ND	ND	**0.99**	**ND**	**1.6**	**1.6**
1,1,2-Trichloroethane	**1**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	**5**	**0.7**	ND	ND	ND	ND	**0.64**	**0.41 J**	ND	**0.70 J**
Vinyl chloride	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

Exceeds 6 NYCRR Part 703.5 Class GA Ambient Groundwater Standard or Guidance Value

ND - Not detected above reporting limit

NS - No sample collected

1 - Results presentend in ug/L or parts per billion (ppb)

2 - NYS Ambient Groundwater Standards (6 NYCRR Part 703.5)

* - NYSDEC Guidance Value (TOGS 1.1.1)

NOTE: Sample results are illustrated for all available data. Not all wells were sampled during each sampling event presented in this table.

Table 2J - MW-11 VOC Groundwater Results Trend Analysis

Detected Parameters[1]	NYS Groundwater Standard[2]	MW-11									
		Post-Remediation									
VOCs 8260B		Jan-14	Nov-14	Jul-14	Nov-15	Jun-16	Oct-16	Mar-17	May-18	Sep-19	Oct-20
Acetone	**50***	**5.45**	**1.81**	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	**1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	**5**	**2.23**	**1.17**	ND	ND	ND	ND	**1.5 J**	**ND**	**2.1**	**1.5**
cis-1,2-Dichloroethene	**5**	**4.87**	**4.17**	**9.1**	ND	**8.1**	ND	**7.0**	**7.3**	**3.6**	**12.0**
1,1-Dichloroethane	**5**	**50.5**	**44.0**	**53.0**	**25.0**	**39.0**	ND	**24.0**	**26.0**	**8.8**	**30.0**
1,1-Dichloroethene	**5**	1.61	**1.48**	ND	ND	ND	ND	**1.4**	**2.1**	**ND**	**2.2**
Ethylbenzene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	**5**	**13.9**	**12.8**	**15.0**	**6.0**	**11.0**	ND	**6.4**	**7.9**	**2.5**	**4.9**
1,1,2-Trichloroethane	**1**	ND	**0.16**	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	**5**	**1.45**	**2.92**	ND	ND	ND	ND	**1.6**	**1.4**	ND	**1.1**
Toluene	**5**	**0.34**	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	**5**	**4.03**	**4.27**	ND	ND	ND	ND	**4.0**	**4.5**	**1.3**	**3.1**
Vinyl chloride	**2**	**0.34**	ND	ND	ND	ND	ND	ND	ND	ND	**0.67 J**
Xylenes (total)	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

Exceeds 6 NYCRR Part 703.5 Class GA Ambient Groundwater Standard or Guidance Value

ND - Not detected above reporting limit

NS - No sample collected

1 - Results presentend in ug/L or parts per billion (ppb)

2 - NYS Ambient Groundwater Standards (6 NYCRR Part 703.5)

* - NYSDEC Guidance Value (TOGS 1.1.1)

NOTE: Sample results are illustrated for all available data. Not all wells were sampled during each sampling event presented in this table.

Table 2K - MW-12 VOC Groundwater Results Trend Analysis

Detected Parameters[1]	NYS Groundwater Standard[2]	MW-12									
		Post-Remediation									
VOCs 8260B		Jan-14	Nov-14	Jul-14	Nov-15	Jun-16	Oct-16	Mar-17	May-18	Sep-19	Oct-20
Acetone	**50***	**5.22**	**2.41**	ND	ND	ND	ND	**1.7**	ND	ND	ND
Benzene	**1**	**0.14**	**0.52**	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	**5**	**1.29**	**1.47**	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	**5**	**2.1**	**2.14**	ND	ND	ND	ND	**0.70 J**	ND	ND	**0.21 J**
1,1-Dichloroethene	**5**	**0.32**	**0.21**	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	**5**	**1.97**	**1.59**	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	**1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	**5**	**0.12**	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	**5**	**1.33**	**1.45**	ND	ND	ND	ND	**0.78**	**0.28 J**	ND	**0.30 J**
Vinyl chloride	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

Exceeds 6 NYCRR Part 703.5 Class GA Ambient Groundwater Standard or Guidance Value

ND - Not detected above reporting limit

NS - No sample collected

1 - Results presentend in ug/L or parts per billion (ppb)

2 - NYS Ambient Groundwater Standards (6 NYCRR Part 703.5)

* - NYSDEC Guidance Value (TOGS 1.1.1)

NOTE: Sample results are illustrated for all available data. Not all wells were sampled during each sampling event presented in this table.

Table 2L - MW-13 VOC Groundwater Results Trend Analysis

Detected Parameters[1]	NYS Groundwater Standard[2]	MW-13									
		Post Remediation									
VOCs 8260B		Jan-14	Nov-14	Jul-14	Nov-15	Jun-16	Oct-16	Mar-17	May-18	Sep-19	Oct-20
Acetone	**50***	**6.21**	**1.61**	ND	ND	ND	ND	**1.70 J**	ND	ND	NS
Benzene	**1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
Chloroethane	**5**	**0.61**	**0.37**	ND	ND	ND	ND	ND	ND	ND	NS
cis-1,2-Dichloroethene	**5**	**14.7**	**17.1**	**12.0**	**11.0**	**7.4**	**9.7**	**6.1**	**4.4**	**6.5**	NS
1,1-Dichloroethane	**5**	**21.4**	**20.0**	**15.0**	**14.0**	**9.3**	**12**	**6.6**	**5.4**	**6.4**	NS
1,1-Dichloroethene	**5**	**1.06**	**1.67**	ND	ND	ND	ND	**0.93**	**0.43 J**	ND	NS
Ethylbenzene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
1,1,1-Trichloroethane	**5**	**27.4**	**24.7**	**16.0**	**14.0**	**11.0**	**11**	**9.0**	**5.3**	**6.6**	NS
1,1,2-Trichloroethane	**1**	ND	ND	ND	ND	**ND**	ND	ND	ND	ND	NS
Tetrachloroethene	**5**	**7.39**	**6.55**	**6.4**	**5.7**	**5.4**	**6**	**5.9**	**4.5**	**4.6**	NS
Toluene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
trans-1,2-Dichloroethene	**5**	ND	**0.14**	ND	ND	ND	ND	ND	ND	ND	NS
Trichloroethene	**5**	**17.8**	**15.9**	**13.0**	**13.0**	**9.9**	**12**	**9.5**	**6.4**	**8.1**	NS
Vinyl chloride	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
Xylenes (total)	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS

Notes:

Exceeds 6 NYCRR Part 703.5 Class GA Ambient Groundwater Standard or Guidance Value

ND - Not detected above reporting limit

NS - No sample collected

1 - Results presentend in ug/L or parts per billion (ppb)

2 - NYS Ambient Groundwater Standards (6 NYCRR Part 703.5)

* - NYSDEC Guidance Value (TOGS 1.1.1)

NOTE: Sample results are illustrated for all available data. Not all wells were sampled during each sampling event presented in this table.

Village of Cuba Landfill Site
NYSDEC Site #902012
Periodic Review Report (2020)

Table 3 - Baseline Leachate Indicator & Inorganic Parameters Detected in Groundwater & Surface Water

Baseline Parameter List	USEPA Method	NYSDEC Ambient Water Quality Standard Class GA	Sample ID	MW-1S						MW-1D						MW-3					
			Sample Type	Water						Water						Water					
			Sample Date	7/14/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20	7/14/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20	7/14/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20
Leachate Indicators																					
Alkalinity, as CaCO3	SM 2320 B	---	mg/L	70.3	NS	NS	NS	NS	NS	75.7	NS	NS	NS	NA	NA	NS	NS	NS	NS	NS	NS
Ammonia (as N)	E350.1	2(s)	mg/L	0.123	NS	NS	NS	NS	NS	ND	NS	NS	NS	NA	NA	NS	NS	NS	NS	NS	NS
Biochemical oxygen demand (BOD5)	SM5210B	---	mg/L	4.5	NS	NS	NS	NS	NS	ND	NS	NS	NS	NA	NA	NS	NS	NS	NS	NS	NS
Bromide	300	2(g)	mg/L	ND	NS	NS	NS	NS	NS	ND	NS	NS	NS	NA	NA	NS	NS	NS	NS	NS	NS
Chemical Oxygen Demand	E410.4	---	mg/L	ND	NS	NS	NS	NS	NS	ND	NS	NS	NS	NA	NA	NS	NS	NS	NS	NS	NS
Chloride	300	250(s)	mg/L	ND	NS	NS	NS	NS	NS	9.8	NS	NS	NS	NA	NA	NS	NS	NS	NS	NS	NS
Color	SM2120B	---	color units	32	NS	NS	NS	NS	NS	18	NS	NS	NS	NA	NA	NS	NS	NS	NS	NS	NS
Hardness, Calcium/Magnesium (as CaCO3)	M2340B	---	mg/L	86.8	NS	NS	NS	NS	NS	86.1	NS	NS	NS	NA	NA	NS	NS	NS	NS	NS	NS
Kjeldahl Nitrogen - Total (as N)	E351.2	---	mg/L	0.6	NS	NS	NS	NS	NS	0.4	NS	NS	NS	NA	NA	NS	NS	NS	NS	NS	NS
Nitrate (as N)	300	10(s)	mg/L	ND	NS	NS	NS	NS	NS	ND	NS	NS	NS	NA	NA	NS	NS	NS	NS	NS	NS
Organic carbon-Total (TOC)	SM5310B	---	mg/L	1	NS	NS	NS	NS	NS	1.7	NS	NS	NS	NA	NA	NS	NS	NS	NS	NS	NS
Phenolics, Total Recoverable	420.4	0.001(s)	mg/L	ND	NS	NS	NS	NS	NS	ND	NS	NS	NS	NA	NA	NS	NS	NS	NS	NS	NS
Residue-filterable (TDS)	SM2540C	---	mg/L	111	NS	NS	NS	NS	NS	125	NS	NS	NS	NA	NA	NS	NS	NS	NS	NS	NS
Sulfate (as SO4)	300	250(s)	mg/L	9.1	NS	NS	NS	NS	NS	10.8	NS	NS	NS	NA	NA	NS	NS	NS	NS	NS	NS
Inorganic Parameters																					
Aluminum	SW6010C	---	µg/L	14600	NS	13400	NS	NS	NS	5180	NS	28700	1220	240	3950	NS	NS	NS	NS	NS	NS
Antimony	SW6010C	3 (g)	µg/L	ND	NS	ND	NS	NS	NS	ND	NS	0.68 J	1.6 J	ND	ND	NS	NS	NS	NS	NS	NS
Arsenic	SW6010C	25 (s)	µg/L	ND	NS	7.79	NS	NS	NS	ND	NS	4.25	0.28 J	ND	ND	NS	NS	NS	NS	NS	NS
Barium	SW6010C	1000 (s)	µg/L	159	NS	216.2	NS	NS	NS	30.6	NS	184.8	7.72	ND	61.8	NS	NS	NS	NS	NS	NS
Beryllium	SW6010C	3 (g)	µg/L	ND	NS	0.83	NS	NS	NS	ND	NS	1.6	ND	ND	0.2 J	NS	NS	NS	NS	NS	NS
Boron	SW6010C	1000 (s)	µg/L	ND	NS	NA	NS	NS	NS	ND	NS	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS
Cadmium	SW6010C	5	µg/L	ND	NS	0.06 J	NS	NS	NS	ND	NS	1.19	ND	ND	ND	NS	NS	NS	NS	NS	NS
Calcium	SW6010C	---	µg/L	22200	NS	27800	NS	NS	NS	18700	NS	26900	23100	18800	25300	NS	NS	NS	NS	NS	NS
Chromium	SW6010C	50 (s)	µg/L	19.9	NS	21.47	NS	NS	NS	ND	NS	43.25	0.29 J	ND	5.4 J	NS	NS	NS	NS	NS	NS
Chromium, Hexavalent	SW6010C	50 (s)	µg/L	ND	NS	NA	NS	NS	NS	ND	NS	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS
Cobalt	SW6010C	---	µg/L	ND	NS	14.5	NS	NS	NS	ND	NS	27.42	ND	ND	1.4 J	NS	NS	NS	NS	NS	NS
Copper	SW6010C	200 (s)	µg/L	ND	NS	24.27	NS	NS	NS	95.5	NS	**689.5**	2.67	ND	6.6 J	NS	NS	NS	NS	NS	NS
Cyanide, Total	SW6010C	200 (s)	µg/L	ND	NS	NA	NS	NS	NS	ND	NS	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS
Iron	SW6010C	300 (a)	µg/L	18300	NS	30800	NS	NS	NS	3410	NS	44100	128	420	4150	NS	NS	NS	NS	NS	NS
Lead	SW6010C	25	µg/L	7.4	NS	15.53	NS	NS	NS	6.8	NS	**268**	2.99	ND	ND	NS	NS	NS	NS	NS	NS
Magnesium	SW6010C	35,000 (g)	µg/L	7580	NS	8700	NS	NS	NS	9600	NS	17000	9280	8800	4720	NS	NS	NS	NS	NS	NS
Manganese	SW6010C	300 (a)	µg/L	509	NS	983.2	NS	NS	NS	82.9	NS	1096	9.48	23	125	NS	NS	NS	NS	NS	NS
Mercury	SW7470A	0.7 (s)	µg/L	ND	NS	ND	NS	NS	NS	ND	NS	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS
Nickel	SW6010C	100 (s)	µg/L	ND	NS	29.69	NS	NS	NS	ND	NS	62.44	ND	ND	ND	NS	NS	NS	NS	NS	NS
Potassium	SW6010C	---	µg/L	5970	NS	3140	NS	NS	NS	2780	NS	5470	1160	ND	2100	NS	NS	NS	NS	NS	NS
Selenium	SW6010C	10 (s)	µg/L	ND	NS	1.93 J	NS	NS	NS	ND	NS	3.61 J	ND	ND	ND	NS	NS	NS	NS	NS	NS
Silver	SW6010C	50 (s)	µg/L	ND	NS	ND	NS	NS	NS	ND	NS	1.51	ND	ND	ND	NS	NS	NS	NS	NS	NS
Sodium	SW6010C	20,000(s)	µg/L	2200	NS	1840	NS	NS	NS	3670	NS	3480	3980	3600	2080	NS	NS	NS	NS	NS	NS
Vanadium	SW6010C	---	µg/L	ND	NS	14.85	NS	NS	NS	ND	NS	34.12	ND	ND	5.3 J	NS	NS	NS	NS	NS	NS
Zinc	SW6010C	2,000 (g)	µg/L	55.3	NS	75.59	NS	NS	NS	37.7	NS	280.7	ND	ND	18.1 J	NS	NS	NS	NS	NS	NS

Baseline Parameter List	MW-4						MW-7						MW-8					
Sample Type	Water						Water						Water					
Sample Date	7/15/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20	7/15/14	10/24/16	3/23/17	5/9/18	9/20/19	10/27/20	7/15/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20
Leachate Indicators																		
Alkalinity, as CaCO3	156	NA	NA	NA	NA	NA	177	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA
Ammonia (as N)	0.444	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA
Biochemical oxygen demand (BOD5)	9.2	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA
Bromide	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA
Chemical Oxygen Demand	22.1	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA
Chloride	2.1	NA	NA	NA	NA	NA	24.5	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA
Color	13	NA	NA	NA	NA	NA	14	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA
Hardness, Calcium/Magnesium (as CaCO3)	169	NA	NA	NA	NA	NA	241	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA
Kjeldahl Nitrogen - Total (as N)	0.67	NA	NA	NA	NA	NA	0.71	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA
Nitrate (as N)	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA
Organic carbon-Total (TOC)	7.8	NA	NA	NA	NA	NA	1.2	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA
Phenolics, Total Recoverable	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA
Residue-filterable (TDS)	168	NA	NA	NA	NA	NA	277	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA
Sulfate (as SO4)	8.3	NA	NA	NA	NA	NA	23	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA
Inorganic Parameters																		
Aluminum	709	740	37.7	12.2	1020	ND	32900	NA	4719	1310	6400	2520	6800	17600	17900	288	34900	25700
Antimony	ND	ND	ND	ND	ND	ND	ND	NA	0.68 J	.57 J	ND	ND	ND	ND	ND	.47 J	ND	ND
Arsenic	ND	ND	ND	ND	ND	ND	17.5	NA	3.31	0.86	ND	ND	ND	ND	8.7	.30 J	18	12
Barium	20.7	34	12.72	14.57	51	20.3	277	NA	88.04	59.85	87	65.8	51.1	158	311.2	48.49	215	140
Beryllium	ND	ND	ND	ND	ND	ND	ND	NA	0.37 J	.29 J	ND	ND	ND	ND	1.76	ND	ND	1.2 J
Boron	ND	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA
Cadmium	ND	ND	0.13 J	ND	ND	ND	ND	NA	1.08	0.56	ND	ND	ND	ND	0.4	ND	ND	ND
Calcium	48900	30700	31000	31100	38400	50500	46800	NA	50200	53200	48900	52100	28000	33300	46000	39400	36600	38000
Chromium	ND	ND	ND	.25J	ND	ND	47.3	NA	13.55	1.78	ND	3.5 J	ND	23	24.73	.65 J	44	29
Chromium, Hexavalent	ND	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA
Cobalt	ND	ND	ND	ND	ND	ND	ND	NA	5.36	0.77	ND	1.2 J	ND	ND	31.38	.29 J	ND	12.6 J
Copper	ND	ND	0.95 J	1.39	ND	ND	**4990**	NA	114.8	27.47	ND	5.9 J	ND	53	**203.8**	2.33 J	91	51.7
Cyanide, Total	ND	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA	NA
Iron	1050	1230	67.3	73	1490	ND	40700	NA	10200	1830	6090	2350	5780	20900	34400	588	45300	28800
Lead	ND	ND	ND	ND	ND	ND	**499**	NA	21.57	6.84	3 J	ND	ND	ND	**28.11**	.40 J	9 J	6.1 J
Magnesium	11500	8800	7170	786	10000	12000	30000	NA	23700	24000	25200	24800	13200	14200	20100	12800	22300	19200
Manganese	1090	2170	4115	1840	8080	4980	961	NA	348.2	66.68	146	49.1	65.9	333	1231	8.82	610	381
Mercury	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ND	ND	5.04	3.14	ND	2.8 J	77.3	NA	11.66	1.92 J	ND	ND	ND	ND	43.56	.77 J	ND	23.1 J
Potassium	3800	2500	2250	2280	2800	2690	10600	NA	2940	2240	3600	2720	3390	6500	4520	1470	12300	9310
Selenium	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	5.45	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	4340	4000	2850	3120	3800	4620	6170	NA	5940	6760	6300	6760	4520	5000	4500	5050	5300	5380
Vanadium	ND	ND	ND	ND	ND	ND	ND	NA	6.89	ND	ND	3.2 J	ND	ND	24.61	ND	50	34.3 J
Zinc	ND	ND	8.01 J	6.07 J	ND	ND	584	NA	49.47	14.61	ND	9.4 J	ND	51	13.61	ND	121	77.2

