PRELIMINARY DESIGN REPORT EAST SIDE GENESEE SHORELINE RESILIENCY IMPROVEMENTS (MO-03 AND MO-09)

CITY OF ROCHESTER, NEW YORK

FEBRUARY 8, 2021

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PRELIMINARY DESIGN REPORT
EAST SIDE GENESEE SHORELINE RESILIENCY IMPROVEMENTS (MO-03 AND MO-09)

Project no.	**1940100197**
Client	**City of Rochester, New York**
Client no.	**1087699**
Document type	**Report**
Version	**1.0**
Date	**February 4, 2021**
Prepared by	**Veronica Davies, Dreher Whetstone**
Checked by	**Michael Manning**
Approved by	**Michael Manning**

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1. Introduction

1.1 Background

In 2017 and 2019, Lake Ontario and the St. Lawrence River System experienced high-water levels that resulted in severe flooding and erosion throughout the region. These conditions have caused adverse effects on property, infrastructure, business and public safety. Given changes to the climatic baseline, New York State recognizes that moving forward requires planning for and responding to a potential new normal set of climate circumstances. For the Lake Ontario Region, learning how to adapt to and prepare for a warmer, wetter and more dynamic regional climate is emerging as a reality. By focusing on proactive resiliency planning that is informed by useful climate information and local input, the Lake Ontario Region has an opportunity to promote shoreline resiliency that allows communities and stakeholders to adapt to climate-related challenges.

New York State launched the Lake Ontario Resiliency & Economic Development Initiative (REDI) to address climate adaptation needs for the eight counties impacted by Lake Ontario and St. Lawrence River flooding. This report covers the east side of the Genesee River in Rochester, New York, near the river's mouth at Lake Ontario and builds upon the March 2020 REDI Engineering Report. The March 2020 REDI Engineering Report included an evaluation of alternatives and 10% conceptual design to help guide the next steps of the project execution process and identified the following circumstances for the project area:

- Physical/Geological Conditions
- Environmental Conditions
- Ownership and Service Area
- Existing Facilities and Present Conditions
- Financial Status

The project area includes an approximate 975-foot stretch of Genesee River shoreline at the end of St. Paul Boulevard (Figure 1). The shoreline consists of the Monroe County Sheriff Marine Headquarters, NYSDEC Fishing Access, Monroe County Street, City of Rochester property, Town of Irondequoit WWPS, United States Coast Guard (USCG) and associated facilities, along with a limited number of tax parcels owned by other businesses and parties. This portion of land has been subject to repeated flooding and property damage during the events described above and will remain threatened by future high-water events if resiliency initiatives are not implemented. Under the REDI program, the project area has been separated into two distinct but connected projects: MO-03 St Paul Terminus and MO-09 NYSDEC Fishing Access.

Figure 1. *Site Location*

1.2 Purpose and Scope

The purpose of this report is to establish and confirm design objectives and criteria for the improvements recommended in the March 2020 REDI Engineering Report, for review and concurrence by the City, as well as regulatory and funding agencies, prior to initiating detailed design.

2. Proposed Improvements – Basis of Design

2.1 Design Water Levels

The proposed improvements and corresponding cost estimates in this engineering report are based on the water levels described in Table 2-1. These water levels are based on a review outlined in the March 2020 REDI Engineering Report.

Table 2-1. *Conceptual Design Water Levels*

Conceptual Design Water Level	Elevation (1985) Ft.
Low Water Level	242
Mean Water Level	245.3
High Water Level	250
Assumed Wave Height Allowance	2.0
Freeboard Allowance	1.0
Design Elevation	253.0

Note that this report distinguishes between flood protection measures and bank stabilization measures. It is assumed that freeboard allowance is not necessary for bank stabilization measures. Additionally, the wave height allowance is subject to judgment based on the proximity of the engineered improvement to the mouth of the Genesee River. In zones calling for flood protection, the flood protection measure is proposed to be maximized and extend to elevation of 253.0' (2-foot wave allowance, 1-foot freeboard). The design elevations have been coordinated with the floodplain analysis described in subsequent sections.

To comply with the National Flood Insurance Program (NFIP) and local floodplain development requirements, modeling and wave height will be reviewed as part of the detailed design phase. This will include consideration of this and other projects along the Genesee River to ensure that when the projects are considered as a whole, the proposed flood mitigation measures have no adverse impact on neighboring properties.