Baseline Parameter List	MW-9						MW-10						8354 Jackson Hill				
Sample Type	Water						Water						Water				
Sample Date	7/14/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20	7/15/14	10/24/16	3/23/17	5/9/18	9/19/19	10/27/20	10/24/2016	3/23/2017	5/9/2018	9/19/2019	10/27/2020
Leachate Indicators																	
Alkalinity, as CaCO3	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA
Ammonia (as N)	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA
Biochemical oxygen demand (BOD5)	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA
Bromide	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA
Chemical Oxygen Demand	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA
Chloride	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA
Color	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA
Hardness, Calcium/Magnesium (as CaCO3)	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA
Kjeldahl Nitrogen - Total (as N)	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA
Nitrate (as N)	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA
Organic carbon-Total (TOC)	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA
Phenolics, Total Recoverable	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA
Residue-filterable (TDS)	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA
Sulfate (as SO4)	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NA
Inorganic Parameters																	
Aluminum	NS	NS	NS	NS	NS	NS	NS	3080	1500	100	NS	NS	ND	148	90	230	NS
Antimony	NS	NS	NS	NS	NS	NS	NS	ND	0.56 J	.46 J	NS	NS	ND	0.85 J	ND	ND	NS
Arsenic	NS	NS	NS	NS	NS	NS	NS	ND	2.7	1.11	NS	NS	ND	0.55 J	.20 J	ND	NS
Barium	NS	NS	NS	NS	NS	NS	NS	941	53.01	16.98	NS	NS	48	37.12	30.16	49	NS
Beryllium	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	NS	NS	ND	ND	ND	ND	NS
Boron	NS	NS	NS	NS	NS	NS	NS	ND	NA	NA	NS	NS	ND	NA	NA	NA	NS
Cadmium	NS	NS	NS	NS	NS	NS	NS	ND	0.35	0.2	NS	NS	ND	0.74	ND	ND	NS
Calcium	NS	NS	NS	NS	NS	NS	NS	117000	112000	46000	NS	NS	18500	17100	14200	18300	NS
Chromium	NS	NS	NS	NS	NS	NS	NS	ND	9.61	3.15	NS	NS	ND	0.99	.25 J	ND	NS
Chromium, Hexavalent	NS	NS	NS	NS	NS	NS	NS	ND	NA	NA	NS	NS	NA	NA	NA	NA	NS
Cobalt	NS	NS	NS	NS	NS	NS	NS	ND	1.44	.25 J	NS	NS	ND	ND	ND	ND	NS
Copper	NS	NS	NS	NS	NS	NS	NS	ND	6.89	3.5	NS	NS	140	2.75	2.05	ND	NS
Cyanide, Total	NS	NS	NS	NS	NS	NS	NS	NA	NA	NA	NS	NS	NA	NA	NA	NA	NS
Iron	NS	NS	NS	NS	NS	NS	NS	3920	2730	175	NS	NS	3170	315	134	320	NS
Lead	NS	NS	NS	NS	NS	NS	NS	ND	2.05	1.8	NS	NS	**89**	7.02	3.06	ND	NS
Magnesium	NS	NS	NS	NS	NS	NS	NS	33000	17200	14900	NS	NS	5500	4740	3580	5700	NS
Manganese	NS	NS	NS	NS	NS	NS	NS	1710	122.1	13.77	NS	NS	47	15.2	13	ND	NS
Mercury	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	NS	NS	ND	ND	ND	ND	NS
Nickel	NS	NS	NS	NS	NS	NS	NS	ND	**350**	ND	NS	NS	ND	0.56 J	ND	ND	NS
Potassium	NS	NS	NS	NS	NS	NS	NS	14800	4130	5570	NS	NS	ND	1710	1620	2100	NS
Selenium	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	NS	NS	ND	ND	ND	ND	NS
Silver	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	NS	NS	ND	ND	ND	ND	NS
Sodium	NS	NS	NS	NS	NS	NS	NS	**28300**	17900	16200	NS	NS	13900	14800	13700	17400	NS
Vanadium	NS	NS	NS	NS	NS	NS	NS	ND	4.96	ND	NS	NS	ND	ND	ND	ND	NS
Zinc	NS	NS	NS	NS	NS	NS	NS	23	20.48	5.40 J	NS	NS	343	59.6	ND	ND	NS

Table 3 - Baseline Leachate Indicator & Inorganic Parameters Detected in Groundwater & Surface Water

Baseline Parameter List	USEPA Method	NYSDEC Ambient Water Quality Standard Class GA	Sample ID	MW-10D						MW-11						MW-12					
			Sample Type	Water						Water						Water					
			Sample Date	7/14/2014	10/24/2016	3/23/2017	5/9/2018	9/19/2019	10/27/2020	7/14/2014	10/24/2016	3/23/2017	5/9/2018	9/19/2019	10/27/2020	7/14/2014	10/24/2016	3/23/2017	5/9/2018	9/19/2019	10/27/2020
Leachate Indicators																					
Alkalinity, as CaCO3	SM 2320 B	---	mg/L	177	NA	NA	NA	NA	NA	154	NA	NA	NA	NA	NA	356	NA	NA	NA	NA	NA
Ammonia (as N)	E350.1	2(s)	mg/L	ND	NA	NA	NA	NA	NA	0.148	NA	NA	NA	NA	NA	0.109	NA	NA	NA	NA	NA
Biochemical oxygen demand (BOD5)	SM5210B	---	mg/L	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA
Bromide	300	2(g)	mg/L	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA
Chemical Oxygen Demand	E410.4	---	mg/L	ND	NA	NA	NA	NA	NA	9.8	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA
Chloride	300	250(s)	mg/L	14.5	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	2.8	NA	NA	NA	NA	NA
Color	SM2120B	---	color units	12	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	17	NA	NA	NA	NA	NA
Hardness, Calcium/Magnesium (as CaCO3)	M2340B	---	mg/L	186	NA	NA	NA	NA	NA	147	NA	NA	NA	NA	NA	334	NA	NA	NA	NA	NA
Kjeldahl Nitrogen - Total (as N)	E351.2	---	mg/L	ND	NA	NA	NA	NA	NA	0.58	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA
Nitrate (as N)	300	10(s)	mg/L	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA
Organic carbon-Total (TOC)	SM5310B	---	mg/L	1.7	NA	NA	NA	NA	NA	3.7	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA
Phenolics, Total Recoverable	420.4	0.001(s)	mg/L	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA
Residue-filterable (TDS)	SM2540C	---	mg/L	226	NA	NA	NA	NA	NA	182	NA	NA	NA	NA	NA	393	NA	NA	NA	NA	NA
Sulfate (as SO4)	300	250(s)	mg/L	26.1	NA	NA	NA	NA	NA	7.6	NA	NA	NA	NA	NA	28.3	NA	NA	NA	NA	NA
Inorganic Parameters																					
Aluminum	SW6010C	---	µg/L	464	1950	1.9	290	490	305	1750	10400	1580	2250	13000	10500	11400	2540	24000	2220	16200	37400
Antimony	SW6010C	3 (g)	µg/L	ND	ND	ND	1.26 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.51 J	ND	ND	ND
Arsenic	SW6010C	25 (s)	µg/L	ND	ND	1.94	0.42 J	ND	ND	ND	ND	1.3	0.26 J	ND	ND	ND	ND	10.39	1.62	ND	18.5
Barium	SW6010C	1000 (s)	µg/L	48.7	862	89.74	101.2	48	35.1	26.7	63	32.31	15.18	93	68.4	101	79	345.7	71.64	146	249
Beryllium	SW6010C	3 (g)	µg/L	ND	ND	0.13 J	ND	ND	ND	ND	ND	ND	ND	ND	0.40 J	ND	ND	1.21	ND	ND	1.3 J
Boron	SW6010C	1000 (s)	µg/L	ND	ND	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA
Cadmium	SW6010C	5	µg/L	ND	ND	ND	0.1 J	ND	ND	ND	ND	0.27	0.06 J	ND	ND	ND	ND	0.26	ND	ND	ND
Calcium	SW6010C	---	µg/L	42900	103000	45500	40800	41700	45900	41300	8300	42700	42700	39400	78200	69200	76100	93100	80700	79200	82200
Chromium	SW6010C	50 (s)	µg/L	ND	ND	2.72	0.64 J	ND	1.6 J	ND	12	2.08	0.42 J	13	105	16	ND	39.68	3.5	20	44.7
Chromium, Hexavalent	SW6010C	50 (s)	µg/L	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA
Cobalt	SW6010C	---	µg/L	ND	ND	3.22	1.12	ND	ND	ND	ND	1.59	0.2 J	ND	3.3 J	ND	ND	31.38	2.04	ND	17.5 J
Copper	SW6010C	200 (s)	µg/L	ND	ND	3.99	7.32	ND	ND	ND	ND	3.87	0.85 J	ND	6.9 J	ND	ND	42.28	3.79	ND	28.4
Cyanide, Total	SW6010C	200 (s)	µg/L	ND	NS	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA
Iron	SW6010C	300 (a)	µg/L	470	2550	3900	487	450	355	1600	13400	2850	3640	12800	8830	14400	3130	50700	4150	19600	43800
Lead	SW6010C	25	µg/L	ND	ND	1.49	1.4	ND	ND	ND	ND	1.88	0.46 J	4 J	3.0 J	ND	ND	**31.72**	2.57	6 J	17.3 J
Magnesium	SW6010C	35,000 (g)	µg/L	19300	34000	16700	17000	18900	19800	10800	3100	9660	9560	11100	18000	39300	36100	46300	30500	43200	46600
Manganese	SW6010C	300 (a)	µg/L	95.5	1200	2352	443	219	64.2	855	462	1824	84.14	2190	784	335	314	6411	413.6	958	2450
Mercury	SW7470A	0.7 (s)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	SW6010C	100 (s)	µg/L	ND	ND	5.63	1.32 J	ND	ND	ND	ND	4.36	0.62 J	ND	5.3 J	ND	ND	52.44	4.29	ND	31.0 J
Potassium	SW6010C	---	µg/L	2520	16600	2430	7730	2200	2060	2290	4500	2110	1920	5700	5230	10500	5800	9930	5640	9100	13600
Selenium	SW6010C	10 (s)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.60 J	ND	ND	ND
Silver	SW6010C	50 (s)	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	SW6010C	20,000(s)	µg/L	17300	**29700**	**21800**	**23200**	15300	16000	3610	2000	2980	3160	3500	5030	**21500**	**22700**	**21900**	19600	**23800**	**25200**
Vanadium	SW6010C	---	µg/L	ND	ND	2.66 J	ND	ND	ND	ND	ND	2.45 J	ND	ND	14.6 J	ND	ND	29.54	3.23 J	ND	47.2 J
Zinc	SW6010C	2,000 (g)	µg/L	ND	ND	13.92	19.52	ND	ND	ND	45	16.14	ND	46	38.9	34.4	ND	141.1	11.4	46	102

Baseline Parameter List	MW-13						SW-01						SW-02					
Sample Type	Water						Water						Water					
Sample Date	7/14/2014	10/24/2016	3/23/2017	5/9/2018	9/19/2019	10/27/2020	7/15/2014	10/24/2016	3/23/2017	5/9/2018	9/19/2019	10/27/2020	7/15/2014	10/24/2016	3/23/2017	5/9/2018	9/19/2019	10/27/2020
Leachate Indicators																		
Alkalinity, as CaCO3	199	NA	NA	NA	NA	NA	116	NA	NA	NA	NS	NS	13.2	NS	NS	NS	NS	NS
Ammonia (as N)	0.15	NA	NA	NA	NA	NA	ND	NA	NA	NA	NS	NS	ND	NS	NS	NS	NS	NS
Biochemical oxygen demand (BOD5)	ND	NA	NA	NA	NA	NA	3.9	NA	NA	NA	NS	NS	ND	NS	NS	NS	NS	NS
Bromide	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NS	NS	ND	NS	NS	NS	NS	NS
Chemical Oxygen Demand	ND	NA	NA	NA	NA	NA	51.8	NA	NA	NA	NS	NS	35.5	NS	NS	NS	NS	NS
Chloride	ND	NA	NA	NA	NA	NA	8.7	NA	NA	NA	NS	NS	ND	NS	NS	NS	NS	NS
Color	17	NA	NA	NA	NA	NA	130	NA	NA	NA	NS	NS	90	NS	NS	NS	NS	NS
Hardness, Calcium/Magnesium (as CaCO3)	215	NA	NA	NA	NA	NA	114	NA	NA	NA	NS	NS	12.8	NS	NS	NS	NS	NS
Kjeldahl Nitrogen - Total (as N)	0.95	NA	NA	NA	NA	NA	4.46	NA	NA	NA	NS	NS	1.24	NS	NS	NS	NS	NS
Nitrate (as N)	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NS	NS	ND	NS	NS	NS	NS	NS
Organic carbon-Total (TOC)	1.6	NA	NA	NA	NA	NA	16.9	NA	NA	NA	NS	NS	16.8	NS	NS	NS	NS	NS
Phenolics, Total Recoverable	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NS	NS	ND	NS	NS	NS	NS	NS
Residue-filterable (TDS)	218	NA	NA	NA	NA	NA	155	NA	NA	NA	NS	NS	51	NS	NS	NS	NS	NS
Sulfate (as SO4)	11.5	NA	NA	NA	NA	NA	6	NA	NA	NA	NS	NS	ND	NS	NS	NS	NS	NS
Inorganic Parameters																		
Aluminum	34800	3560	98100	17300	16300	NS	3590	440	38.9	15	NS	NS	**285**	NS	NS	NS	NS	ND
Antimony	ND	ND	ND	ND	ND	NS	ND	ND	0.48	ND	NS	NS	ND	NS	NS	NS	NS	ND
Arsenic	13.4	ND	17.93	4.68	ND	NS	ND	ND	0.4	.49 J	NS	NS	ND	NS	NS	NS	NS	ND
Barium	223	67	**2132**	25.06	128	NS	43.7	ND	8.4	13.75	NS	NS	ND	NS	NS	NS	NS	ND
Beryllium	ND	ND	5.2	0.91	ND	NS	ND	ND	ND	ND	NS	NS	ND	NS	NS	NS	NS	ND
Boron	ND	ND	NA	NA	NA	NS	ND	ND	NA	NA	NS	NS	ND	NS	NS	NS	NS	NA
Cadmium	ND	ND	1.75	ND	ND	NS	ND	ND	ND	ND	NS	NS	ND	NS	NS	NS	NS	ND
Calcium	59500	89700	94400	57100	77300	NS	29400	20400	23800	35100	NS	NS	**3610**	NS	NS	NS	NS	4890
Chromium	**50.6**	ND	**169.7**	29.27	23	NS	ND	ND	0.18 J	ND	NS	NS	ND	NS	NS	NS	NS	ND
Chromium, Hexavalent	ND	NA	NA	NA	NA	NS	ND	NA	NA	NA	NS	NS	ND	NS	NS	NS	NS	NA
Cobalt	ND	ND	112.9	15.75	ND	NS	ND	ND	ND	ND	NS	NS	ND	NS	NS	NS	NS	ND
Copper	30.5	ND	170.1	25.29	ND	NS	21.8	ND	1.06	.66 J	NS	NS	ND	NS	NS	NS	NS	ND
Cyanide, Total	ND	NA	NA	NA	NA	NS	ND	NA	NA	NA	NS	NS	ND	NS	NS	NS	NS	NA
Iron	46300	3770	187000	33500	21900	NS	4610	1460	74.3	142	NS	NS	**370**	NS	NS	NS	NS	ND
Lead	10.8	ND	**94.83**	10.51	ND	NS	ND	ND	ND	ND	NS	NS	ND	NS	NS	NS	NS	ND
Magnesium	16100	12100	33900	11200	13400	NS	9990	3500	7070	11300	NS	NS	ND	NS	NS	NS	NS	985 J
Manganese	1040	147	12340	1092	536	NS	1010	989	6.64	11.62	NS	NS	**42.3**	NS	NS	NS	NS	5.0 J
Mercury	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	NS	NS	ND	NS	NS	NS	NS	ND
Nickel	ND	ND	**210.3**	34.04	ND	NS	ND	ND	ND	ND	NS	NS	ND	NS	NS	NS	NS	ND
Potassium	13300	5900	14700	4400	8400	NS	3200	2600	1370	1430	NS	NS	ND	NS	NS	NS	NS	907 J
Selenium	ND	ND	**21.2**	2.23 J	ND	NS	ND	ND	ND	ND	NS	NS	ND	NS	NS	NS	NS	ND
Silver	ND	ND	0.18 J	ND	ND	NS	ND	ND	ND	ND	NS	NS	ND	NS	NS	NS	NS	ND
Sodium	5580	5600	6120	4870	4100	NS	4990	2100	5680	12700	NS	NS	ND	NS	NS	NS	NS	9190
Vanadium	ND	ND	60.69	0.14	ND	NS	ND	ND	ND	ND	NS	NS	ND	NS	NS	NS	NS	ND
Zinc	113	ND	497.7	19.88	49	NS	26.7	ND	ND	ND	NS	NS	ND	NS	NS	NS	NS	ND

Baseline Parameter List	SW-03						SW-04						Blind Dup				
Sample Type	Water						Water						Water				
Sample Date	7/15/2014	10/24/2016	3/23/2017	5/9/2018	9/19/2019	10/27/2020	7/15/2014	10/24/2016	3/23/2017	5/9/2018	9/19/2019	10/27/2020	10/24/2016	3/23/2017	5/9/2018	9/19/2019	10/27/2020
Leachate Indicators																	
Alkalinity, as CaCO3	107	NA	NA	NA	NA	NA	23.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ammonia (as N)	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Biochemical oxygen demand (BOD5)	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromide	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand	35	NA	NA	NA	NA	NA	30.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	5.9	NA	NA	NA	NA	NA	2.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Color	86	NA	NA	NA	NA	NA	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Calcium/Magnesium (as CaCO3)	101	NA	NA	NA	NA	NA	17.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kjeldahl Nitrogen - Total (as N)	1.11	NA	NA	NA	NA	NA	2.12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate (as N)	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organic carbon-Total (TOC)	18	NA	NA	NA	NA	NA	20.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenolics, Total Recoverable	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Residue-filterable (TDS)	174	NA	NA	NA	NA	NA	118	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate (as SO4)	5.3	NA	NA	NA	NA	NA	3.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganic Parameters																	
Aluminum	536	600	361	10.8	ND	949	8960	640	1830	638	1130	1010	1920	23400	24900	22200	NS
Antimony	ND	ND	0.55 J	.64 J	ND	ND	ND	ND	0.63 J	ND	ND	ND	ND	0.64 J	ND	ND	NS
Arsenic	ND	ND	0.88	0.55	ND	ND	ND	ND	1.63	1.51	ND	ND	ND	9.75	5.71	ND	NS
Barium	ND	ND	8.03	13.38	ND	14.2 J	56.9	ND	17.83	10.62	ND	13.4 J	67	308.9	355	174	NS
Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.13	1.33	ND	NS
Boron	ND	ND	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	NA	NA	NA	NS
Cadmium	ND	ND	ND	.11 J	ND	ND	ND	ND	0.29	ND	ND	ND	ND	0.26	.10 J	ND	NS
Calcium	27600	4000	5510	36500	41700	6540	3690	3500	2720	4480	7300	5510	36600	91800	56400	811 00	NS
Chromium	ND	ND	0.59 J	ND	ND	1.0 J	10.2	ND	2.56	.88 J	ND	1.1 J	Nd	39.08	43.43	27	NS
Chromium, Hexavalent	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS
Cobalt	ND	ND	0.3 J	ND	ND	ND	ND	ND	1.72	.48 J	ND	ND	ND	28.39	25.21	ND	NS
Copper	ND	ND	1.72	.49 J	ND	ND	ND	ND	3.4	1.99	ND	ND	ND	38.78	36.1	ND	NS
Cyanide, Total	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS
Iron	894	510	476	73.4	140	752	8470	480	2970	858	1000	707	2950	49900	49200	25800	NS
Lead	ND	ND	0.54 J	ND	ND	2.2 J	ND	ND	4.02	.75 J	ND	ND	ND	**29.05**	**15.85**	8 J	NS
Magnesium	7720	ND	1060	11400	12700	1340	1970	ND	916	871	1700	1080	10800	48600	13600	44800	NS
Manganese	204	14	9.85	68.31	188	17.2	169	11	114.5	30.22	55	12.3	5580	5344	1933	1330	NS
Mercury	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
Nickel	ND	ND	0.90 J	ND	ND	ND	ND	ND	3.95	1.67 J	ND	ND	ND	50.54	52.7	ND	NS
Potassium	2360	2300	1360	1240	ND	2450	3970	2800	1440	1960	3500	2120	3000	9980	5150	10800	NS
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.40 J	3.20 J	ND	NS
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
Sodium	4010	5600	3500	13600	9900	4930	9490	7700	5040	5230	7700	6210	4700	**23800**	**4720**	**24400**	NS
Vanadium	ND	ND	ND	ND	ND	1.6 J	ND	ND	2.43 J	ND	ND	1.6 J	ND	28.4	28.32	ND	NS
Zinc	ND	ND	4.14 J	ND	ND	ND	30.2	ND	17.34	ND	ND	ND	ND	126.9	123.3	60	NS

Notes:

USEPA: U.S. Environmental Protection Agency

NYDEC: New York State Department of Environmental Conservation

--- = indicates no applicable standard.

µg/L = micrograms per liter.

mg/L = miligrams per liter.

ND: Not detected above minimum laboratory quantitation limit

NS: No sample collected.

NS	Wells or surface water not sampled due to dry conditions
NA	Sample collected, but not analyzed for referenced parameter
	Exceeds 6 NYCRR Part 703.5 Class GA Ambient Groundwater Standard or Guidance Value

Ambient Water Quality Standards and Guidance Values from Division of Water and Technical and Operational Guidance Series (TOGS) 1.1.1, August 1999.

* = NYSDEC Part 703.5 Guidance Value (no standard)

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.

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TABLE 4 - INSTITUTIONAL AND ENGINEERING CONTROLS COMPLIANCE SUMMARY
PERIODIC REVIEW REPORT – 2020/2021

Institutional/Engineering Control	Description	Objective	Monitoring	Performance/Status
Institutional 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.
Soil Vapor Intrusion Evaluation	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.
Engineering 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
Passive Gas Vents	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	A berm constructed of soil and waste materials below the liner system defined each swale. Following the placement of the geocompoSite drainage layer, a strip of the geocompoSite was cut out in each swale for the placement of perforated 6-in. corrugated polyethylene pipe topped with pea gravel and wrapped with geotextile that was later heat seamed to the geocompoSite on either side.	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.
Phytoremediation	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.
Access 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.

Table 5- Groundwater Elevations October 27 & 28 2020

Well ID	Casing Elevation	Depth to Water	Groundwater Elevation	Well Depth
MW-1S	2210.85	30.39	2180.46	32.7
MW-1D	2210.61	77.08	2133.53	78.64
MW-3	2099.59	(dry)	--	24.97
MW-4	2103.6	25.11	2078.49	32.1
MW-7	2075.76	83.69	1992.07	99.72
MW-8	2071.58	73	1998.58	79.31
MW-9	2201.21	(dry)	--	88.86
MW-10	2051.47	54.67	1996.8	55.25
MW-10D	2051.47	65.1	1986.37	84.77
MW-11	2103.68	26.21	2077.47	32.24
MW-12	2098.24	30.99	2067.25	39.98
MW-13	2106.95	27.95	2079	29.49

Notes

Results presented in feet

Groundwater Sampling
Field Record

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Project Name Cuba Landfill Monitoring/Inspection Job # 50191-01
Location ID MW-3 Field Sample ID _____ Sampling Event # _ _
Activity Time _____ Sample Time _____ Date 10/27/2020

SA PLIN NOTES

Initial Depth to Water _____ feet Measurement Point _____ Well Diameter _____
Final Depth to Water _____ feet Well Depth _____ feet Well Integrity:
Screen Length _____ feet Pump Intake Depth _____ Cap _____
Total Volume Purged _____ gallons PID Well Head _____ Casing _____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked _____
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth Collar _____

PUR E DATA

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

Purge Observations: _____
Purge Water Containerized: _____

EQUIP ENT DOCU ENTATION

Type of Pump: HDPE bailer
Type of Tubing: HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: _____

ANAL TICAL PARA ETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	

LOCATION NOTES

Dry.

Signature: _____
Checked By: _____

Groundwater Sampling
Field Record

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Project Name Cuba Landfill Monitoring/Inspection Job # 50191-01
Location ID MW-4 Field Sample ID _____ Sampling Event # _ _
Activity Time _____ Sample Time _____ Date 10/27/2020

SA PLIN NOTES

Initial Depth to Water 25.11 feet Measurement Point _____ Well Diameter 2”
Final Depth to Water 29.28 feet Well Depth 32.13 feet Well Integrity:
Screen Length _____ feet Pump Intake Depth _____ Cap _____
Total Volume Purged 2.75 gallons PID Well Head _____ Casing _____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked _____
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth Collar _____

PUR E DATA

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
	29.28	N/A	8.9	6.38	5.92	2.47	0.356	207.8	

Purge Observations: _____
Purge Water Containerized: _____

EQUIP ENT DOCU ENTATION

Type of Pump: HDPE bailer
Type of Tubing: HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: _____

ANAL TICAL PARA ETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	

LOCATION NOTES

Dry after 2.75 gallons purged

Signature: _____
Checked By: _____

Groundwater Sampling
Field Record

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Project Name Cuba Landfill Monitoring/Inspection Job # 50191-01
Location ID MW-7 Field Sample ID _____ Sampling Event # _ _
Activity Time _____ Sample Time _____ Date 10/27/2020

SA PLIN NOTES

Initial Depth to Water 83.69 feet Measurement Point _____ Well Diameter 2”
Final Depth to Water 83.49 feet Well Depth 99.72 feet Well Integrity:
Screen Length _____ feet Pump Intake Depth _____ Cap _____
Total Volume Purged 7.5 gallons PID Well Head _____ Casing _____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked _____
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth Collar _____

PUR E DATA

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
	83.49	N/A	9.4	7.45	5.57	54.7	0.447	210.8	

Purge Observations: _____
Purge Water Containerized: _____

EQUIP ENT DOCU ENTATION

Type of Pump: HDPE bailer
Type of Tubing: HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: _____

ANAL TICAL PARA ETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	

LOCATION NOTES

Dry after 2.75 gallons purged

Signature: _____
Checked By: _____

Groundwater Sampling
Field Record

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Project Name Cuba Landfill Monitoring/Inspection Job # 50191-01
Location ID MW-8 Field Sample ID _____ Sampling Event # _ _
Activity Time _____ Sample Time _____ Date 10/27/2020

SA PLIN NOTES

Initial Depth to Water 73.0 feet Measurement Point _____ Well Diameter 2”
Final Depth to Water 78.29 feet Well Depth 79.31 feet Well Integrity:
Screen Length _____ feet Pump Intake Depth _____ Cap _____
Total Volume Purged _____ gallons PID Well Head _____ Casing _____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked _____
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth Collar _____

PUR E DATA

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

Purge Observations: _____
Purge Water Containerized: _____

EQUIP ENT DOCU ENTATION

Type of Pump: HDPE bailer
Type of Tubing: HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: _____

ANAL TICAL PARA ETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	

LOCATION NOTES

Dry after 1.50 gallons purged

Signature: _____
Checked By: _____

Groundwater Sampling
Field Record

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Project Name Cuba Landfill Monitoring/Inspection Job # 50191-01
Location ID MW-9 Field Sample ID _____ Sampling Event # _ _
Activity Time _____ Sample Time _____ Date 10/27/2020

SA PLIN NOTES

Initial Depth to Water _____ feet Measurement Point _____ Well Diameter 2”
Final Depth to Water _____ feet Well Depth 88.86 feet Well Integrity:
Screen Length _____ feet Pump Intake Depth _____ Cap _____
Total Volume Purged _____ gallons PID Well Head _____ Casing _____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked _____
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth Collar _____

PUR E DATA

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

Purge Observations: _____
Purge Water Containerized: _____

EQUIP ENT DOCU ENTATION

Type of Pump: HDPE bailer
Type of Tubing: HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: _____

ANAL TICAL PARA ETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	

LOCATION NOTES

Dry

Signature: _____
Checked By: _____

Groundwater Sampling
Field Record

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Project Name Cuba Landfill Monitoring/Inspection Job # 50191-01
Location ID MW-10 Field Sample ID _____ Sampling Event # _ _
Activity Time _____ Sample Time _____ Date 10/27/2020

SA PLIN NOTES

Initial Depth to Water 54.67 feet Measurement Point _____ Well Diameter 2”
Final Depth to Water _____ feet Well Depth 55.25 feet Well Integrity:
Screen Length _____ feet Pump Intake Depth _____ Cap _____
Total Volume Purged _____ gallons PID Well Head _____ Casing _____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked _____
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth Collar _____

PUR E DATA

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

Purge Observations: _____
Purge Water Containerized: _____

EQUIP ENT DOCU ENTATION

Type of Pump: HDPE bailer
Type of Tubing: HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: _____

ANAL TICAL PARA ETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	

LOCATION NOTES

Dry

Signature: _____
Checked By: _____

Groundwater Sampling
Field Record

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Project Name Cuba Landfill Monitoring/Inspection Job # 50191-01
Location ID MW-10D Field Sample ID _____ Sampling Event # _ _
Activity Time _____ Sample Time _____ Date 10/27/2020

SA PLIN NOTES

Initial Depth to Water 65.1 feet Measurement Point _____ Well Diameter 2”
Final Depth to Water 84.48 feet Well Depth _____ feet Well Integrity:
Screen Length _____ feet Pump Intake Depth _____ Cap _____
Total Volume Purged _____ gallons PID Well Head _____ Casing _____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked _____
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth Collar _____

PUR E DATA

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
			9.3	7.04	6.96	30.3	0.160	24.2	

Purge Observations: _____
Purge Water Containerized: _____

EQUIP ENT DOCU ENTATION

Type of Pump: HDPE bailer
Type of Tubing: HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: _____

ANAL TICAL PARA ETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	

LOCATION NOTES

Dry

Signature: _____
Checked By: _____

Groundwater Sampling
Field Record

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Project Name Cuba Landfill Monitoring/Inspection Job # 50191-01
Location ID MW-11 Field Sample ID _____ Sampling Event # _ _
Activity Time _____ Sample Time _____ Date 10/27/2020

SA PLIN NOTES

Initial Depth to Water 26.21 feet Measurement Point _____ Well Diameter 2”
Final Depth to Water 32.01 feet Well Depth 32.24 feet Well Integrity:
Screen Length _____ feet Pump Intake Depth _____ Cap _____
Total Volume Purged 2.0 gallons PID Well Head _____ Casing _____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked _____
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth Collar _____

PUR E DATA

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
	32.01	N/A	9.0	6.40	5.67	106.6	0.411	211.7	

Purge Observations: _____
Purge Water Containerized: _____

EQUIP ENT DOCU ENTATION

Type of Pump: HDPE bailer
Type of Tubing: HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: _____

ANAL TICAL PARA ETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	

LOCATION NOTES

Dry after 2 gallons.

Signature: _____
Checked By: _____

Groundwater Sampling
Field Record

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Project Name Cuba Landfill Monitoring/Inspection Job # 50191-01
Location ID MW-12 Field Sample ID _____ Sampling Event # _ _
Activity Time _____ Sample Time _____ Date 10/27/2020

SA PLIN NOTES

Initial Depth to Water 30.99 feet Measurement Point _____ Well Diameter 2”
Final Depth to Water 37.22 feet Well Depth 39.98 feet Well Integrity:
Screen Length _____ feet Pump Intake Depth _____ Cap _____
Total Volume Purged 2.0 gallons PID Well Head _____ Casing _____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked _____
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth Collar _____

PUR E DATA

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

Purge Observations: _____
Purge Water Containerized: _____

EQUIP ENT DOCU ENTATION

Type of Pump: HDPE bailer
Type of Tubing: HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: _____

ANAL TICAL PARA ETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	

LOCATION NOTES

Dry after 0.5 gallons.

Signature: _____
Checked By: _____

Groundwater Sampling
Field Record

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Project Name Cuba Landfill Monitoring/Inspection Job # 50191-01
Location ID MW-13 Field Sample ID _____ Sampling Event # _ _
Activity Time _____ Sample Time _____ Date 10/27/2020

SA PLIN NOTES

Initial Depth to Water 27.95 feet Measurement Point _____ Well Diameter 2”
Final Depth to Water _____ feet Well Depth 29.49 feet Well Integrity:
Screen Length _____ feet Pump Intake Depth _____ Cap _____
Total Volume Purged 2.0 gallons PID Well Head _____ Casing _____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked _____
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth Collar _____

PUR E DATA

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

Purge Observations: _____
Purge Water Containerized: _____

EQUIP ENT DOCU ENTATION

Type of Pump: HDPE bailer
Type of Tubing: HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: _____

ANAL TICAL PARA ETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	

LOCATION NOTES

Dry after 0.5 gallons.

Signature: _____
Checked By: _____

Groundwater Sampling
Field Record

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Project Name Cuba Landfill Monitoring/Inspection Job # 50191-01
Location ID SW-1 Field Sample ID _____ Sampling Event # _ _
Activity Time _____ Sample Time _____ Date 10/27/2020

SA PLIN NOTES

Initial Depth to Water _____ feet Measurement Point _____ Well Diameter 2”
Final Depth to Water _____ feet Well Depth _____ feet Well Integrity:
Screen Length _____ feet Pump Intake Depth _____ Cap _____
Total Volume Purged _____ gallons PID Well Head _____ Casing _____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked _____
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth Collar _____

PUR E DATA

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

Purge Observations: _____
Purge Water Containerized: _____

EQUIP ENT DOCU ENTATION

Type of Pump: HDPE bailer
Type of Tubing: HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: _____

ANAL TICAL PARA ETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	

LOCATION NOTES

Not Sampled

Signature: _____
Checked By: _____

Groundwater Sampling
Field Record

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Project Name Cuba Landfill Monitoring/Inspection Job # 50191-01
Location ID SW-2 Field Sample ID _____ Sampling Event # _ _
Activity Time _____ Sample Time _____ Date 10/27/2020

SA PLIN NOTES

Initial Depth to Water _____ feet Measurement Point _____ Well Diameter 2”
Final Depth to Water _____ feet Well Depth _____ feet Well Integrity:
Screen Length _____ feet Pump Intake Depth _____ Cap _____
Total Volume Purged _____ gallons PID Well Head _____ Casing _____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked _____
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth Collar _____

PUR E DATA

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
10:30	N/A	N/A							

Purge Observations: _____
Purge Water Containerized: _____

EQUIP ENT DOCU ENTATION

Type of Pump: HDPE bailer
Type of Tubing: HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: _____

ANAL TICAL PARA ETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	

LOCATION NOTES

Turbid, No Odor

Signature: _____
Checked By: _____

Groundwater Sampling
Field Record

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Project Name Cuba Landfill Monitoring/Inspection Job # 50191-01
Location ID SW-3 Field Sample ID _____ Sampling Event # _ _
Activity Time 11:45 Sample Time _____ Date 10/27/2020

SA PLIN NOTES

Initial Depth to Water _____ feet Measurement Point _____ Well Diameter 2”
Final Depth to Water _____ feet Well Depth _____ feet Well Integrity:
Screen Length _____ feet Pump Intake Depth _____ Cap _____
Total Volume Purged _____ gallons PID Well Head _____ Casing _____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked _____
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth Collar _____

PUR E DATA

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
11:45	N/A	N/A	8.8	6.80	7.62	106.6	0.106	143.8	

Purge Observations: _____
Purge Water Containerized: _____

EQUIP ENT DOCU ENTATION

Type of Pump: HDPE bailer
Type of Tubing: HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: _____

ANAL TICAL PARA ETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	

LOCATION NOTES

Turbid, no odor.

Signature: _____
Checked By: _____

Groundwater Sampling
Field Record

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Project Name Cuba Landfill Monitoring/Inspection Job # 50191-01
Location ID SW-4 Field Sample ID _____ Sampling Event # _ _
Activity Time 09:25 Sample Time _____ Date 10/27/2020

SA PLIN NOTES

Initial Depth to Water _____ feet Measurement Point _____ Well Diameter 2”
Final Depth to Water _____ feet Well Depth _____ feet Well Integrity:
Screen Length _____ feet Pump Intake Depth _____ Cap _____
Total Volume Purged _____ gallons PID Well Head _____ Casing _____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked _____
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth Collar _____

PUR E DATA

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
09:25	N/A	N/A	8.1	7.84	86.7	9.97	0.076	168.0	

Purge Observations: _____
Purge Water Containerized: _____

EQUIP ENT DOCU ENTATION

Type of Pump: HDPE bailer
Type of Tubing: HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: _____

ANAL TICAL PARA ETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	

LOCATION NOTES

Turbid, no odor.

Signature: _____
Checked By: _____

Groundwater Sampling
Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Cuba Landfill Monitoring/Inspection Job # 50191-01
Location ID MW-1D Field Sample ID _____ Sampling Event # _ _
Activity Time _____ Sample Time _____ Date 10/27/2020

SA PLIN NOTES

Initial Depth to Water 77.08 feet Measurement Point _____ Well Diameter _____
Final Depth to Water _____ feet Well Depth 78.64 feet Well Integrity:
Screen Length _____ feet Pump Intake Depth _____ Cap _____
Total Volume Purged _____ gallons PID Well Head _____ Casing _____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked _____
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth Collar _____

PUR E DATA

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

Purge Observations: _____
Purge Water Containerized: _____

EQUIP ENT DOCU ENTATION

Type of Pump: HDPE bailer
Type of Tubing: HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: _____

ANAL TICAL PARA ETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	

LOCATION NOTES

Not enough to sample

Signature: _____
Checked By: _____

Groundwater Sampling
Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Cuba Landfill Monitoring/Inspection Job # 50191-01
Location ID MW-1S Field Sample ID _____ Sampling Event # _ _
Activity Time _____ Sample Time _____ Date 10/27/2020

SA PLIN NOTES

Initial Depth to Water 30.39 feet Measurement Point _____ Well Diameter _____
Final Depth to Water 31.71 feet Well Depth 32.7 feet Well Integrity:
Screen Length _____ feet Pump Intake Depth _____ Cap _____
Total Volume Purged _____ gallons PID Well Head _____ Casing _____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked _____
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth Collar _____

PUR E DATA

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

Purge Observations: _____
Purge Water Containerized: _____

EQUIP ENT DOCU ENTATION

Type of Pump: HDPE bailer
Type of Tubing: HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: _____

ANAL TICAL PARA ETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	

LOCATION NOTES

Not enough water to obtain readings

Signature: _____

Groundwater Sampling
Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name Cuba Landfill Monitoring/Inspection Job # 50191-01
Location ID MW-2 Field Sample ID _____ Sampling Event # _ _
Activity Time _____ Sample Time _____ Date 10/27/2020

SA PLIN NOTES

Initial Depth to Water 3.0 feet Measurement Point _____ Well Diameter _____
Final Depth to Water 5.23 feet Well Depth 5.95 feet Well Integrity:
Screen Length _____ feet Pump Intake Depth _____ Cap _____
Total Volume Purged 0.75 gallons PID Well Head _____ Casing _____
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked _____
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth Collar _____

PUR E DATA

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
						1015			

Purge Observations: _____
Purge Water Containerized: _____

EQUIP ENT DOCU ENTATION

Type of Pump: HDPE bailer
Type of Tubing: HDPE
Type of Water Quality Meter: Horiba U-22; LaMotte 2020 Calibrated: _____

ANAL TICAL PARA ETERS

Parameter	Volumes	Sample Collected
VOCs	3 x 40 ml	

LOCATION NOTES

Dry after 0.5 gallons purged.