2.2 Geotechnical Evaluation

A geotechnical subsurface investigation and subsequent evaluation was conducted to support the geotechnical aspects of the design of the proposed improvements to the project shorelines. The subsurface conditions were evaluated based on an exploration program conducted from November 4 to November 6, 2020. A total of five borings were drilled by CME Associates, Inc., under subcontract to Ramboll, at the locations shown in Appendix A. The borings were advanced to 20 feet at all locations, except Boring EB -1, which was drilled to 40 feet.

The borings generally encountered three to ten feet of fill below the existing grade. The fill consists of heterogeneous mixtures of gravel, sand and silt. Cinders, concrete, asphalt and wood fragments were also encountered in the fill. The fill primarily classifies as moist, very loose to medium dense, silty sand with gravel (SM). The fill is underlain by alluvial deposits consisting of beds of fine-grained and coarse-grained soils. The upper alluvium stratum (most recent deposits) is approximately six feet to ten feet thick and consists of coarse-grained soils that primarily classify as wet, medium dense, silty sand with gravel (SM).

Fine-grained alluvial deposits were encountered below the coarse-grained stratum. These soils primarily classify as wet, soft, silty clay (CL-ML) and silt (ML). The fine-grained alluvium stratum was approximately 26 feet thick at Boring EB-1. The remaining borings terminated in the fine-grained soils, so the stratum thickness could not be approximated at those locations. Trace organics were occasionally encountered in both strata at varying depths. Denser, older, coarse-grained alluvial deposits were encountered below the fine-grained alluvium soils in the deeper boring (EB-1) at a depth of about 36 feet. The deeper, coarse-grained soils primarily classify as wet, medium dense silty sand with gravel (SM).

The proposed flood protection includes a new steel bulkhead at the end wall of the USCG boat slip. The new bulkhead will replace the existing bulkhead and be supported by the existing sheet pile wall. The existing sheet pile wall is laterally braced with tiebacks, based on the design drawings for the Rochester Harbor East Pier Repair project completed in 1985. The boring logs from the 1985 project were also reviewed to supplement the Ramboll investigation and assist in the geotechnical design recommendations. A sheet pile analysis was conducted to approximate the increase in load on the existing tiebacks due to the proposed steel bulkhead. The existing sheet pile wall and tiebacks were analyzed using the Shoring Suite software program. The design parameters and sheet pile analysis results are provided in the Geotechnical Evaluation (Appendix A).

2.3 Flood Wall

Monroe County Sheriff's Marine Headquarters

A new reinforced concrete flood wall will protect the Monroe County Sheriff Marine Headquarters to El. 253.0'. The proposed flood wall will extend the entire parcel length and tie into the new flood wall at the existing boat slip. The dock structure is a steel sheet pile wall with an eight-foot-wide concrete slab on grade along the dock. The proposed flood wall will approximately follow the alignment of the concrete slab on grade until it reaches the Sheriff's garage. There the wall will bend around the building and continue to follow the edge of the slab on grade to the boat slip. Bolts visible on the face of the sheeting near the waterline indicate that there may be a wale beam and tie rods and/or tie back anchors. As-built drawings for the dock structure or the Sheriff's garage are not currently available.

The new flood wall will be pile supported to avoid the presumed tie back anchors. The wall will be supported by a single row of timber friction piles spaced approximately eight to ten feet on center. The new flood wall will offset from the sheet pile dock approximately eight to nine feet. Four openings through the flood wall will be provided to allow access to the dock. One opening will be provided at the Sheriff's garage, one opening at the boat slip access, and one opening to the dock on either side of the garage. Stoplogs will be provided to close these openings during flood events. Temporary shoring and or underpinning may be required to protect the Sheriff's garage during the flood wall construction.

Additional field reconnaissance is required to advance the flood wall design. A detailed structural survey and subsurface investigations are required to quantify the existing dock structure construction, to verify the presence, spacing and depth of the presumed tie-back anchors, and to identify the garage foundation geometry and bearing elevation. Figure 2.1 provides a typical flood wall cross-section.