Signature: _____
Checked By: _____

Photo No. 1 Top of Site Facing Southwest

Photo No. 2 Top of Site Facing Southeast

Photo No. 3 Willows Facing Northwest

Photo No. 4 Lower Access Roadway Facing East

Photo No.5 Sampling MW-7 Facing North

Photo No. 6 Lower Access Road Facing West

November 23, 2020 Service Request No:R2010208

Ben Seifert
LU Engineers
339 East Avenue
Suite 200
Rochester, NY 14604

Laboratory Results for: Cuba LandFill

Dear Ben,

Enclosed are the results of the sample(s) submitted to our laboratory October 29, 2020
For your reference, these analyses have been assigned our service request number **R2010208.**

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

CC: Greg Andrus

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

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

ALS Environmental

Client: LU Engineers
Project: Cuba LandFill
Sample Matrix: Water

Service Request: R2010208
Date Received: 10/29/2020

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 10/29/2020. 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.

Metals:

No significant anomalies were noted with this analysis.

Volatiles by GC/MS:

Method 8260C, 11/06/2020: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Method 8260C, 11/06/2020: 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.

Method 8260C, 11/06/2020: The upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.

Approved by _____ Date 11/23/2020

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

Client: LU Engineers **Service Request:**R2010208
Project: Cuba LandFill/50191-01

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2010208-001	SW-4	10/27/2020	0900
R2010208-002	SW-3	10/27/2020	0915
R2010208-003	SW-2	10/27/2020	0940
R2010208-004	MW-4	10/27/2020	1125
R2010208-005	MW-11	10/27/2020	1135
R2010208-006	MW-8	10/27/2020	1330
R2010208-007	MW-7	10/27/2020	1445
R2010208-008	MW-2	10/28/2020	0845
R2010208-009	MW-12	10/28/2020	0910
R2010208-010	MW-1D	10/28/2020	1000
R2010208-011	MW-10D	10/28/2020	1130
R2010208-012	Trip Blank	10/28/2020	

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

004442

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 2

Project Name: Cuba LandFill	Project Number: 50191-01
Project Manager: Ben Seifert	Report CC:
Company/Address: LU Engineers 339 East Avenue Suite 200 Rochester, NY 14604	
Phone #: 585-385-7417	Email: bseifert@luengineers.com
Sampler's Signature:	Sampler's Printed Name: Ben Seifert

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ○ 8260 ○ 624 ○ CLP	GC/MS SVOAs ○ 8270 ○ 625	GC VOAs ○ 8021 ○ 601/602	PESTICIDES ○ 8081 ○ 608	PCBs ○ 8082 ○ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	TAL Metals	TCL VOCs							REMARKS/ ALTERNATE DESCRIPTION
SW-4		10/27/20	9:00	GW	5								✓	✓							
SW-3		10/27/20	9:15	GW																	
SW-2		10/27/20	9:40	GW																	
SW-2 MS		10/27/20	9:40	GW																	
SW-2 MSD		10/27/20	9:40	GW																	
MW-4		10/27/20	11:25	GW																	
MW-11		10/27/20	11:35	GW																	
MW-8		10/27/20	13:30	GW																	
MW-7		10/27/20	14:45	GW																	
MW-2		10/28/20	8:45	GW																	
MW-12		10/28/20	9:10	GW																	

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other

SPECIAL INSTRUCTIONS/COMMENTS
Metals
- Need category B deliverables

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED

TURNAROUND REQUIREMENTS
___ RUSH (SURCHARGES APPLY)
___ 1 day ___ 2 day ___ 3 day
___ 4 day ___ 5 day
✓ Standard (10 business days-No Surcharge)

REQUESTED REPORT DATE

REPORT REQUIREMENTS
___ I. Results Only
___ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
✓ III. Results + QC and Calibration Summaries Cat B?
___ IV. Data Validation Report with Raw Data

Edata ✓ Yes ___ No

INVOICE INFORMATION
PO # 50191-01
BILL TO: Greg Andrus
LU Engineers

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature:	Signature:	Signature:	Signature:	Signature:	
Printed Name: Ben Seifert	Printed Name: Daniel Wild	Printed Name:	Printed Name:	Printed Name:	
Firm: LU Engineers	Firm: ALS	Firm:	Firm:	Firm:	
Date/Time: 10/29/20 11:40	Date/Time: 10/29/2020 1700	Date/Time:	Date/Time:	Date/Time:	

R2010208 5
LU Engineers
Cuba LandFill

Distribution: White - Lab Copy; Yellow - Return to Originator

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

004162

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 2 OF 2

Project Name: Cuba Landfill	Project Number: 50191-01
Project Manager: Ben Seifert	Report CC:
Company/Address: LU Engineers	
Phone #: 585-385-7417	Email:
Sampler's Signature:	Sampler's Printed Name: Ben Seifert

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs • 8260 • 624 • CLP	GC/MS SVOAs • 8270 • 625	GC VOAs • 8021 • 8011/602	PESTICIDES • 8081 • 608	PCBs • 8082 • 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	TAL Metals	TAL VOCs
MW-1D		10/28/20	10:00	GW	5									
MW-10D		10/28/20	11:30	GW	5									
Trip Blank				WA	3									

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

REMARKS/ ALTERNATE DESCRIPTION

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day
✓ Standard (10 business days-No Surcharge)

REQUESTED REPORT DATE _____

REPORT REQUIREMENTS
_____ I. Results Only
_____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
✓ III. Results + QC and Calibration Summaries Cnt B?
_____ IV. Data Validation Report with Raw Data

Edata _____ Yes _____ No

INVOICE INFORMATION
PO # 50191-01
BILL TO: Greg Andrus
LU Engineers

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature:	Signature:	Signature:	Signature:	Signature:	
Printed Name: Ben Seifert	Printed Name: Daniel Wild	Printed Name:	Printed Name:	Printed Name:	
Firm: LU Engineers	Firm: ALS	Firm:	Firm:	Firm:	
Date/Time: 10/29/20 11:40	Date/Time: 10/29/2020 1200	Date/Time:	Date/Time:	Date/Time:	

R2010208 5
LU Engineers
Cuba Landfill

Distribution: White - Lab Copy; Yellow - Return to Originator

R2010208 5
LU Engineers
Cube LandFill

Cooler Receipt and Preservation Check Form

Project/Client Lu Eng. Folder Number

Cooler received on 10/29/2020 by: dw

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y (NA)	5a	**Perchlorate** samples have required headspace?	Y N (NA)
2	**Custody papers** properly completed (ink, signed)?	(Y) N	5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	(Y) N NA
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N	6	Where did the bottles originate?	ALS/RDC CLIENT
4	Circle: **Wet Ice Dry Ice Gel packs** present?	(Y) N	7	Soil VOA received as:	Bulk Encore 5035set (NA)

8. Temperature Readings Date: 10/29/2020 Time: 1205 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	4.1						
Within 0-6°C?	(Y) N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: Standing Approval Client aware at drop-off Client notified by:

All samples held in storage location: R002 by dw on 10/29/2020 at 1205
5035 samples placed in storage location: by on at within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 10/30/2020 Time: 1358 by: AP

9. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
10. Did all bottle labels and tags agree with custody papers? (YES) NO
11. Were correct containers used for the tests indicated? (YES) NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO (N/A)
13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated (N/A)

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12		NaOH								
≤2	223419	HNO_3	✓		20204434					
≤2		H_2SO_4								
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-			**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).			
		HCl	**	**						

Bottle lot numbers: 20-09-09, 2561-3
Explain all Discrepancies/ Other Comments:
4 3vials: Trip Blank
1vial: SW4

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by:
PC Secondary Review: 11/3/20 *significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

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 ñNotesò 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 ñimmediateò hold time criteria.
#	Spike was diluted out.
+	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 (Ó100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: 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 Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

[1] Analyses were performed according to our laboratoryôs 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 or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

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.

Client: LU Engineers **Service Request:** R2010208
Project: Cuba LandFill/50191-01

Sample Name: SW-4 **Date Collected:** 10/27/20
Lab Code: R2010208-001 **Date Received:** 10/29/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
6010C	NMANSEN	KMCLAEN
7470A	AKONZEL	KMCLAEN
8260C		KRUEST

Sample Name: SW-3 **Date Collected:** 10/27/20
Lab Code: R2010208-002 **Date Received:** 10/29/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
6010C	NMANSEN	KMCLAEN
7470A	AKONZEL	KMCLAEN
8260C		KRUEST

Sample Name: SW-2 **Date Collected:** 10/27/20
Lab Code: R2010208-003 **Date Received:** 10/29/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
6010C	NMANSEN	KMCLAEN
7470A	AKONZEL	KMCLAEN
8260C		KRUEST

Sample Name: MW-4 **Date Collected:** 10/27/20
Lab Code: R2010208-004 **Date Received:** 10/29/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
6010C	NMANSEN	KMCLAEN
7470A	AKONZEL	KMCLAEN
8260C		KRUEST

Client: LU Engineers **Service Request:** R2010208
Project: Cuba LandFill/50191-01

Sample Name: MW-11 **Date Collected:** 10/27/20
Lab Code: R2010208-005 **Date Received:** 10/29/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
6010C	NMANSEN	KMCLAEN
7470A	AKONZEL	KMCLAEN
8260C		KRUEST

Sample Name: MW-8 **Date Collected:** 10/27/20
Lab Code: R2010208-006 **Date Received:** 10/29/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
6010C	NMANSEN	KMCLAEN
7470A	AKONZEL	KMCLAEN
8260C		KRUEST

Sample Name: MW-7 **Date Collected:** 10/27/20
Lab Code: R2010208-007 **Date Received:** 10/29/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
6010C	NMANSEN	KMCLAEN
7470A	AKONZEL	KMCLAEN
8260C		KRUEST

Sample Name: MW-2 **Date Collected:** 10/28/20
Lab Code: R2010208-008 **Date Received:** 10/29/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
6010C	NMANSEN	KMCLAEN
7470A	AKONZEL	KMCLAEN
8260C		KRUEST

Client: LU Engineers **Service Request:** R2010208
Project: Cuba LandFill/50191-01

Sample Name: MW-12 **Date Collected:** 10/28/20
Lab Code: R2010208-009 **Date Received:** 10/29/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
6010C	NMANSEN	NMANSEN
6010C	NMANSEN	KMCLAEN
7470A	AKONZEL	KMCLAEN
8260C		KRUEST

Sample Name: MW-1D **Date Collected:** 10/28/20
Lab Code: R2010208-010 **Date Received:** 10/29/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
6010C	NMANSEN	KMCLAEN
7470A	AKONZEL	KMCLAEN
8260C		KRUEST

Sample Name: MW-10D **Date Collected:** 10/28/20
Lab Code: R2010208-011 **Date Received:** 10/29/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
6010C	NMANSEN	KMCLAEN
7470A	AKONZEL	KMCLAEN
8260C		KRUEST

Sample Name: Trip Blank **Date Collected:** 10/28/20
Lab Code: R2010208-012 **Date Received:** 10/29/20
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

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

Sample Results

ALS Environmental—Rochester Laboratory
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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

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/27/20 09:00
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	SW-4	**Units:**	ug/L
Lab Code:	R2010208-001	**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	11/07/20 03:02	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/07/20 03:02	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/07/20 03:02	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	11/07/20 03:02	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	11/07/20 03:02	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	11/07/20 03:02	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	11/07/20 03:02	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	11/07/20 03:02	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/07/20 03:02	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/07/20 03:02	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 03:02	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/07/20 03:02	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/07/20 03:02	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 03:02	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 03:02	
1,4-Dioxane	40 U	40	13	1	11/07/20 03:02	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	11/07/20 03:02	
2-Hexanone	5.0 U	5.0	0.20	1	11/07/20 03:02	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/07/20 03:02	
Acetone	5.0 U	5.0	5.0	1	11/07/20 03:02	
Benzene	1.0 U	1.0	0.20	1	11/07/20 03:02	
Bromochloromethane	1.0 U	1.0	0.20	1	11/07/20 03:02	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/07/20 03:02	
Bromoform	1.0 U	1.0	0.25	1	11/07/20 03:02	
Bromomethane	1.0 U	1.0	0.70	1	11/07/20 03:02	
Carbon Disulfide	1.0 U	1.0	0.42	1	11/07/20 03:02	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/07/20 03:02	
Chlorobenzene	1.0 U	1.0	0.20	1	11/07/20 03:02	
Chloroethane	1.0 U	1.0	0.23	1	11/07/20 03:02	
Chloroform	1.0 U	1.0	0.24	1	11/07/20 03:02	
Chloromethane	**0.39 BJ**	1.0	0.28	1	11/07/20 03:02	
Cyclohexane	1.0 U	1.0	0.26	1	11/07/20 03:02	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/07/20 03:02	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	11/07/20 03:02	
Dichloromethane	1.0 U	1.0	0.65	1	11/07/20 03:02	
Ethylbenzene	1.0 U	1.0	0.20	1	11/07/20 03:02	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	11/07/20 03:02	
Methyl Acetate	2.0 U	2.0	0.33	1	11/07/20 03:02	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	11/07/20 03:02	
Methylcyclohexane	1.0 U	1.0	0.20	1	11/07/20 03:02	
Styrene	1.0 U	1.0	0.20	1	11/07/20 03:02	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/07/20 03:02	
Toluene	1.0 U	1.0	0.20	1	11/07/20 03:02	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/27/20 09:00
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	SW-4	**Units:**	ug/L
Lab Code:	R2010208-001	**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	11/07/20 03:02	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/07/20 03:02	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/07/20 03:02	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	11/07/20 03:02	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/07/20 03:02	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/07/20 03:02	
o-Xylene	1.0 U	1.0	0.20	1	11/07/20 03:02	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/07/20 03:02	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/07/20 03:02	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	85 - 122	11/07/20 03:02	
Dibromofluoromethane	90	80 - 116	11/07/20 03:02	
Toluene-d8	98	87 - 121	11/07/20 03:02	

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/27/20 09:15
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	SW-3	**Units:**	ug/L
Lab Code:	R2010208-002	**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)	1.0 U	1.0	0.20	1	11/07/20 03:24	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/07/20 03:24	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/07/20 03:24	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	11/07/20 03:24	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	11/07/20 03:24	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	11/07/20 03:24	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	11/07/20 03:24	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	11/07/20 03:24	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/07/20 03:24	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/07/20 03:24	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 03:24	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/07/20 03:24	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/07/20 03:24	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 03:24	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 03:24	
1,4-Dioxane	40 U	40	13	1	11/07/20 03:24	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	11/07/20 03:24	
2-Hexanone	5.0 U	5.0	0.20	1	11/07/20 03:24	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/07/20 03:24	
Acetone	5.0 U	5.0	5.0	1	11/07/20 03:24	
Benzene	1.0 U	1.0	0.20	1	11/07/20 03:24	
Bromochloromethane	1.0 U	1.0	0.20	1	11/07/20 03:24	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/07/20 03:24	
Bromoform	1.0 U	1.0	0.25	1	11/07/20 03:24	
Bromomethane	1.0 U	1.0	0.70	1	11/07/20 03:24	
Carbon Disulfide	1.0 U	1.0	0.42	1	11/07/20 03:24	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/07/20 03:24	
Chlorobenzene	1.0 U	1.0	0.20	1	11/07/20 03:24	
Chloroethane	1.0 U	1.0	0.23	1	11/07/20 03:24	
Chloroform	1.0 U	1.0	0.24	1	11/07/20 03:24	
Chloromethane	**0.40 BJ**	1.0	0.28	1	11/07/20 03:24	
Cyclohexane	1.0 U	1.0	0.26	1	11/07/20 03:24	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/07/20 03:24	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	11/07/20 03:24	
Dichloromethane	1.0 U	1.0	0.65	1	11/07/20 03:24	
Ethylbenzene	1.0 U	1.0	0.20	1	11/07/20 03:24	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	11/07/20 03:24	
Methyl Acetate	2.0 U	2.0	0.33	1	11/07/20 03:24	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	11/07/20 03:24	
Methylcyclohexane	1.0 U	1.0	0.20	1	11/07/20 03:24	
Styrene	1.0 U	1.0	0.20	1	11/07/20 03:24	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/07/20 03:24	
Toluene	1.0 U	1.0	0.20	1	11/07/20 03:24	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/27/20 09:15
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	SW-3	**Units:**	ug/L
Lab Code:	R2010208-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	11/07/20 03:24	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/07/20 03:24	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/07/20 03:24	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	11/07/20 03:24	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/07/20 03:24	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/07/20 03:24	
o-Xylene	1.0 U	1.0	0.20	1	11/07/20 03:24	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/07/20 03:24	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/07/20 03:24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	85 - 122	11/07/20 03:24	
Dibromofluoromethane	91	80 - 116	11/07/20 03:24	
Toluene-d8	97	87 - 121	11/07/20 03:24	

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/27/20 09:40
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	SW-2	**Units:**	ug/L
Lab Code:	R2010208-003	**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)	1.0 U	1.0	0.20	1	11/07/20 06:41	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/07/20 06:41	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/07/20 06:41	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	11/07/20 06:41	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	11/07/20 06:41	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	11/07/20 06:41	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	11/07/20 06:41	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	11/07/20 06:41	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/07/20 06:41	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/07/20 06:41	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 06:41	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/07/20 06:41	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/07/20 06:41	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 06:41	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 06:41	
1,4-Dioxane	40 U	40	13	1	11/07/20 06:41	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	11/07/20 06:41	
2-Hexanone	5.0 U	5.0	0.20	1	11/07/20 06:41	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/07/20 06:41	
Acetone	5.0 U	5.0	5.0	1	11/07/20 06:41	
Benzene	1.0 U	1.0	0.20	1	11/07/20 06:41	
Bromochloromethane	1.0 U	1.0	0.20	1	11/07/20 06:41	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/07/20 06:41	
Bromoform	1.0 U	1.0	0.25	1	11/07/20 06:41	
Bromomethane	1.0 U	1.0	0.70	1	11/07/20 06:41	
Carbon Disulfide	1.0 U	1.0	0.42	1	11/07/20 06:41	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/07/20 06:41	
Chlorobenzene	1.0 U	1.0	0.20	1	11/07/20 06:41	
Chloroethane	1.0 U	1.0	0.23	1	11/07/20 06:41	
Chloroform	1.0 U	1.0	0.24	1	11/07/20 06:41	
Chloromethane	**0.31 BJ**	1.0	0.28	1	11/07/20 06:41	
Cyclohexane	1.0 U	1.0	0.26	1	11/07/20 06:41	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/07/20 06:41	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	11/07/20 06:41	
Dichloromethane	1.0 U	1.0	0.65	1	11/07/20 06:41	
Ethylbenzene	1.0 U	1.0	0.20	1	11/07/20 06:41	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	11/07/20 06:41	
Methyl Acetate	2.0 U	2.0	0.33	1	11/07/20 06:41	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	11/07/20 06:41	
Methylcyclohexane	1.0 U	1.0	0.20	1	11/07/20 06:41	
Styrene	1.0 U	1.0	0.20	1	11/07/20 06:41	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/07/20 06:41	
Toluene	1.0 U	1.0	0.20	1	11/07/20 06:41	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/27/20 09:40
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	SW-2	**Units:**	ug/L
Lab Code:	R2010208-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	11/07/20 06:41	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/07/20 06:41	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/07/20 06:41	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	11/07/20 06:41	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/07/20 06:41	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/07/20 06:41	
o-Xylene	1.0 U	1.0	0.20	1	11/07/20 06:41	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/07/20 06:41	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/07/20 06:41	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	85 - 122	11/07/20 06:41	
Dibromofluoromethane	88	80 - 116	11/07/20 06:41	
Toluene-d8	95	87 - 121	11/07/20 06:41	