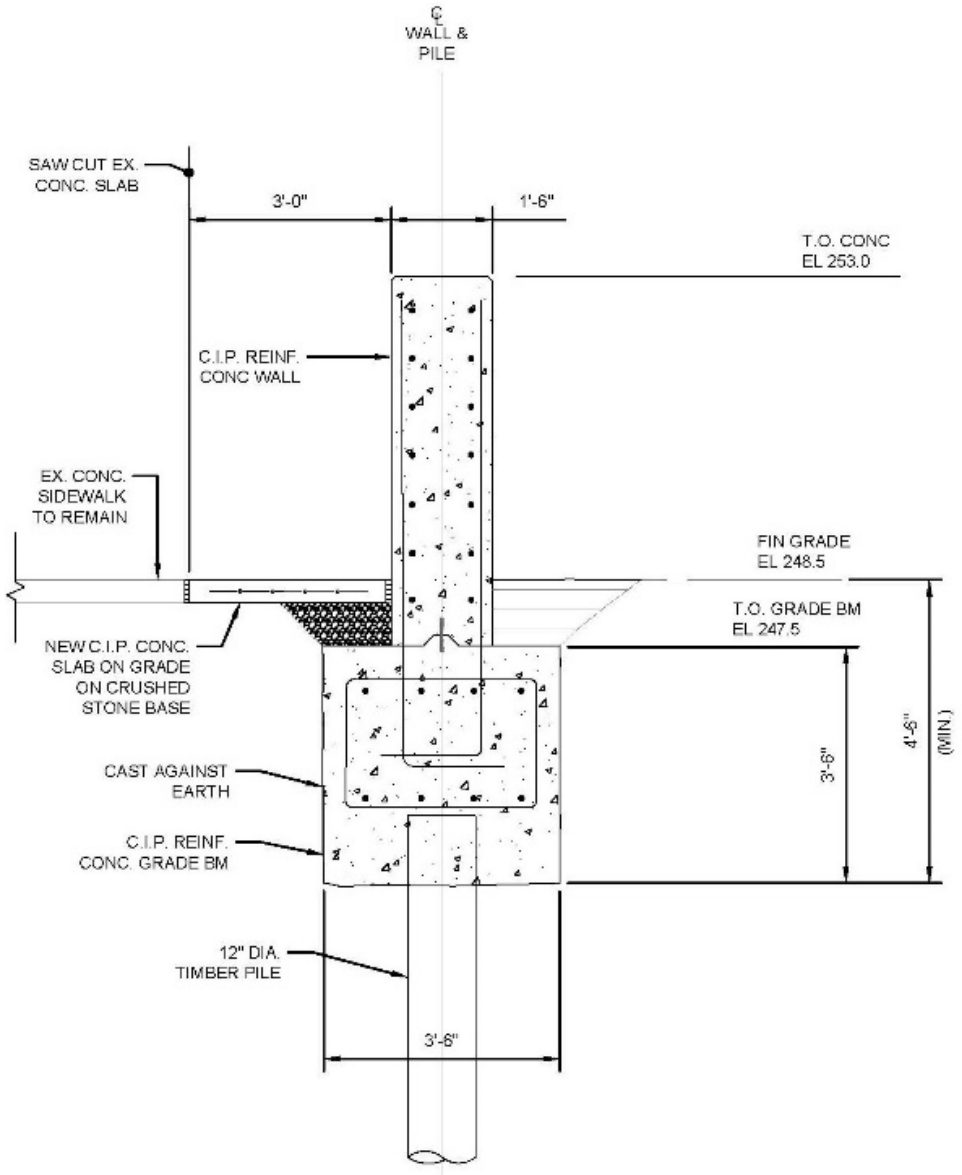

Figure 2.1. *Monroe County Sheriff Marine Headquarters Flood Wall Typical Detail*

NYSDEC Fishing Access

A new reinforced concrete flood wall will be constructed on the existing dock structure to protect the fishing access area to El. 253.0'. The new flood wall will follow the boat slip wall north until it intersects the fishing pier northern sheet pile wall, then it turns east following the pier along the Genesee River and terminates at Silk O'Loughlin's sea wall. A four-foot-wide opening will be provided to allow pedestrian access to the fishing pier. ADA fishing access to the Genessee River will be provided by four four-foot-wide openings along the northern sheet pile wall, and guard rails will be provided for fall protection at each of these access points. Aluminum or wooden stoplogs will be provided to close these openings during flood events. As-built drawings for the fishing access or boat slip structures are not currently available.

The new flood wall at the boat slip will be achieved by building a reinforced concrete wall on the existing boat slip steel sheet pile wall. The concrete sidewalk behind the sheeting will be saw cut and removed to allow excavation to expose the land side of the existing sheeting. The existing sheeting will be cleaned, shear studs will be welded to the sheeting, and the new concrete wall will be cast over the existing sheeting. Figure 2.2 provides typical detail for the existing shore wall modifications.