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/27/20 11:25
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	MW-4	**Units:**	ug/L
Lab Code:	R2010208-004	**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)	**17**	1.0	0.20	1	11/07/20 03:46	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/07/20 03:46	
1,1,2-Trichloroethane	**0.23 J**	1.0	0.20	1	11/07/20 03:46	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	11/07/20 03:46	
1,1-Dichloroethane (1,1-DCA)	**77**	1.0	0.20	1	11/07/20 03:46	
1,1-Dichloroethene (1,1-DCE)	**7.2**	1.0	0.20	1	11/07/20 03:46	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	11/07/20 03:46	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	11/07/20 03:46	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/07/20 03:46	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/07/20 03:46	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 03:46	
1,2-Dichloroethane	**0.48 J**	1.0	0.20	1	11/07/20 03:46	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/07/20 03:46	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 03:46	
1,4-Dichlorobenzene	**0.30 J**	1.0	0.20	1	11/07/20 03:46	
1,4-Dioxane	**29 J**	40	13	1	11/07/20 03:46	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	11/07/20 03:46	
2-Hexanone	5.0 U	5.0	0.20	1	11/07/20 03:46	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/07/20 03:46	
Acetone	5.0 U	5.0	5.0	1	11/07/20 03:46	
Benzene	1.0 U	1.0	0.20	1	11/07/20 03:46	
Bromochloromethane	1.0 U	1.0	0.20	1	11/07/20 03:46	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/07/20 03:46	
Bromoform	1.0 U	1.0	0.25	1	11/07/20 03:46	
Bromomethane	1.0 U	1.0	0.70	1	11/07/20 03:46	
Carbon Disulfide	1.0 U	1.0	0.42	1	11/07/20 03:46	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/07/20 03:46	
Chlorobenzene	**0.21 J**	1.0	0.20	1	11/07/20 03:46	
Chloroethane	**4.4**	1.0	0.23	1	11/07/20 03:46	
Chloroform	1.0 U	1.0	0.24	1	11/07/20 03:46	
Chloromethane	**0.50 BJ**	1.0	0.28	1	11/07/20 03:46	
Cyclohexane	1.0 U	1.0	0.26	1	11/07/20 03:46	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/07/20 03:46	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	11/07/20 03:46	
Dichloromethane	1.0 U	1.0	0.65	1	11/07/20 03:46	
Ethylbenzene	1.0 U	1.0	0.20	1	11/07/20 03:46	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	11/07/20 03:46	
Methyl Acetate	2.0 U	2.0	0.33	1	11/07/20 03:46	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	11/07/20 03:46	
Methylcyclohexane	1.0 U	1.0	0.20	1	11/07/20 03:46	
Styrene	1.0 U	1.0	0.20	1	11/07/20 03:46	
Tetrachloroethene (PCE)	**0.46 J**	1.0	0.21	1	11/07/20 03:46	
Toluene	1.0 U	1.0	0.20	1	11/07/20 03:46	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/27/20 11:25
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	MW-4	**Units:**	ug/L
Lab Code:	R2010208-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	**2.2**		1.0	0.20	1	11/07/20 03:46	
Trichlorofluoromethane (CFC 11)	1.0	U	1.0	0.24	1	11/07/20 03:46	
Vinyl Chloride	**3.6**		1.0	0.20	1	11/07/20 03:46	
cis-1,2-Dichloroethene	**32**		1.0	0.23	1	11/07/20 03:46	
cis-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/07/20 03:46	
m,p-Xylenes	2.0	U	2.0	0.20	1	11/07/20 03:46	
o-Xylene	1.0	U	1.0	0.20	1	11/07/20 03:46	
trans-1,2-Dichloroethene	**0.31**	**J**	1.0	0.20	1	11/07/20 03:46	
trans-1,3-Dichloropropene	1.0	U	1.0	0.23	1	11/07/20 03:46	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	85 - 122	11/07/20 03:46	
Dibromofluoromethane	90	80 - 116	11/07/20 03:46	
Toluene-d8	96	87 - 121	11/07/20 03:46	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/27/20 11:35
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	MW-11	**Units:**	ug/L
Lab Code:	R2010208-005	**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)	**4.9**	1.0	0.20	1	11/07/20 04:08	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/07/20 04:08	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/07/20 04:08	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	11/07/20 04:08	
1,1-Dichloroethane (1,1-DCA)	**30**	1.0	0.20	1	11/07/20 04:08	
1,1-Dichloroethene (1,1-DCE)	**2.2**	1.0	0.20	1	11/07/20 04:08	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	11/07/20 04:08	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	11/07/20 04:08	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/07/20 04:08	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/07/20 04:08	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 04:08	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/07/20 04:08	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/07/20 04:08	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 04:08	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 04:08	
1,4-Dioxane	40 U	40	13	1	11/07/20 04:08	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	11/07/20 04:08	
2-Hexanone	5.0 U	5.0	0.20	1	11/07/20 04:08	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/07/20 04:08	
Acetone	5.0 U	5.0	5.0	1	11/07/20 04:08	
Benzene	1.0 U	1.0	0.20	1	11/07/20 04:08	
Bromochloromethane	1.0 U	1.0	0.20	1	11/07/20 04:08	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/07/20 04:08	
Bromoform	1.0 U	1.0	0.25	1	11/07/20 04:08	
Bromomethane	1.0 U	1.0	0.70	1	11/07/20 04:08	
Carbon Disulfide	1.0 U	1.0	0.42	1	11/07/20 04:08	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/07/20 04:08	
Chlorobenzene	1.0 U	1.0	0.20	1	11/07/20 04:08	
Chloroethane	**1.5**	1.0	0.23	1	11/07/20 04:08	
Chloroform	1.0 U	1.0	0.24	1	11/07/20 04:08	
Chloromethane	**0.51 BJ**	1.0	0.28	1	11/07/20 04:08	
Cyclohexane	1.0 U	1.0	0.26	1	11/07/20 04:08	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/07/20 04:08	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	11/07/20 04:08	
Dichloromethane	1.0 U	1.0	0.65	1	11/07/20 04:08	
Ethylbenzene	1.0 U	1.0	0.20	1	11/07/20 04:08	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	11/07/20 04:08	
Methyl Acetate	2.0 U	2.0	0.33	1	11/07/20 04:08	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	11/07/20 04:08	
Methylcyclohexane	1.0 U	1.0	0.20	1	11/07/20 04:08	
Styrene	1.0 U	1.0	0.20	1	11/07/20 04:08	
Tetrachloroethene (PCE)	**1.1**	1.0	0.21	1	11/07/20 04:08	
Toluene	1.0 U	1.0	0.20	1	11/07/20 04:08	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/27/20 11:35
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	MW-11	**Units:**	ug/L
Lab Code:	R2010208-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	**3.1**	1.0	0.20	1	11/07/20 04:08	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/07/20 04:08	
Vinyl Chloride	**0.67 J**	1.0	0.20	1	11/07/20 04:08	
cis-1,2-Dichloroethene	**12**	1.0	0.23	1	11/07/20 04:08	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/07/20 04:08	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/07/20 04:08	
o-Xylene	1.0 U	1.0	0.20	1	11/07/20 04:08	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/07/20 04:08	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/07/20 04:08	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	90	85 - 122	11/07/20 04:08	
Dibromofluoromethane	92	80 - 116	11/07/20 04:08	
Toluene-d8	96	87 - 121	11/07/20 04:08	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/27/20 13:30
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	MW-8	**Units:**	ug/L
Lab Code:	R2010208-006	**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)	**6.8**	1.0	0.20	1	11/07/20 04:30	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/07/20 04:30	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/07/20 04:30	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	11/07/20 04:30	
1,1-Dichloroethane (1,1-DCA)	**5.3**	1.0	0.20	1	11/07/20 04:30	
1,1-Dichloroethene (1,1-DCE)	**0.47 J**	1.0	0.20	1	11/07/20 04:30	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	11/07/20 04:30	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	11/07/20 04:30	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/07/20 04:30	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/07/20 04:30	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 04:30	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/07/20 04:30	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/07/20 04:30	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 04:30	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 04:30	
1,4-Dioxane	40 U	40	13	1	11/07/20 04:30	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	11/07/20 04:30	
2-Hexanone	5.0 U	5.0	0.20	1	11/07/20 04:30	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/07/20 04:30	
Acetone	5.0 U	5.0	5.0	1	11/07/20 04:30	
Benzene	1.0 U	1.0	0.20	1	11/07/20 04:30	
Bromochloromethane	1.0 U	1.0	0.20	1	11/07/20 04:30	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/07/20 04:30	
Bromoform	1.0 U	1.0	0.25	1	11/07/20 04:30	
Bromomethane	1.0 U	1.0	0.70	1	11/07/20 04:30	
Carbon Disulfide	1.0 U	1.0	0.42	1	11/07/20 04:30	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/07/20 04:30	
Chlorobenzene	1.0 U	1.0	0.20	1	11/07/20 04:30	
Chloroethane	1.0 U	1.0	0.23	1	11/07/20 04:30	
Chloroform	1.0 U	1.0	0.24	1	11/07/20 04:30	
Chloromethane	**0.30 BJ**	1.0	0.28	1	11/07/20 04:30	
Cyclohexane	1.0 U	1.0	0.26	1	11/07/20 04:30	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/07/20 04:30	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	11/07/20 04:30	
Dichloromethane	1.0 U	1.0	0.65	1	11/07/20 04:30	
Ethylbenzene	1.0 U	1.0	0.20	1	11/07/20 04:30	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	11/07/20 04:30	
Methyl Acetate	2.0 U	2.0	0.33	1	11/07/20 04:30	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	11/07/20 04:30	
Methylcyclohexane	1.0 U	1.0	0.20	1	11/07/20 04:30	
Styrene	1.0 U	1.0	0.20	1	11/07/20 04:30	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/07/20 04:30	
Toluene	1.0 U	1.0	0.20	1	11/07/20 04:30	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/27/20 13:30
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	MW-8	**Units:**	ug/L
Lab Code:	R2010208-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	**13**	1.0	0.20	1	11/07/20 04:30	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/07/20 04:30	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/07/20 04:30	
cis-1,2-Dichloroethene	**6.4**	1.0	0.23	1	11/07/20 04:30	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/07/20 04:30	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/07/20 04:30	
o-Xylene	1.0 U	1.0	0.20	1	11/07/20 04:30	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/07/20 04:30	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/07/20 04:30	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	85 - 122	11/07/20 04:30	
Dibromofluoromethane	92	80 - 116	11/07/20 04:30	
Toluene-d8	96	87 - 121	11/07/20 04:30	

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/27/20 14:45
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	MW-7	**Units:**	ug/L
Lab Code:	R2010208-007	**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)	**4.5**	1.0	0.20	1	11/07/20 04:52	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/07/20 04:52	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/07/20 04:52	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	11/07/20 04:52	
1,1-Dichloroethane (1,1-DCA)	**1.8**	1.0	0.20	1	11/07/20 04:52	
1,1-Dichloroethene (1,1-DCE)	**0.83 J**	1.0	0.20	1	11/07/20 04:52	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	11/07/20 04:52	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	11/07/20 04:52	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/07/20 04:52	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/07/20 04:52	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 04:52	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/07/20 04:52	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/07/20 04:52	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 04:52	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 04:52	
1,4-Dioxane	40 U	40	13	1	11/07/20 04:52	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	11/07/20 04:52	
2-Hexanone	5.0 U	5.0	0.20	1	11/07/20 04:52	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/07/20 04:52	
Acetone	5.0 U	5.0	5.0	1	11/07/20 04:52	
Benzene	1.0 U	1.0	0.20	1	11/07/20 04:52	
Bromochloromethane	1.0 U	1.0	0.20	1	11/07/20 04:52	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/07/20 04:52	
Bromoform	1.0 U	1.0	0.25	1	11/07/20 04:52	
Bromomethane	1.0 U	1.0	0.70	1	11/07/20 04:52	
Carbon Disulfide	1.0 U	1.0	0.42	1	11/07/20 04:52	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/07/20 04:52	
Chlorobenzene	1.0 U	1.0	0.20	1	11/07/20 04:52	
Chloroethane	1.0 U	1.0	0.23	1	11/07/20 04:52	
Chloroform	1.0 U	1.0	0.24	1	11/07/20 04:52	
Chloromethane	**0.28 BJ**	1.0	0.28	1	11/07/20 04:52	
Cyclohexane	1.0 U	1.0	0.26	1	11/07/20 04:52	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/07/20 04:52	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	11/07/20 04:52	
Dichloromethane	1.0 U	1.0	0.65	1	11/07/20 04:52	
Ethylbenzene	1.0 U	1.0	0.20	1	11/07/20 04:52	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	11/07/20 04:52	
Methyl Acetate	2.0 U	2.0	0.33	1	11/07/20 04:52	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	11/07/20 04:52	
Methylcyclohexane	1.0 U	1.0	0.20	1	11/07/20 04:52	
Styrene	1.0 U	1.0	0.20	1	11/07/20 04:52	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/07/20 04:52	
Toluene	1.0 U	1.0	0.20	1	11/07/20 04:52	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/27/20 14:45
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	MW-7	**Units:**	ug/L
Lab Code:	R2010208-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	**7.1**	1.0	0.20	1	11/07/20 04:52	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/07/20 04:52	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/07/20 04:52	
cis-1,2-Dichloroethene	**3.5**	1.0	0.23	1	11/07/20 04:52	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/07/20 04:52	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/07/20 04:52	
o-Xylene	1.0 U	1.0	0.20	1	11/07/20 04:52	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/07/20 04:52	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/07/20 04:52	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	88	85 - 122	11/07/20 04:52	
Dibromofluoromethane	89	80 - 116	11/07/20 04:52	
Toluene-d8	93	87 - 121	11/07/20 04:52	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/28/20 08:45
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	MW-2	**Units:**	ug/L
Lab Code:	R2010208-008	**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)	1.0 U	1.0	0.20	1	11/07/20 05:13	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/07/20 05:13	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/07/20 05:13	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	11/07/20 05:13	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	11/07/20 05:13	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	11/07/20 05:13	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	11/07/20 05:13	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	11/07/20 05:13	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/07/20 05:13	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/07/20 05:13	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 05:13	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/07/20 05:13	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/07/20 05:13	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 05:13	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 05:13	
1,4-Dioxane	40 U	40	13	1	11/07/20 05:13	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	11/07/20 05:13	
2-Hexanone	5.0 U	5.0	0.20	1	11/07/20 05:13	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/07/20 05:13	
Acetone	5.0 U	5.0	5.0	1	11/07/20 05:13	
Benzene	1.0 U	1.0	0.20	1	11/07/20 05:13	
Bromochloromethane	1.0 U	1.0	0.20	1	11/07/20 05:13	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/07/20 05:13	
Bromoform	1.0 U	1.0	0.25	1	11/07/20 05:13	
Bromomethane	1.0 U	1.0	0.70	1	11/07/20 05:13	
Carbon Disulfide	1.0 U	1.0	0.42	1	11/07/20 05:13	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/07/20 05:13	
Chlorobenzene	1.0 U	1.0	0.20	1	11/07/20 05:13	
Chloroethane	1.0 U	1.0	0.23	1	11/07/20 05:13	
Chloroform	1.0 U	1.0	0.24	1	11/07/20 05:13	
Chloromethane	**0.40 BJ**	1.0	0.28	1	11/07/20 05:13	
Cyclohexane	1.0 U	1.0	0.26	1	11/07/20 05:13	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/07/20 05:13	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	11/07/20 05:13	
Dichloromethane	1.0 U	1.0	0.65	1	11/07/20 05:13	
Ethylbenzene	1.0 U	1.0	0.20	1	11/07/20 05:13	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	11/07/20 05:13	
Methyl Acetate	2.0 U	2.0	0.33	1	11/07/20 05:13	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	11/07/20 05:13	
Methylcyclohexane	1.0 U	1.0	0.20	1	11/07/20 05:13	
Styrene	1.0 U	1.0	0.20	1	11/07/20 05:13	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/07/20 05:13	
Toluene	1.0 U	1.0	0.20	1	11/07/20 05:13	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/28/20 08:45
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	MW-2	**Units:**	ug/L
Lab Code:	R2010208-008	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	11/07/20 05:13	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/07/20 05:13	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/07/20 05:13	
cis-1,2-Dichloroethene	**0.31 J**	1.0	0.23	1	11/07/20 05:13	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/07/20 05:13	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/07/20 05:13	
o-Xylene	1.0 U	1.0	0.20	1	11/07/20 05:13	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/07/20 05:13	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/07/20 05:13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	92	85 - 122	11/07/20 05:13	
Dibromofluoromethane	90	80 - 116	11/07/20 05:13	
Toluene-d8	98	87 - 121	11/07/20 05:13	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/28/20 09:10
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	MW-12	**Units:**	ug/L
Lab Code:	R2010208-009	**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)	1.0 U	1.0	0.20	1	11/07/20 05:35	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/07/20 05:35	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/07/20 05:35	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	11/07/20 05:35	
1,1-Dichloroethane (1,1-DCA)	**0.21 J**	1.0	0.20	1	11/07/20 05:35	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	11/07/20 05:35	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	11/07/20 05:35	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	11/07/20 05:35	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/07/20 05:35	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/07/20 05:35	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 05:35	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/07/20 05:35	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/07/20 05:35	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 05:35	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 05:35	
1,4-Dioxane	40 U	40	13	1	11/07/20 05:35	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	11/07/20 05:35	
2-Hexanone	5.0 U	5.0	0.20	1	11/07/20 05:35	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/07/20 05:35	
Acetone	5.0 U	5.0	5.0	1	11/07/20 05:35	
Benzene	1.0 U	1.0	0.20	1	11/07/20 05:35	
Bromochloromethane	1.0 U	1.0	0.20	1	11/07/20 05:35	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/07/20 05:35	
Bromoform	1.0 U	1.0	0.25	1	11/07/20 05:35	
Bromomethane	1.0 U	1.0	0.70	1	11/07/20 05:35	
Carbon Disulfide	1.0 U	1.0	0.42	1	11/07/20 05:35	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/07/20 05:35	
Chlorobenzene	1.0 U	1.0	0.20	1	11/07/20 05:35	
Chloroethane	1.0 U	1.0	0.23	1	11/07/20 05:35	
Chloroform	1.0 U	1.0	0.24	1	11/07/20 05:35	
Chloromethane	**0.55 BJ**	1.0	0.28	1	11/07/20 05:35	
Cyclohexane	1.0 U	1.0	0.26	1	11/07/20 05:35	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/07/20 05:35	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	11/07/20 05:35	
Dichloromethane	1.0 U	1.0	0.65	1	11/07/20 05:35	
Ethylbenzene	1.0 U	1.0	0.20	1	11/07/20 05:35	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	11/07/20 05:35	
Methyl Acetate	2.0 U	2.0	0.33	1	11/07/20 05:35	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	11/07/20 05:35	
Methylcyclohexane	1.0 U	1.0	0.20	1	11/07/20 05:35	
Styrene	1.0 U	1.0	0.20	1	11/07/20 05:35	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/07/20 05:35	
Toluene	1.0 U	1.0	0.20	1	11/07/20 05:35	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/28/20 09:10
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	MW-12	**Units:**	ug/L
Lab Code:	R2010208-009	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	**0.30**	**J**	1.0	0.20	1	11/07/20 05:35	
Trichlorofluoromethane (CFC 11)	1.0	U	1.0	0.24	1	11/07/20 05:35	
Vinyl Chloride	1.0	U	1.0	0.20	1	11/07/20 05:35	
cis-1,2-Dichloroethene	1.0	U	1.0	0.23	1	11/07/20 05:35	
cis-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/07/20 05:35	
m,p-Xylenes	2.0	U	2.0	0.20	1	11/07/20 05:35	
o-Xylene	1.0	U	1.0	0.20	1	11/07/20 05:35	
trans-1,2-Dichloroethene	1.0	U	1.0	0.20	1	11/07/20 05:35	
trans-1,3-Dichloropropene	1.0	U	1.0	0.23	1	11/07/20 05:35	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	85 - 122	11/07/20 05:35	
Dibromofluoromethane	91	80 - 116	11/07/20 05:35	
Toluene-d8	97	87 - 121	11/07/20 05:35	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/28/20 10:00
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	MW-1D	**Units:**	ug/L
Lab Code:	R2010208-010	**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	11/07/20 05:57	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/07/20 05:57	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/07/20 05:57	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	11/07/20 05:57	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	11/07/20 05:57	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	11/07/20 05:57	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	11/07/20 05:57	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	11/07/20 05:57	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/07/20 05:57	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/07/20 05:57	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 05:57	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/07/20 05:57	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/07/20 05:57	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 05:57	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 05:57	
1,4-Dioxane	40 U	40	13	1	11/07/20 05:57	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	11/07/20 05:57	
2-Hexanone	5.0 U	5.0	0.20	1	11/07/20 05:57	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/07/20 05:57	
Acetone	5.0 U	5.0	5.0	1	11/07/20 05:57	
Benzene	1.0 U	1.0	0.20	1	11/07/20 05:57	
Bromochloromethane	1.0 U	1.0	0.20	1	11/07/20 05:57	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/07/20 05:57	
Bromoform	1.0 U	1.0	0.25	1	11/07/20 05:57	
Bromomethane	1.0 U	1.0	0.70	1	11/07/20 05:57	
Carbon Disulfide	1.0 U	1.0	0.42	1	11/07/20 05:57	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/07/20 05:57	
Chlorobenzene	1.0 U	1.0	0.20	1	11/07/20 05:57	
Chloroethane	1.0 U	1.0	0.23	1	11/07/20 05:57	
Chloroform	1.0 U	1.0	0.24	1	11/07/20 05:57	
Chloromethane	**0.37 BJ**	1.0	0.28	1	11/07/20 05:57	
Cyclohexane	1.0 U	1.0	0.26	1	11/07/20 05:57	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/07/20 05:57	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	11/07/20 05:57	
Dichloromethane	1.0 U	1.0	0.65	1	11/07/20 05:57	
Ethylbenzene	1.0 U	1.0	0.20	1	11/07/20 05:57	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	11/07/20 05:57	
Methyl Acetate	2.0 U	2.0	0.33	1	11/07/20 05:57	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	11/07/20 05:57	
Methylcyclohexane	1.0 U	1.0	0.20	1	11/07/20 05:57	
Styrene	1.0 U	1.0	0.20	1	11/07/20 05:57	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/07/20 05:57	
Toluene	1.0 U	1.0	0.20	1	11/07/20 05:57	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/28/20 10:00
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	MW-1D	**Units:**	ug/L
Lab Code:	R2010208-010	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	11/07/20 05:57	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/07/20 05:57	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/07/20 05:57	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	11/07/20 05:57	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/07/20 05:57	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/07/20 05:57	
o-Xylene	1.0 U	1.0	0.20	1	11/07/20 05:57	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/07/20 05:57	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/07/20 05:57	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	85 - 122	11/07/20 05:57	
Dibromofluoromethane	91	80 - 116	11/07/20 05:57	
Toluene-d8	99	87 - 121	11/07/20 05:57	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/28/20 11:30
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	MW-10D	**Units:**	ug/L
Lab Code:	R2010208-011	**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)	**1.6**	1.0	0.20	1	11/07/20 06:19	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/07/20 06:19	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/07/20 06:19	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	11/07/20 06:19	
1,1-Dichloroethane (1,1-DCA)	**0.61 J**	1.0	0.20	1	11/07/20 06:19	
1,1-Dichloroethene (1,1-DCE)	**0.20 J**	1.0	0.20	1	11/07/20 06:19	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	11/07/20 06:19	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	11/07/20 06:19	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/07/20 06:19	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/07/20 06:19	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 06:19	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/07/20 06:19	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/07/20 06:19	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 06:19	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 06:19	
1,4-Dioxane	40 U	40	13	1	11/07/20 06:19	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	11/07/20 06:19	
2-Hexanone	5.0 U	5.0	0.20	1	11/07/20 06:19	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/07/20 06:19	
Acetone	5.0 U	5.0	5.0	1	11/07/20 06:19	
Benzene	1.0 U	1.0	0.20	1	11/07/20 06:19	
Bromochloromethane	1.0 U	1.0	0.20	1	11/07/20 06:19	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/07/20 06:19	
Bromoform	1.0 U	1.0	0.25	1	11/07/20 06:19	
Bromomethane	1.0 U	1.0	0.70	1	11/07/20 06:19	
Carbon Disulfide	1.0 U	1.0	0.42	1	11/07/20 06:19	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/07/20 06:19	
Chlorobenzene	1.0 U	1.0	0.20	1	11/07/20 06:19	
Chloroethane	1.0 U	1.0	0.23	1	11/07/20 06:19	
Chloroform	1.0 U	1.0	0.24	1	11/07/20 06:19	
Chloromethane	1.0 U	1.0	0.28	1	11/07/20 06:19	
Cyclohexane	1.0 U	1.0	0.26	1	11/07/20 06:19	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/07/20 06:19	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	11/07/20 06:19	
Dichloromethane	1.0 U	1.0	0.65	1	11/07/20 06:19	
Ethylbenzene	1.0 U	1.0	0.20	1	11/07/20 06:19	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	11/07/20 06:19	
Methyl Acetate	2.0 U	2.0	0.33	1	11/07/20 06:19	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	11/07/20 06:19	
Methylcyclohexane	1.0 U	1.0	0.20	1	11/07/20 06:19	
Styrene	1.0 U	1.0	0.20	1	11/07/20 06:19	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/07/20 06:19	
Toluene	1.0 U	1.0	0.20	1	11/07/20 06:19	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/28/20 11:30
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	MW-10D	**Units:**	ug/L
Lab Code:	R2010208-011	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	**0.70**	**J**	1.0	0.20	1	11/07/20 06:19	
Trichlorofluoromethane (CFC 11)	1.0	U	1.0	0.24	1	11/07/20 06:19	
Vinyl Chloride	1.0	U	1.0	0.20	1	11/07/20 06:19	
cis-1,2-Dichloroethene	**0.83**	**J**	1.0	0.23	1	11/07/20 06:19	
cis-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/07/20 06:19	
m,p-Xylenes	2.0	U	2.0	0.20	1	11/07/20 06:19	
o-Xylene	1.0	U	1.0	0.20	1	11/07/20 06:19	
trans-1,2-Dichloroethene	1.0	U	1.0	0.20	1	11/07/20 06:19	
trans-1,3-Dichloropropene	1.0	U	1.0	0.23	1	11/07/20 06:19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	92	85 - 122	11/07/20 06:19	
Dibromofluoromethane	89	80 - 116	11/07/20 06:19	
Toluene-d8	96	87 - 121	11/07/20 06:19	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/28/20
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	Trip Blank	**Units:**	ug/L
Lab Code:	R2010208-012	**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	11/07/20 02:40	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/07/20 02:40	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/07/20 02:40	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	11/07/20 02:40	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	11/07/20 02:40	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	11/07/20 02:40	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	11/07/20 02:40	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	11/07/20 02:40	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/07/20 02:40	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/07/20 02:40	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 02:40	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/07/20 02:40	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/07/20 02:40	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 02:40	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/07/20 02:40	
1,4-Dioxane	40 U	40	13	1	11/07/20 02:40	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	11/07/20 02:40	
2-Hexanone	5.0 U	5.0	0.20	1	11/07/20 02:40	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/07/20 02:40	
Acetone	5.0 U	5.0	5.0	1	11/07/20 02:40	
Benzene	1.0 U	1.0	0.20	1	11/07/20 02:40	
Bromochloromethane	1.0 U	1.0	0.20	1	11/07/20 02:40	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/07/20 02:40	
Bromoform	1.0 U	1.0	0.25	1	11/07/20 02:40	
Bromomethane	1.0 U	1.0	0.70	1	11/07/20 02:40	
Carbon Disulfide	1.0 U	1.0	0.42	1	11/07/20 02:40	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/07/20 02:40	
Chlorobenzene	1.0 U	1.0	0.20	1	11/07/20 02:40	
Chloroethane	1.0 U	1.0	0.23	1	11/07/20 02:40	
Chloroform	1.0 U	1.0	0.24	1	11/07/20 02:40	
Chloromethane	1.0 U	1.0	0.28	1	11/07/20 02:40	
Cyclohexane	1.0 U	1.0	0.26	1	11/07/20 02:40	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/07/20 02:40	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	11/07/20 02:40	
Dichloromethane	1.0 U	1.0	0.65	1	11/07/20 02:40	
Ethylbenzene	1.0 U	1.0	0.20	1	11/07/20 02:40	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	11/07/20 02:40	
Methyl Acetate	2.0 U	2.0	0.33	1	11/07/20 02:40	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	11/07/20 02:40	
Methylcyclohexane	1.0 U	1.0	0.20	1	11/07/20 02:40	
Styrene	1.0 U	1.0	0.20	1	11/07/20 02:40	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/07/20 02:40	
Toluene	1.0 U	1.0	0.20	1	11/07/20 02:40	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/28/20
Sample Matrix:	Water	**Date Received:**	10/29/20 12:00
Sample Name:	Trip Blank	**Units:**	ug/L
Lab Code:	R2010208-012	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	11/07/20 02:40	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/07/20 02:40	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/07/20 02:40	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	11/07/20 02:40	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/07/20 02:40	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/07/20 02:40	
o-Xylene	1.0 U	1.0	0.20	1	11/07/20 02:40	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/07/20 02:40	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/07/20 02:40	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	85 - 122	11/07/20 02:40	
Dibromofluoromethane	89	80 - 116	11/07/20 02:40	
Toluene-d8	98	87 - 121	11/07/20 02:40	

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

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: LU Engineers
Project No.: R2010208
Project Name:
Matrix: WATER

Service Request: SW-4
Date Collected: 10/27/2020
Date Received: 10/29/2020
Units: ug/L
Basis:

Sample Name: SW-4
Lab Code: R2010208-001

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	100	23.0	1.0	1010		
Antimony	6010C	60.0	4.7	1.0	60.0	U	
Arsenic	6010C	10.0	5.5	1.0	10.0	U	
Barium	6010C	20.0	3.0	1.0	13.4	J	
Beryllium	6010C	3.0	0.130	1.0	3.0	U	
Cadmium	6010C	5.0	0.350	1.0	5.0	U	
Mercury	7470A	0.200	0.077	1.0	0.200	U	
Calcium	6010C	1000	220	1.0	5510		
Chromium	6010C	10.0	0.590	1.0	1.1	J	
Cobalt	6010C	50.0	0.890	1.0	50.0	U	
Copper	6010C	20.0	3.9	1.0	20.0	U	
Iron	6010C	100	61.0	1.0	707		
Lead	6010C	50.0	2.1	1.0	50.0	U	
Magnesium	6010C	1000	29.0	1.0	1080		
Manganese	6010C	10.0	3.7	1.0	12.3		
Nickel	6010C	40.0	2.6	1.0	40.0	U	
Potassium	6010C	2000	200	1.0	2120		
Selenium	6010C	10.0	6.4	1.0	10.0	U	
Silver	6010C	10.0	0.570	1.0	10.0	U	
Sodium	6010C	1000	130	1.0	6210		
Thallium	6010C	10.0	6.6	1.0	10.0	U	
Vanadium	6010C	50.0	0.670	1.0	1.6	J	
Zinc	6010C	20.0	9.4	1.0	20.0	U	

% Solids: 0.0

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: LU Engineers
Project No.: R2010208
Project Name:
Matrix: WATER

Service Request: SW-4
Date Collected: 10/27/2020
Date Received: 10/29/2020
Units: ug/L
Basis:

Sample Name: SW-3 **Lab Code:** R2010208-002

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	100	23.0	1.0	949		
Antimony	6010C	60.0	4.7	1.0	60.0	U	
Arsenic	6010C	10.0	5.5	1.0	10.0	U	
Barium	6010C	20.0	3.0	1.0	14.2	J	
Beryllium	6010C	3.0	0.130	1.0	3.0	U	
Cadmium	6010C	5.0	0.350	1.0	5.0	U	
Mercury	7470A	0.200	0.077	1.0	0.200	U	
Calcium	6010C	1000	220	1.0	6540		
Chromium	6010C	10.0	0.590	1.0	1.0	J	
Cobalt	6010C	50.0	0.890	1.0	50.0	U	
Copper	6010C	20.0	3.9	1.0	20.0	U	
Iron	6010C	100	61.0	1.0	752		
Lead	6010C	50.0	2.1	1.0	2.2	J	
Magnesium	6010C	1000	29.0	1.0	1340		
Manganese	6010C	10.0	3.7	1.0	17.2		
Nickel	6010C	40.0	2.6	1.0	40.0	U	
Potassium	6010C	2000	200	1.0	2450		
Selenium	6010C	10.0	6.4	1.0	10.0	U	
Silver	6010C	10.0	0.570	1.0	10.0	U	
Sodium	6010C	1000	130	1.0	4930		
Thallium	6010C	10.0	6.6	1.0	10.0	U	
Vanadium	6010C	50.0	0.670	1.0	1.6	J	
Zinc	6010C	20.0	9.4	1.0	20.0	U	

% Solids: 0.0

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: LU Engineers
Project No.: R2010208
Project Name:
Matrix: WATER

Service Request: SW-4
Date Collected: 10/27/2020
Date Received: 10/29/2020
Units: ug/L
Basis:

Sample Name: SW-2 **Lab Code:** R2010208-003

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	100	23.0	1.0	100	U	
Antimony	6010C	60.0	4.7	1.0	60.0	U	
Arsenic	6010C	10.0	5.5	1.0	10.0	U	
Barium	6010C	20.0	3.0	1.0	20.0	U	
Beryllium	6010C	3.0	0.130	1.0	3.0	U	
Cadmium	6010C	5.0	0.350	1.0	5.0	U	
Mercury	7470A	0.200	0.077	1.0	0.200	U	
Calcium	6010C	1000	220	1.0	4890		
Chromium	6010C	10.0	0.590	1.0	10.0	U	
Cobalt	6010C	50.0	0.890	1.0	50.0	U	
Copper	6010C	20.0	3.9	1.0	20.0	U	
Iron	6010C	100	61.0	1.0	100	U	
Lead	6010C	50.0	2.1	1.0	50.0	U	
Magnesium	6010C	1000	29.0	1.0	985	J	
Manganese	6010C	10.0	3.7	1.0	5.0	J	
Nickel	6010C	40.0	2.6	1.0	40.0	U	
Potassium	6010C	2000	200	1.0	907	J	
Selenium	6010C	10.0	6.4	1.0	10.0	U	
Silver	6010C	10.0	0.570	1.0	10.0	U	
Sodium	6010C	1000	130	1.0	9190		
Thallium	6010C	10.0	6.6	1.0	10.0	U	
Vanadium	6010C	50.0	0.670	1.0	50.0	U	
Zinc	6010C	20.0	9.4	1.0	20.0	U	

% Solids: 0.0

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: LU Engineers
Project No.: R2010208
Project Name:
Matrix: WATER

Service Request: SW-4
Date Collected: 10/27/2020
Date Received: 10/29/2020
Units: ug/L
Basis:

Sample Name: **MW-4**
Lab Code: **R2010208-004**

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	100	23.0	1.0	100	U	
Antimony	6010C	60.0	4.7	1.0	60.0	U	
Arsenic	6010C	10.0	5.5	1.0	10.0	U	
Barium	6010C	20.0	3.0	1.0	20.3		
Beryllium	6010C	3.0	0.130	1.0	3.0	U	
Cadmium	6010C	5.0	0.350	1.0	5.0	U	
Mercury	7470A	0.200	0.077	1.0	0.200	U	
Calcium	6010C	1000	220	1.0	50500		
Chromium	6010C	10.0	0.590	1.0	10.0	U	
Cobalt	6010C	50.0	0.890	1.0	50.0	U	
Copper	6010C	20.0	3.9	1.0	20.0	U	
Iron	6010C	100	61.0	1.0	100	U	
Lead	6010C	50.0	2.1	1.0	50.0	U	
Magnesium	6010C	1000	29.0	1.0	12000		
Manganese	6010C	10.0	3.7	1.0	4980		
Nickel	6010C	40.0	2.6	1.0	2.8	J	
Potassium	6010C	2000	200	1.0	2690		
Selenium	6010C	10.0	6.4	1.0	10.0	U	
Silver	6010C	10.0	0.570	1.0	10.0	U	
Sodium	6010C	1000	130	1.0	4620		
Thallium	6010C	10.0	6.6	1.0	10.0	U	
Vanadium	6010C	50.0	0.670	1.0	50.0	U	
Zinc	6010C	20.0	9.4	1.0	20.0	U	

% Solids: 0.0

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: LU Engineers
Project No.: R2010208
Project Name:
Matrix: WATER

Service Request: SW-4
Date Collected: 10/27/2020
Date Received: 10/29/2020
Units: ug/L
Basis:

Sample Name: MW-11
Lab Code: R2010208-005

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	100	23.0	1.0	10500		
Antimony	6010C	60.0	4.7	1.0	60.0	U	
Arsenic	6010C	10.0	5.5	1.0	10.0	U	
Barium	6010C	20.0	3.0	1.0	68.4		
Beryllium	6010C	3.0	0.130	1.0	0.400	J	
Cadmium	6010C	5.0	0.350	1.0	5.0	U	
Mercury	7470A	0.200	0.077	1.0	0.200	U	
Calcium	6010C	1000	220	1.0	78200		
Chromium	6010C	10.0	0.590	1.0	10.5		
Cobalt	6010C	50.0	0.890	1.0	3.3	J	
Copper	6010C	20.0	3.9	1.0	6.9	J	
Iron	6010C	100	61.0	1.0	8830		
Lead	6010C	50.0	2.1	1.0	3.0	J	
Magnesium	6010C	1000	29.0	1.0	18000		
Manganese	6010C	10.0	3.7	1.0	784		
Nickel	6010C	40.0	2.6	1.0	5.3	J	
Potassium	6010C	2000	200	1.0	5230		
Selenium	6010C	10.0	6.4	1.0	10.0	U	
Silver	6010C	10.0	0.570	1.0	10.0	U	
Sodium	6010C	1000	130	1.0	5030		
Thallium	6010C	10.0	6.6	1.0	10.0	U	
Vanadium	6010C	50.0	0.670	1.0	14.6	J	
Zinc	6010C	20.0	9.4	1.0	38.9		