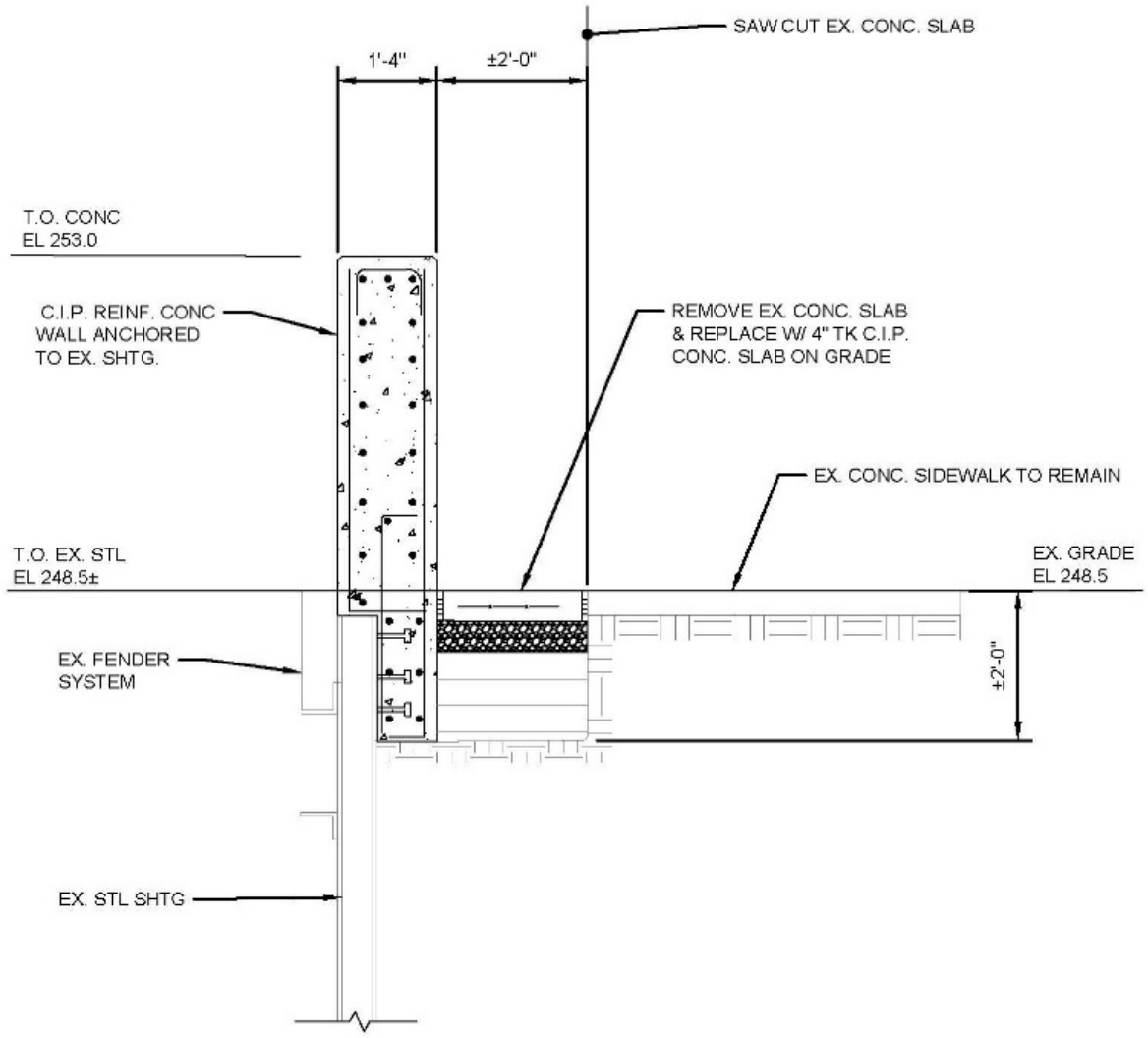

Figure 2.2. *NYSDEC Fishing Access Existing Shorewall Modifications Typical Detail*

Beyond the boat slip, the existing fishing pier extends west towards the Rochester Yacht Club. A new concrete wall will cross the width of the fishing pier to continue the flood wall to the northern edge of the fishing pier. The new wall will be anchored to the fishing pier slab with steel reinforcing bars and epoxy adhesive. At the northern edge of the fishing pier, the new wall will be anchored to the existing concrete

curb. The existing tube steel guard rails and posts will be removed as part of this work. Figures 2.3 and 2.4 provide typical details for the new concrete curb.