% Solids: 0.0

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: LU Engineers
Project No.: R2010208
Project Name:
Matrix: WATER

Service Request: SW-4
Date Collected: 10/27/2020
Date Received: 10/29/2020
Units: ug/L
Basis:

Sample Name: MW-8 **Lab Code:** R2010208-006

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	100	23.0	1.0	25700		
Antimony	6010C	60.0	4.7	1.0	60.0	U	
Arsenic	6010C	10.0	5.5	1.0	12.0		
Barium	6010C	20.0	3.0	1.0	140		
Beryllium	6010C	3.0	0.130	1.0	1.2	J	
Cadmium	6010C	5.0	0.350	1.0	5.0	U	
Mercury	7470A	0.200	0.077	1.0	0.200	U	
Calcium	6010C	1000	220	1.0	38000		
Chromium	6010C	10.0	0.590	1.0	29.0		
Cobalt	6010C	50.0	0.890	1.0	12.6	J	
Copper	6010C	20.0	3.9	1.0	51.7		
Iron	6010C	100	61.0	1.0	28800		
Lead	6010C	50.0	2.1	1.0	6.1	J	
Magnesium	6010C	1000	29.0	1.0	19200		
Manganese	6010C	10.0	3.7	1.0	381		
Nickel	6010C	40.0	2.6	1.0	23.1	J	
Potassium	6010C	2000	200	1.0	9310		
Selenium	6010C	10.0	6.4	1.0	10.0	U	
Silver	6010C	10.0	0.570	1.0	10.0	U	
Sodium	6010C	1000	130	1.0	5380		
Thallium	6010C	10.0	6.6	1.0	10.0	U	
Vanadium	6010C	50.0	0.670	1.0	34.3	J	
Zinc	6010C	20.0	9.4	1.0	77.2		

% Solids: 0.0

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: LU Engineers
Project No.: R2010208
Project Name:
Matrix: WATER

Service Request: SW-4
Date Collected: 10/27/2020
Date Received: 10/29/2020
Units: ug/L
Basis:

Sample Name: MW-7 **Lab Code:** R2010208-007

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	100	23.0	1.0	2520		
Antimony	6010C	60.0	4.7	1.0	60.0	U	
Arsenic	6010C	10.0	5.5	1.0	10.0	U	
Barium	6010C	20.0	3.0	1.0	65.8		
Beryllium	6010C	3.0	0.130	1.0	3.0	U	
Cadmium	6010C	5.0	0.350	1.0	5.0	U	
Mercury	7470A	0.200	0.077	1.0	0.200	U	
Calcium	6010C	1000	220	1.0	52100		
Chromium	6010C	10.0	0.590	1.0	3.5	J	
Cobalt	6010C	50.0	0.890	1.0	1.2	J	
Copper	6010C	20.0	3.9	1.0	5.9	J	
Iron	6010C	100	61.0	1.0	2350		
Lead	6010C	50.0	2.1	1.0	50.0	U	
Magnesium	6010C	1000	29.0	1.0	24800		
Manganese	6010C	10.0	3.7	1.0	49.1		
Nickel	6010C	40.0	2.6	1.0	40.0	U	
Potassium	6010C	2000	200	1.0	2720		
Selenium	6010C	10.0	6.4	1.0	10.0	U	
Silver	6010C	10.0	0.570	1.0	10.0	U	
Sodium	6010C	1000	130	1.0	6760		
Thallium	6010C	10.0	6.6	1.0	10.0	U	
Vanadium	6010C	50.0	0.670	1.0	3.2	J	
Zinc	6010C	20.0	9.4	1.0	9.4	J	

% Solids: 0.0

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: LU Engineers
Project No.: R2010208
Project Name:
Matrix: WATER

Service Request: SW-4
Date Collected: 10/28/2020
Date Received: 10/29/2020
Units: ug/L
Basis:

Sample Name: MW-2
Lab Code: R2010208-008

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	100	23.0	1.0	12700		
Antimony	6010C	60.0	4.7	1.0	60.0	U	
Arsenic	6010C	10.0	5.5	1.0	7.8	J	
Barium	6010C	20.0	3.0	1.0	77.2		
Beryllium	6010C	3.0	0.130	1.0	0.400	J	
Cadmium	6010C	5.0	0.350	1.0	0.900	J	
Mercury	7470A	0.200	0.077	1.0	0.200	U	
Calcium	6010C	1000	220	1.0	45800		
Chromium	6010C	10.0	0.590	1.0	11.0		
Cobalt	6010C	50.0	0.890	1.0	3.6	J	
Copper	6010C	20.0	3.9	1.0	9.5	J	
Iron	6010C	100	61.0	1.0	12700		
Lead	6010C	50.0	2.1	1.0	3.9	J	
Magnesium	6010C	1000	29.0	1.0	16400		
Manganese	6010C	10.0	3.7	1.0	278		
Nickel	6010C	40.0	2.6	1.0	7.5	J	
Potassium	6010C	2000	200	1.0	7720		
Selenium	6010C	10.0	6.4	1.0	10.0	U	
Silver	6010C	10.0	0.570	1.0	10.0	U	
Sodium	6010C	1000	130	1.0	20400		
Thallium	6010C	10.0	6.6	1.0	10.0	U	
Vanadium	6010C	50.0	0.670	1.0	12.4	J	
Zinc	6010C	20.0	9.4	1.0	311		

% Solids: 0.0

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: LU Engineers
Project No.: R2010208
Project Name:
Matrix: WATER

Service Request: SW-4
Date Collected: 10/28/2020
Date Received: 10/29/2020
Units: ug/L
Basis:

Sample Name: MW-12 **Lab Code:** R2010208-009

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	100	23.0	1.0	37400		
Antimony	6010C	60.0	4.7	1.0	60.0	U	
Arsenic	6010C	10.0	5.5	1.0	18.5		
Barium	6010C	20.0	3.0	1.0	249		
Beryllium	6010C	3.0	0.130	1.0	1.3	J	
Cadmium	6010C	5.0	0.350	1.0	5.0	U	
Mercury	7470A	0.200	0.077	1.0	0.200	U	
Calcium	6010C	1000	220	1.0	82200		
Chromium	6010C	10.0	0.590	1.0	44.7		
Cobalt	6010C	50.0	0.890	1.0	17.5	J	
Copper	6010C	20.0	3.9	1.0	28.4		
Iron	6010C	100	61.0	1.0	43800		
Lead	6010C	50.0	2.1	1.0	17.3	J	
Magnesium	6010C	1000	29.0	1.0	46600		
Manganese	6010C	10.0	3.7	1.0	2450		
Nickel	6010C	40.0	2.6	1.0	31.0	J	
Potassium	6010C	2000	200	1.0	13600		
Selenium	6010C	10.0	6.4	1.0	10.0	U	
Silver	6010C	10.0	0.570	1.0	10.0	U	
Sodium	6010C	1000	130	1.0	25200		
Thallium	6010C	10.0	6.6	1.0	10.0	U	
Vanadium	6010C	50.0	0.670	1.0	47.2	J	
Zinc	6010C	20.0	9.4	1.0	102		

% Solids: 0.0

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: LU Engineers
Project No.: R2010208
Project Name:
Matrix: WATER

Service Request: SW-4
Date Collected: 10/28/2020
Date Received: 10/29/2020
Units: ug/L
Basis:

Sample Name: MW-1D
Lab Code: R2010208-010

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	100	23.0	1.0	3950		
Antimony	6010C	60.0	4.7	1.0	60.0	U	
Arsenic	6010C	10.0	5.5	1.0	10.0	U	
Barium	6010C	20.0	3.0	1.0	61.8		
Beryllium	6010C	3.0	0.130	1.0	0.200	J	
Cadmium	6010C	5.0	0.350	1.0	5.0	U	
Mercury	7470A	0.200	0.077	1.0	0.200	U	
Calcium	6010C	1000	220	1.0	25300		
Chromium	6010C	10.0	0.590	1.0	5.4	J	
Cobalt	6010C	50.0	0.890	1.0	1.4	J	
Copper	6010C	20.0	3.9	1.0	6.6	J	
Iron	6010C	100	61.0	1.0	4150		
Lead	6010C	50.0	2.1	1.0	50.0	U	
Magnesium	6010C	1000	29.0	1.0	4720		
Manganese	6010C	10.0	3.7	1.0	125		
Nickel	6010C	40.0	2.6	1.0	40.0	U	
Potassium	6010C	2000	200	1.0	2100		
Selenium	6010C	10.0	6.4	1.0	10.0	U	
Silver	6010C	10.0	0.570	1.0	10.0	U	
Sodium	6010C	1000	130	1.0	2080		
Thallium	6010C	10.0	6.6	1.0	10.0	U	
Vanadium	6010C	50.0	0.670	1.0	5.3	J	
Zinc	6010C	20.0	9.4	1.0	18.1	J	

% Solids: 0.0

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: LU Engineers
Project No.: R2010208
Project Name:
Matrix: WATER

Service Request: SW-4
Date Collected: 10/28/2020
Date Received: 10/29/2020
Units: ug/L
Basis:

Sample Name: MW-10D
Lab Code: R2010208-011

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	100	23.0	1.0	305		
Antimony	6010C	60.0	4.7	1.0	60.0	U	
Arsenic	6010C	10.0	5.5	1.0	10.0	U	
Barium	6010C	20.0	3.0	1.0	35.1		
Beryllium	6010C	3.0	0.130	1.0	3.0	U	
Cadmium	6010C	5.0	0.350	1.0	5.0	U	
Mercury	7470A	0.200	0.077	1.0	0.200	U	
Calcium	6010C	1000	220	1.0	45900		
Chromium	6010C	10.0	0.590	1.0	1.6	J	
Cobalt	6010C	50.0	0.890	1.0	50.0	U	
Copper	6010C	20.0	3.9	1.0	20.0	U	
Iron	6010C	100	61.0	1.0	355		
Lead	6010C	50.0	2.1	1.0	50.0	U	
Magnesium	6010C	1000	29.0	1.0	19800		
Manganese	6010C	10.0	3.7	1.0	64.2		
Nickel	6010C	40.0	2.6	1.0	40.0	U	
Potassium	6010C	2000	200	1.0	2060		
Selenium	6010C	10.0	6.4	1.0	10.0	U	
Silver	6010C	10.0	0.570	1.0	10.0	U	
Sodium	6010C	1000	130	1.0	16000		
Thallium	6010C	10.0	6.6	1.0	10.0	U	
Vanadium	6010C	50.0	0.670	1.0	50.0	U	
Zinc	6010C	20.0	9.4	1.0	20.0	U	

% Solids: 0.0

Comments:

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
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Volatile Organic Compounds by GC/MS

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

Client: LU Engineers **Service Request:** R2010208
Project: Cuba LandFill/50191-01
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: EPA 5030C

Sample Name	Lab Code	4-Bromofluorobenzene 85-122	Dibromofluoromethane 80-116	Toluene-d8 87-121
SW-4	R2010208-001	93	90	98
SW-3	R2010208-002	94	91	97
SW-2	R2010208-003	91	88	95
MW-4	R2010208-004	91	90	96
MW-11	R2010208-005	90	92	96
MW-8	R2010208-006	91	92	96
MW-7	R2010208-007	88	89	93
MW-2	R2010208-008	92	90	98
MW-12	R2010208-009	91	91	97
MW-1D	R2010208-010	94	91	99
MW-10D	R2010208-011	92	89	96
Trip Blank	R2010208-012	93	89	98
Method Blank	RQ2013566-04	91	91	97
Lab Control Sample	RQ2013566-03	96	96	99
SW-2 MS	RQ2013566-05	94	95	98
SW-2 DMS	RQ2013566-06	98	98	100

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/27/20
Sample Matrix:	Water	**Date Received:**	10/29/20
		Date Analyzed:	11/7/20
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name:	SW-2	**Units:**	ug/L
Lab Code:	R2010208-003	**Basis:**	NA
Analysis Method:	8260C		
Prep Method:	EPA 5030C		

		Matrix Spike			Duplicate Matrix Spike					
		RQ2013566-05			RQ2013566-06					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,1,1-Trichloroethane (TCA)	1.0 U	44.5	50.0	89	48.1	50.0	96	74-127	8	30
1,1,2,2-Tetrachloroethane	1.0 U	56.4	50.0	113	60.8	50.0	122	72-122	7	30
1,1,2-Trichloroethane	1.0 U	49.3	50.0	99	51.0	50.0	102	82-121	3	30
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	44.1	50.0	88	48.9	50.0	98	50-147	10	30
1,1-Dichloroethane (1,1-DCA)	1.0 U	47.9	50.0	96	51.0	50.0	102	74-132	6	30
1,1-Dichloroethene (1,1-DCE)	1.0 U	53.6	50.0	107	56.5	50.0	113	71-118	5	30
1,2,3-Trichlorobenzene	1.0 U	46.8	50.0	94	50.2	50.0	100	59-129	7	30
1,2,4-Trichlorobenzene	1.0 U	47.3	50.0	95	51.5	50.0	103	69-122	9	30
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	50.3	50.0	101	54.9	50.0	110	37-150	9	30
1,2-Dibromoethane	1.0 U	46.6	50.0	93	49.8	50.0	100	67-127	7	30
1,2-Dichlorobenzene	1.0 U	44.6	50.0	89	48.7	50.0	97	77-120	9	30
1,2-Dichloroethane	1.0 U	43.7	50.0	87	46.7	50.0	93	68-130	7	30
1,2-Dichloropropane	1.0 U	50.1	50.0	100	53.3	50.0	107	79-124	6	30
1,3-Dichlorobenzene	1.0 U	46.0	50.0	92	50.7	50.0	101	83-121	10	30
1,4-Dichlorobenzene	1.0 U	43.0	50.0	86	47.7	50.0	95	82-120	10	30
1,4-Dioxane	40 U	884	1000	88	895	1000	90	44-154	1	30
2-Butanone (MEK)	5.0 U	45.0	50.0	90	48.4	50.0	97	61-137	7	30
2-Hexanone	5.0 U	58.7	50.0	117	57.6	50.0	115	56-132	2	30
4-Methyl-2-pentanone	5.0 U	57.8	50.0	116	57.9	50.0	116	60-141	<1	30
Acetone	5.0 U	47.2	50.0	94	53.6	50.0	107	35-183	13	30
Benzene	1.0 U	49.6	50.0	99	53.7	50.0	107	76-129	8	30
Bromochloromethane	1.0 U	43.4	50.0	87	46.9	50.0	94	80-122	8	30
Bromodichloromethane	1.0 U	44.2	50.0	88	47.5	50.0	95	78-133	7	30
Bromoform	1.0 U	48.7	50.0	97	53.1	50.0	106	58-133	9	30
Bromomethane	1.0 U	37.1	50.0	74	40.2	50.0	80	10-184	8	30
Carbon Disulfide	1.0 U	44.9	50.0	90	47.8	50.0	96	59-140	6	30
Carbon Tetrachloride	1.0 U	45.6	50.0	91	49.2	50.0	98	65-135	8	30
Chlorobenzene	1.0 U	46.2	50.0	92	49.6	50.0	99	76-125	7	30
Chloroethane	1.0 U	39.2	50.0	78	44.0	50.0	88	48-146	11	30
Chloroform	1.0 U	45.1	50.0	90	49.6	50.0	99	75-130	9	30
Chloromethane	0.31 BJ	61.2	50.0	122	64.2	50.0	128	55-160	5	30
Cyclohexane	1.0 U	52.5	50.0	105	54.9	50.0	110	52-145	4	30
Dibromochloromethane	1.0 U	49.7	50.0	99	52.5	50.0	105	72-128	5	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.

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	10/27/20
Sample Matrix:	Water	**Date Received:**	10/29/20
		Date Analyzed:	11/7/20
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name:	SW-2	**Units:**	ug/L
Lab Code:	R2010208-003	**Basis:**	NA
Analysis Method:	8260C		
Prep Method:	EPA 5030C		

		Matrix Spike			Duplicate Matrix Spike					
		RQ2013566-05			RQ2013566-06					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Dichlorodifluoromethane (CFC 12)	1.0 U	48.6	50.0	97	53.5	50.0	107	49-154	10	30
Dichloromethane	1.0 U	45.8	50.0	92	48.5	50.0	97	73-122	6	30
Ethylbenzene	1.0 U	47.6	50.0	95	51.5	50.0	103	72-134	8	30
Isopropylbenzene (Cumene)	1.0 U	48.4	50.0	97	53.0	50.0	106	77-128	9	30
Methyl Acetate	2.0 U	32.3	50.0	65	42.3	50.0	85	26-121	27	30
Methyl tert-Butyl Ether	1.0 U	47.1	50.0	94	50.2	50.0	100	75-119	6	30
Methylcyclohexane	1.0 U	53.5	50.0	107	56.3	50.0	113	45-146	5	30
Styrene	1.0 U	47.2	50.0	94	51.4	50.0	103	74-136	8	30
Tetrachloroethene (PCE)	1.0 U	47.7	50.0	95	50.8	50.0	102	72-125	6	30
Toluene	1.0 U	49.5	50.0	99	52.4	50.0	105	79-119	6	30
Trichloroethene (TCE)	1.0 U	42.2	50.0	84	44.2	50.0	88	74-122	5	30
Trichlorofluoromethane (CFC 11)	1.0 U	43.9	50.0	88	47.6	50.0	95	71-136	8	30
Vinyl Chloride	1.0 U	47.2	50.0	94	51.0	50.0	102	74-159	8	30
cis-1,2-Dichloroethene	1.0 U	47.6	50.0	95	51.5	50.0	103	77-127	8	30
cis-1,3-Dichloropropene	1.0 U	44.7	50.0	89	47.5	50.0	95	52-134	6	30
m,p-Xylenes	2.0 U	97.8	100	98	105	100	105	80-126	7	30
o-Xylene	1.0 U	49.0	50.0	98	52.4	50.0	105	79-123	7	30
trans-1,2-Dichloroethene	1.0 U	53.5	50.0	107	58.0	50.0	116	73-118	8	30
trans-1,3-Dichloropropene	1.0 U	43.8	50.0	88	46.6	50.0	93	71-133	6	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:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2013566-04	**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	11/06/20 23:22	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/06/20 23:22	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/06/20 23:22	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	0.20	1	11/06/20 23:22	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	11/06/20 23:22	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	11/06/20 23:22	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.25	1	11/06/20 23:22	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.34	1	11/06/20 23:22	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/06/20 23:22	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/06/20 23:22	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/06/20 23:22	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/06/20 23:22	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/06/20 23:22	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/06/20 23:22	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/06/20 23:22	
1,4-Dioxane	40 U	40	13	1	11/06/20 23:22	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	11/06/20 23:22	
2-Hexanone	5.0 U	5.0	0.20	1	11/06/20 23:22	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/06/20 23:22	
Acetone	5.0 U	5.0	5.0	1	11/06/20 23:22	
Benzene	1.0 U	1.0	0.20	1	11/06/20 23:22	
Bromochloromethane	1.0 U	1.0	0.20	1	11/06/20 23:22	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/06/20 23:22	
Bromoform	1.0 U	1.0	0.25	1	11/06/20 23:22	
Bromomethane	1.0 U	1.0	0.70	1	11/06/20 23:22	
Carbon Disulfide	1.0 U	1.0	0.42	1	11/06/20 23:22	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/06/20 23:22	
Chlorobenzene	1.0 U	1.0	0.20	1	11/06/20 23:22	
Chloroethane	1.0 U	1.0	0.23	1	11/06/20 23:22	
Chloroform	1.0 U	1.0	0.24	1	11/06/20 23:22	
Chloromethane	**0.60 J**	1.0	0.28	1	11/06/20 23:22	
Cyclohexane	1.0 U	1.0	0.26	1	11/06/20 23:22	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/06/20 23:22	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	0.21	1	11/06/20 23:22	
Dichloromethane	1.0 U	1.0	0.65	1	11/06/20 23:22	
Ethylbenzene	1.0 U	1.0	0.20	1	11/06/20 23:22	
Isopropylbenzene (Cumene)	1.0 U	1.0	0.20	1	11/06/20 23:22	
Methyl Acetate	2.0 U	2.0	0.33	1	11/06/20 23:22	
Methyl tert-Butyl Ether	1.0 U	1.0	0.20	1	11/06/20 23:22	
Methylcyclohexane	1.0 U	1.0	0.20	1	11/06/20 23:22	
Styrene	1.0 U	1.0	0.20	1	11/06/20 23:22	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/06/20 23:22	
Toluene	1.0 U	1.0	0.20	1	11/06/20 23:22	