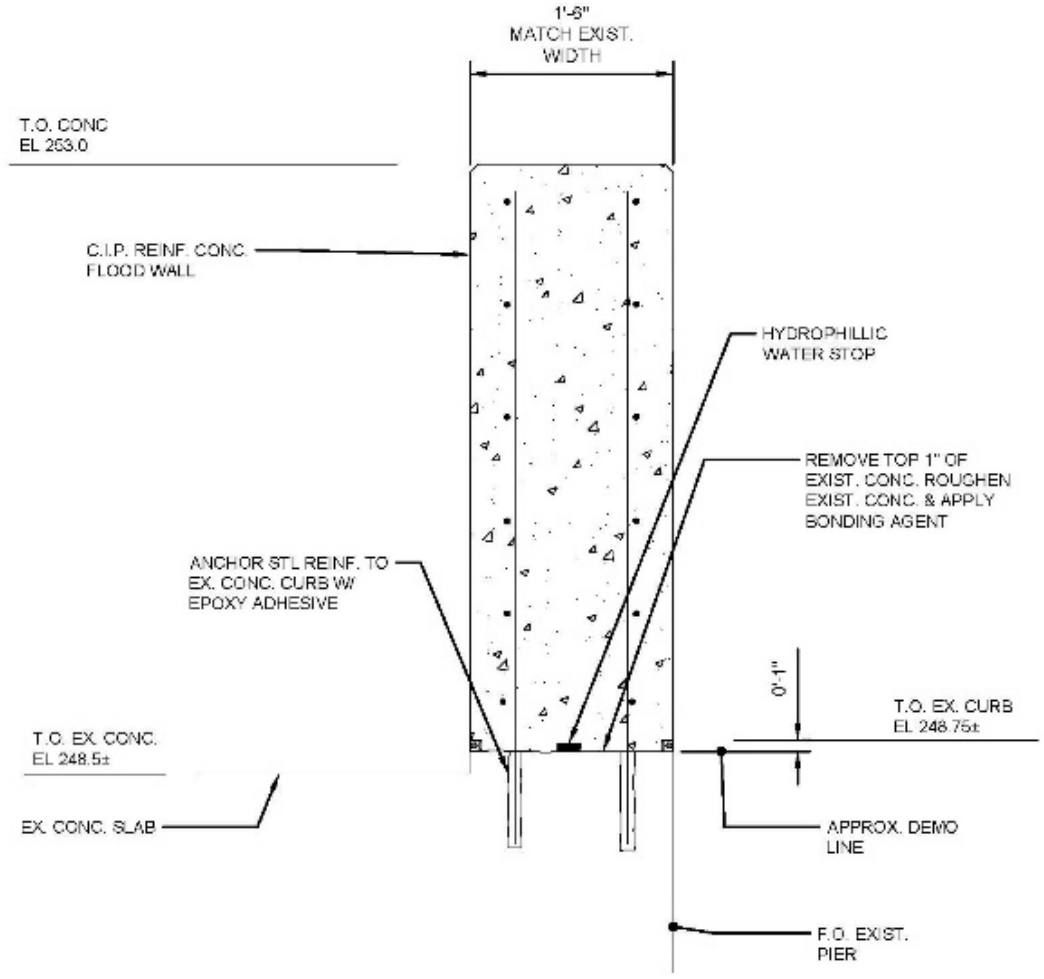

Figure 2.3. *NYSDEC Fishing Access Existing Curb Modifications Typical Detail*

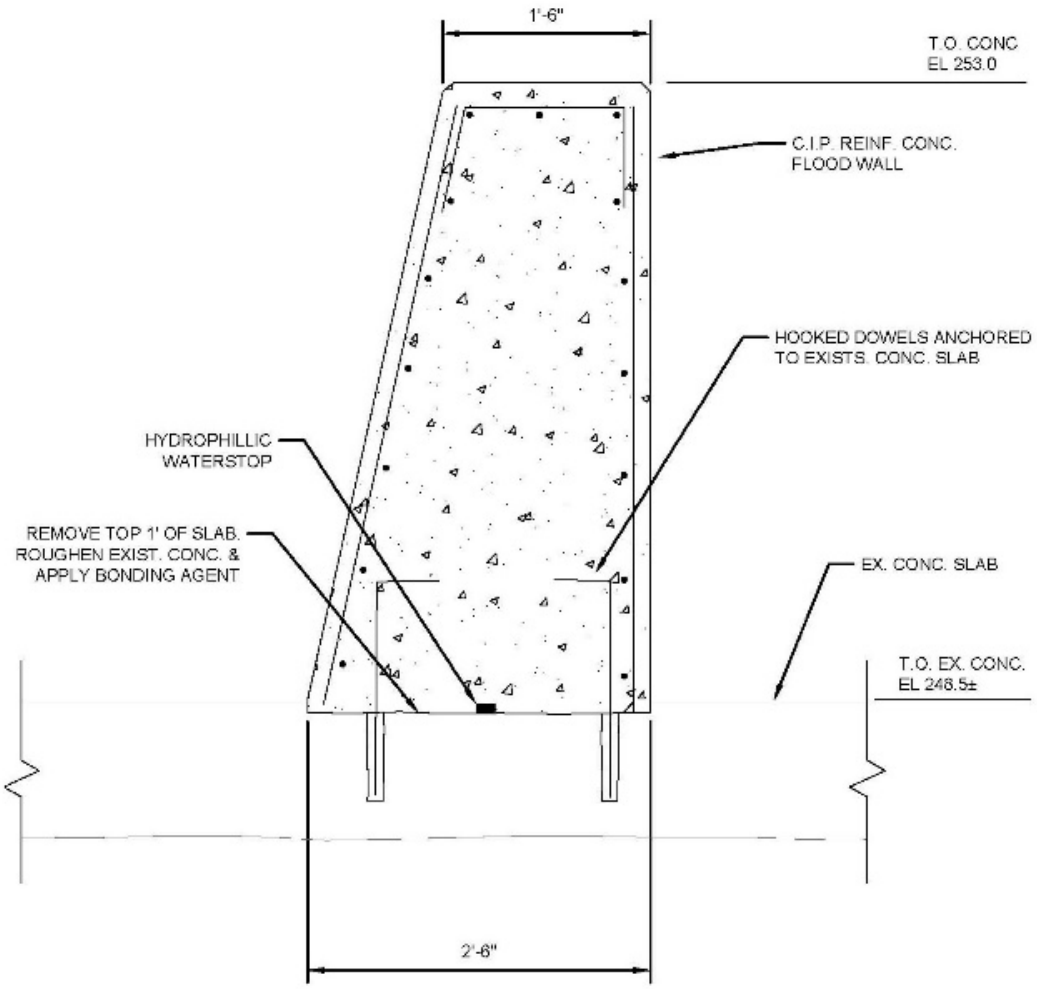

Figure 2.4. *NYSDEC Fishing Access New Concrete Curb Typical Detail*

The portion of the fishing access site along the Genesee River is contiguous with the eastern pier that extends into Lake Ontario. The USCG Rochester Station is also located along this pier, and record drawings of the 1985 pier modifications show the original pier construction: a rubble-filled timber crib structure with a concrete and rubble seawall. A map of the Port of Rochester dated 1894 shows the pier extending approximately to the current NYSDEC fishing access location. In 1985, the United States Army Corps of Engineers (USACE) designed and constructed a double wall sheet pile structure and one-foot-thick concrete cap slab to encapsulate the concrete rubble and timber crib structure. Based on this research, Ramboll assumes that the current pier construction at the fishing access is similar to that of the USCG pier: double sheet pile wall and one-foot-thick concrete cap encapsulating the original concrete rubble and timber crib structure. However, this assumption of the existing conditions must be verified by additional field investigation and subsurface exploration.

The cast-in-place concrete features will be analyzed and designed in accordance with USACE EM 1110-2-2100 "Stability Analysis of Concrete Structures", EM 1110-2-2104 "Strength Design for Reinforced Concrete Hydraulic Structures", and supplemented as needed by American Society of Civil Engineers (ASCE) 7 "Minimum Design Loads for Buildings and Other Structures" and American Concrete Institute (ACI) 318 "Building Code Requirements for Structural Concrete". Steel sheet pile bulkhead walls will be analyzed in accordance with USACE EM 1110-2-2504 "Design of Sheet Pile Walls". The docks and flood walls will be classified as "critical structures" having a Seismic Risk Category of III for evaluation according to the USACE standards, since it is likely that failure of the structure would cause loss of life.