Analytical Report

Client:	LU Engineers	**Service Request:**	R2010208
Project:	Cuba LandFill/50191-01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2013566-04	**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	11/06/20 23:22	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/06/20 23:22	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/06/20 23:22	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	11/06/20 23:22	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/06/20 23:22	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/06/20 23:22	
o-Xylene	1.0 U	1.0	0.20	1	11/06/20 23:22	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/06/20 23:22	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/06/20 23:22	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	85 - 122	11/06/20 23:22	
Dibromofluoromethane	91	80 - 116	11/06/20 23:22	
Toluene-d8	97	87 - 121	11/06/20 23:22	

Client: LU Engineers
Project: Cuba LandFill/50191-01
Sample Matrix: Water

Service Request: R2010208
Date Analyzed: 11/06/20

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ2013566-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	8260C	18.7	20.0	94	75-125
1,1,2,2-Tetrachloroethane	8260C	25.3	20.0	127 *	78-126
1,1,2-Trichloroethane	8260C	21.8	20.0	109	82-121
1,1,2-Trichloro-1,2,2-trifluoroethane	8260C	19.3	20.0	97	67-124
1,1-Dichloroethane (1,1-DCA)	8260C	20.6	20.0	103	80-124
1,1-Dichloroethene (1,1-DCE)	8260C	22.1	20.0	110	71-118
1,2,3-Trichlorobenzene	8260C	21.0	20.0	105	67-136
1,2,4-Trichlorobenzene	8260C	20.3	20.0	102	75-132
1,2-Dibromo-3-chloropropane (DBCP)	8260C	24.0	20.0	120	55-136
1,2-Dibromoethane	8260C	20.7	20.0	104	82-127
1,2-Dichlorobenzene	8260C	19.7	20.0	98	80-119
1,2-Dichloroethane	8260C	19.8	20.0	99	71-127
1,2-Dichloropropane	8260C	21.5	20.0	108	80-119
1,3-Dichlorobenzene	8260C	20.6	20.0	103	83-121
1,4-Dichlorobenzene	8260C	19.0	20.0	95	79-119
1,4-Dioxane	8260C	429	400	107	44-154
2-Butanone (MEK)	8260C	22.8	20.0	114	61-137
2-Hexanone	8260C	23.6	20.0	118	63-124
4-Methyl-2-pentanone	8260C	23.6	20.0	118	66-124
Acetone	8260C	22.1	20.0	110	40-161
Benzene	8260C	21.3	20.0	106	79-119
Bromochloromethane	8260C	19.3	20.0	96	81-126
Bromodichloromethane	8260C	19.0	20.0	95	81-123
Bromoform	8260C	22.4	20.0	112	65-146
Bromomethane	8260C	18.4	20.0	92	42-166
Carbon Disulfide	8260C	17.7	20.0	89	66-128
Carbon Tetrachloride	8260C	18.5	20.0	92	70-127
Chlorobenzene	8260C	19.9	20.0	100	80-121
Chloroethane	8260C	17.5	20.0	88	62-131
Chloroform	8260C	19.9	20.0	99	79-120
Chloromethane	8260C	25.7	20.0	128	65-135
Cyclohexane	8260C	21.2	20.0	106	69-120
Dibromochloromethane	8260C	21.7	20.0	108	72-128

Client: LU Engineers
Project: Cuba LandFill/50191-01
Sample Matrix: Water

Service Request: R2010208
Date Analyzed: 11/06/20

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ2013566-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Dichlorodifluoromethane (CFC 12)	8260C	20.3	20.0	101	59-155
Dichloromethane	8260C	20.2	20.0	101	73-122
Ethylbenzene	8260C	20.0	20.0	100	76-120
Isopropylbenzene (Cumene)	8260C	20.6	20.0	103	77-128
Methyl Acetate	8260C	20.5	20.0	102	61-133
Methyl tert-Butyl Ether	8260C	21.3	20.0	107	75-118
Methylcyclohexane	8260C	21.7	20.0	108	51-129
Styrene	8260C	20.4	20.0	102	80-124
Tetrachloroethene (PCE)	8260C	20.2	20.0	101	72-125
Toluene	8260C	20.4	20.0	102	79-119
Trichloroethene (TCE)	8260C	17.0	20.0	85	74-122
Trichlorofluoromethane (CFC 11)	8260C	18.7	20.0	94	71-136
Vinyl Chloride	8260C	20.2	20.0	101	74-159
cis-1,2-Dichloroethene	8260C	20.5	20.0	103	80-121
cis-1,3-Dichloropropene	8260C	20.1	20.0	101	77-122
m,p-Xylenes	8260C	40.5	40.0	101	80-126
o-Xylene	8260C	20.2	20.0	101	79-123
trans-1,2-Dichloroethene	8260C	23.0	20.0	115	73-118
trans-1,3-Dichloropropene	8260C	20.3	20.0	101	71-133

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

METALS

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BLANKS

Contract: R2010208

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: SW-4

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	23.00	U	23.00	U	23.00	U	23.00	U	23.000	U	P
Antimony	8.50	J	4.70	U	6.60	J	4.70	U	4.700	U	P
Arsenic	5.50	U	5.50	U	5.50	U	5.50	U	5.500	U	P
Barium	3.00	U	3.00	U	3.00	U	3.00	U	3.000	U	P
Beryllium	0.13	U	0.13	U	0.13	U	0.13	U	0.130	U	P
Cadmium	0.35	U	0.35	U	0.35	U	0.35	U	0.350	U	P
Mercury	0.077	U	0.077	U	0.077	U	0.077	U	0.077	U	CV
Calcium	220.00	U	220.00	U	220.00	U	220.00	U	220.000	U	P
Chromium	0.59	U	0.59	U	0.59	U	0.59	U	0.590	U	P
Cobalt	0.89	U	0.89	U	0.89	U	0.89	U	0.890	U	P
Copper	3.90	U	3.90	U	3.90	U	3.90	U	3.900	U	P
Iron	61.00	U	61.00	U	61.00	U	61.00	U	61.000	U	P
Lead	2.10	U	3.40	J	2.10	U	2.90	J	2.100	U	P
Magnesium	29.00	U	29.00	U	29.00	U	29.00	U	29.000	U	P
Manganese	3.70	U	3.70	U	3.70	U	3.70	U	3.700	U	P
Nickel	2.60	U	2.60	U	2.60	U	2.60	U	2.600	U	P
Potassium	200.00	U	200.00	U	200.00	U	200.00	U	200.000	U	P
Selenium	6.40	U	6.40	U	6.40	U	6.40	U	6.400	U	P
Silver	0.57	U	0.57	U	0.57	U	0.57	U	0.570	U	P
Sodium	130.00	U	130.00	U	130.00	U	130.00	U	130.000	U	P
Thallium	6.60	U	6.60	U	6.60	U	6.60	U	6.600	U	P
Vanadium	0.67	U	0.67	U	0.67	U	0.67	U	0.670	U	P
Zinc	9.40	U	9.40	U	9.40	U	9.40	U	9.400	U	P

Comments:

METALS

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BLANKS

Contract: R2010208

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: SW-4

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			23.00	U	23.00	U	23.00	U			P
Antimony			4.70	J	7.30	J	6.70	J			P
Arsenic			5.50	U	5.50	U	5.50	U			P
Barium			3.00	U	3.00	U	3.00	U			P
Beryllium			0.13	U	0.13	U	0.13	U			P
Cadmium			0.35	U	0.35	U	0.35	U			P
Mercury			0.077	U	0.077	U					CV
Calcium			220.00	U	220.00	U	220.00	U			P
Chromium			0.59	U	0.59	U	0.59	U			P
Cobalt			0.89	U	0.89	U	0.89	U			P
Copper			3.90	U	3.90	U	3.90	U			P
Iron			61.00	U	61.00	U	61.00	U			P
Lead			2.10	U	2.10	U	2.10	U			P
Magnesium			29.00	U	29.00	U	29.00	U			P
Manganese			3.70	U	3.70	U	3.70	U			P
Nickel			2.60	U	2.60	U	2.60	U			P
Potassium			200.00	U	200.00	U	200.00	U			P
Selenium			6.40	U	6.40	U	6.40	U			P
Silver			0.57	U	0.57	U	0.57	U			P
Sodium			130.00	U	130.00	U	130.00	U			P
Thallium			6.60	U	6.60	U	6.60	U			P
Vanadium			0.67	U	0.67	U	0.67	U			P
Zinc			9.40	U	9.40	U	9.40	U			P

Comments:

METALS

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BLANKS

Contract: R2010208

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: SW-4

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Arsenic	5.50	U	5.50	U	5.50	U	5.50	U			P

Comments:

METALS

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BLANKS

Contract: R2010208

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: SW-4

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Arsenic			5.50	U							P

Comments:

METALS

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SPIKE SAMPLE RECOVERY

SAMPLE NO.

SW-2S

Contract: R2010208

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: SW-4

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	2040.00		23.00	U	2000.0	102		P
Antimony	75 - 125	497.00		4.70	U	500.0	99		P
Arsenic	75 - 125	39.70		5.50	U	40.0	99		P
Barium	75 - 125	2120.00		3.00	U	2000.0	106		P
Beryllium	75 - 125	51.30		0.13	U	50.0	103		P
Cadmium	75 - 125	51.80		0.35	U	50.0	104		P
Mercury	75 - 125	1.030		0.077	U	1.00	103		CV
Calcium	75 - 125	6940.00		4890.00		2000.0	102		P
Chromium	75 - 125	210.00		0.59	U	200.0	105		P
Cobalt	75 - 125	523.00		0.89	U	500.0	105		P
Copper	75 - 125	246.00		3.90	U	250.0	98		P
Iron	75 - 125	1030.00		61.00	U	1000.0	103		P
Lead	75 - 125	512.00		2.10	U	500.0	102		P
Magnesium	75 - 125	2980.00		985.00	J	2000.0	100		P
Manganese	75 - 125	518.00		5.00	J	500.0	103		P
Nickel	75 - 125	518.00		2.60	U	500.0	104		P
Potassium	75 - 125	20600.00		907.00	J	20000.0	98		P
Selenium	75 - 125	996.00		6.40	U	1010.0	99		P
Silver	75 - 125	49.50		0.57	U	50.0	99		P
Sodium	75 - 125	29100.00		9190.00		20000.0	100		P
Thallium	75 - 125	1900.00		6.60	U	2000.0	95		P
Vanadium	75 - 125	514.00		0.67	U	500.0	103		P
Zinc	75 - 125	512.00		9.40	U	500.0	102		P

Comments: _____

ALS Environmental

METALS

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SPIKE SAMPLE RECOVERY

SAMPLE NO.

SW-2SD

Contract: R2010208

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: SW-4

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	2030.00		23.00	U	2000.0	102		P
Antimony	75 - 125	499.00		4.70	U	500.0	100		P
Arsenic	75 - 125	43.40		5.50	U	40.0	108		P
Barium	75 - 125	2110.00		3.00	U	2000.0	106		P
Beryllium	75 - 125	51.10		0.13	U	50.0	102		P
Cadmium	75 - 125	51.70		0.35	U	50.0	103		P
Mercury	75 - 125	1.020		0.077	U	1.00	102		CV
Calcium	75 - 125	6910.00		4890.00		2000.0	101		P
Chromium	75 - 125	209.00		0.59	U	200.0	104		P
Cobalt	75 - 125	518.00		0.89	U	500.0	104		P
Copper	75 - 125	246.00		3.90	U	250.0	98		P
Iron	75 - 125	1020.00		61.00	U	1000.0	102		P
Lead	75 - 125	507.00		2.10	U	500.0	101		P
Magnesium	75 - 125	2970.00		985.00	J	2000.0	99		P
Manganese	75 - 125	517.00		5.00	J	500.0	102		P
Nickel	75 - 125	517.00		2.60	U	500.0	103		P
Potassium	75 - 125	20700.00		907.00	J	20000.0	99		P
Selenium	75 - 125	996.00		6.40	U	1010.0	99		P
Silver	75 - 125	49.20		0.57	U	50.0	98		P
Sodium	75 - 125	29100.00		9190.00		20000.0	100		P
Thallium	75 - 125	1890.00		6.60	U	2000.0	94		P
Vanadium	75 - 125	513.00		0.67	U	500.0	103		P
Zinc	75 - 125	512.00		9.40	U	500.0	102		P

Comments: _____

METALS
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DUPLICATES

SAMPLE NO.: SW-2SD

Contract: R2010208

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: SW-4

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		2040.00		2030.00		0		P
Antimony		497.00		499.00		0		P
Arsenic		39.70		43.40		9		P
Barium		2120.00		2110.00		0		P
Beryllium		51.30		51.10		0		P
Cadmium		51.80		51.70		0		P
Mercury		1.030		1.020		1		CV
Calcium		6940.00		6910.00		0		P
Chromium		210.00		209.00		0		P
Cobalt		523.00		518.00		1		P
Copper		246.00		246.00		0		P
Iron		1030.00		1020.00		1		P
Lead		512.00		507.00		1		P
Magnesium		2980.00		2970.00		0		P
Manganese		518.00		517.00		0		P
Nickel		518.00		517.00		0		P
Potassium		20600.00		20700.00		0		P
Selenium		996.00		996.00		0		P
Silver		49.50		49.20		1		P
Sodium		29100.00		29100.00		0		P
Thallium		1900.00		1890.00		1		P
Vanadium		514.00		513.00		0		P
Zinc		512.00		512.00		0		P

Comments: _____

METALS

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LABORATORY CONTROL SAMPLE

Contract: R2010208

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: SW-4

Solid LCS Source: _____

Aqueous LCS Source: CPI

Analyte	Aqueous (ug/L			Solid (mg/K				
	True	Found	%R	True	Found	C	Limits	%R
Aluminum	2000	2030	102					
Antimony	500	493	99					
Arsenic	40	40	100					
Barium	2000	2090	104					
Beryllium	50	51	102					
Cadmium	50	52	104					
Mercury	1.000	0.998	100					
Calcium	2000	2110	106					
Chromium	200	209	104					
Cobalt	500	521	104					
Copper	250	243	97					
Iron	1000	1020	102					
Lead	500	511	102					
Magnesium	2000	1990	100					
Manganese	500	509	102					
Nickel	500	518	104					
Potassium	20000	19600	98					
Selenium	1010	997	99					
Silver	50	49	98					
Sodium	20000	20300	102					
Thallium	2000	1880	94					
Vanadium	500	512	102					
Zinc	500	510	102					

Comments: _____

SITE-WIDE INSPECTION FORM

Cuba Landfill Site
Town of Cuba, Allegany County

NAME OF INSPECTOR: Ben Seifert/Klajdi Macolli

COMPANY OF INSPECTOR: Lu Engineers

DATE OF INSPECTION: 10/27/2020

CURRENT USE OF SITE: Closed Landfill

EVIDENCE OF VANDALISM (wells, vents, protective cover damage):
None

EVIDENCE OF COVER SYSTEM INTRUSION (ruts, burrows, excavations):
None

EVIDENCE OF PENETRATIONS (poles, posts, stakes): None

EVIDENCE OF HUMAN ENCROACHMENT (trash, fire pits, tire/footprints):

GENERAL SITE CONDITION (gates, access road, culverts): Good, gates are secure/locked; lumber on both sides of the entrance. Access road is in good condition and cap generally appears to be in good condition with the exception pooling at the base of the cap at the southern edge of site, and of minor exposed geotextile material.

EVIDENCE OF EROSION, SETTLEMENT RUTTING, POTHOLES, SLIPPAGE:
Erosion control material (geotextile) exposed on hill directly adjacent to the access road (Refer to photographs)

EVIDENCE OF STRESSED VEGETATION OR BARE SPOTS: The easternmost portion of the willow trees adjacent to the detention pond appeared to be recovering, when compared to be unhealthy and/or dead state of the treets in the previous sampling period

EVIDENCE OF DAMAGE TO WELLS/VENTS:

EVIDENCE OF COVER SYSTEM SUBSIDENCE NEAR WELLS/VENTS:
None

EVIDENCE OF WILDLIFE INTRUSION (nests, burrows, wasp nests):
None

EVIDENCE OF SPILLED LIQUIDS (well tampering/vent blowout):
None

GAS VENTS: Unusual conditions- belching, whistling, excessive gas production:
None;

MONITORING WELLS: Well covers in place and secure: Yes

EVIDENCE OF DRAINAGE ISSUES (i.e., blockage due to sedimentation, ponding):
None

EVIDENCE OF SWALE OVERFLOW (i.e., stormwater pathway strays from swales):

None

EVIDENCE OF WILLOW TREE MORTALITY:
It appears that approximately 30% of the willow trees (eastern-most) are unhealthy and/or dead (Refer to photographs).

EVIDENCE OF PHYTOREMEDIATION FAILURE (i.e., excessive leachate on access road south of willow trees):
There was a small amount of standing water along the access road adjacent to the willow trees

All 14 gas vents were screened; no readings were detected.

LANDFILL/GAS VENT MONITORING DATA

Gas Vent	Explosivity	PID Reading (PID)

Enclosure 2

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

Site Details **Box 1**

Site No. **902012**

Site Name Cuba Municipal Waste Disposal

Site Address: Jackson Hill Road Zip Code: 14727
City/Town: Cuba
County: Allegany
Site Acreage: 38.900

Reporting Period: January 25, 2020 to January 25, 2021

	YES	NO
1. Is the information above correct?	☑	☐
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☑
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☑
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	☑
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	☐	☑

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Closed Landfill	☑	☐
7. Are all ICs/ECs in place and functioning as designed?	☑	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 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

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 O&M Plan

A Site Management Plan (SMP) was approved in August 2011 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

Site Management Plan

Soil Management Plan

Monitoring Plan
O&M Plan
Ground Water Use Restriction
Landuse Restriction
Surface Water Use Restriction

A Site Management Plan (SMP) was approved in August 2011 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 Declararion 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.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
155.00-1-6.15	
	Cover System
	Subsurface Barriers
	Fencing/Access Control
155.00-1-7	
	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 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
☑	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or 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
☑	☐

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

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. at 339 East Ave. Suite 200 Rochester, NY 14604
print name print business address

am certifying as Owner's Representative (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

4/6/21
Date

IC/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.

I ~~Gregory~~ L. Andrus, P.G. at 339 East Ave. Suite 200 Rochester, NY 14604
print name print business address

am certifying as a Professional ~~Engineer~~ Geologist for the Owner
(Owner or Remedial Party)

~~Geologist~~ NY P.G. # 207 — 4/7/21
Signature of Professional ~~Engineer~~, for the Owner or Remedial Party, Rendering Certification | Stamp (Required for PE) | Date