2.4 Navigational Aid

The pier south of the Sheriff's station, Figure 2.5, currently has two post-mounted dual lamps for marine navigational lights. The navigation lights are located at both ends of the pier and are essential for marine traffic and improved sight distance. The set of lights closest to the mainland are fully operational. However, the lights at the end of the pier are not functioning due to water damage of the electrical system. The electric service runs within the pier below the BFE of 253'. The existing electrical lines are accessible by two hatches located on the surface of the pier.

Recommended improvements include:

- Replacement of electrical wires rated for wet conditions
- Installation of rigid waterproof conduit
- Replacement of one post-mounted dual lamp

Figure 2.5. *Pier South of Sheriff Station: Navigational Lights*

2.5 United States Coast Guard

The USCG Rochester Station's existing dock is a double wall steel sheet pile structure with internal steel tie-rods and a reinforced concrete cap slab that encapsulates a rubble-filled concrete seawall and timber crib and on a rubble stone foundation. A 1½-foot-high reinforced concrete curb runs along the landside of the dock structure and is integral with the reinforced concrete cap of the dock. The double wall sheet pile structure was completed in 1985 and designed by the USACE, and as-built record drawings and the final design report of this work were used by Ramboll to develop the flood protection concepts.

The existing concrete curb will be raised to protect the property to El. 253.0'. New reinforced concrete will be anchored to the existing concrete dock to provide the flood protection. At the boat slip, new cast-in-place reinforced concrete flood walls will be built behind the boat slip side walls and the existing steel bulkhead at the end wall will be removed and replaced by a taller steel bulkhead. Ramboll anticipates that the existing electrical panels and related underground conduits will need to be relocated as part of this work.

The initial project scope included protection of the slip only based on previous assessments that the curb along the dock was in satisfactory condition and at El. 250.00' would provide adequate flood protection. Based on additional review and consideration of the design elevation of 253.0' relative to the floodplain analysis, Ramboll recommends repairing this structure if budget allows.

Figures 2.6, 2.7 and 2.8 provide typical detail for the flood walls.

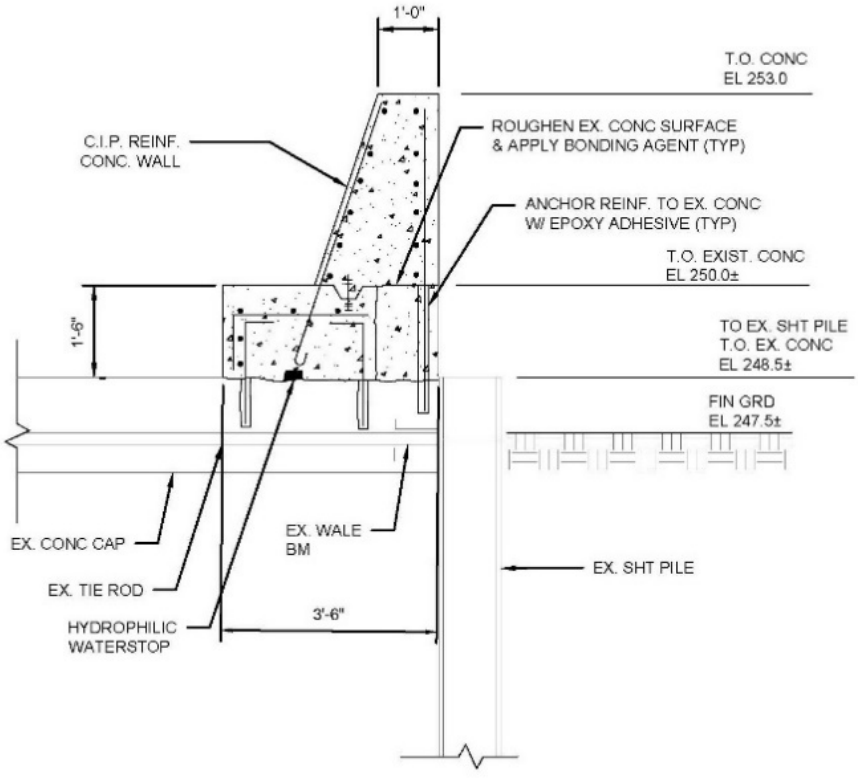

Figure 2.6. *US Coast Guard Station: Flood Wall along Dock Typical Detail*

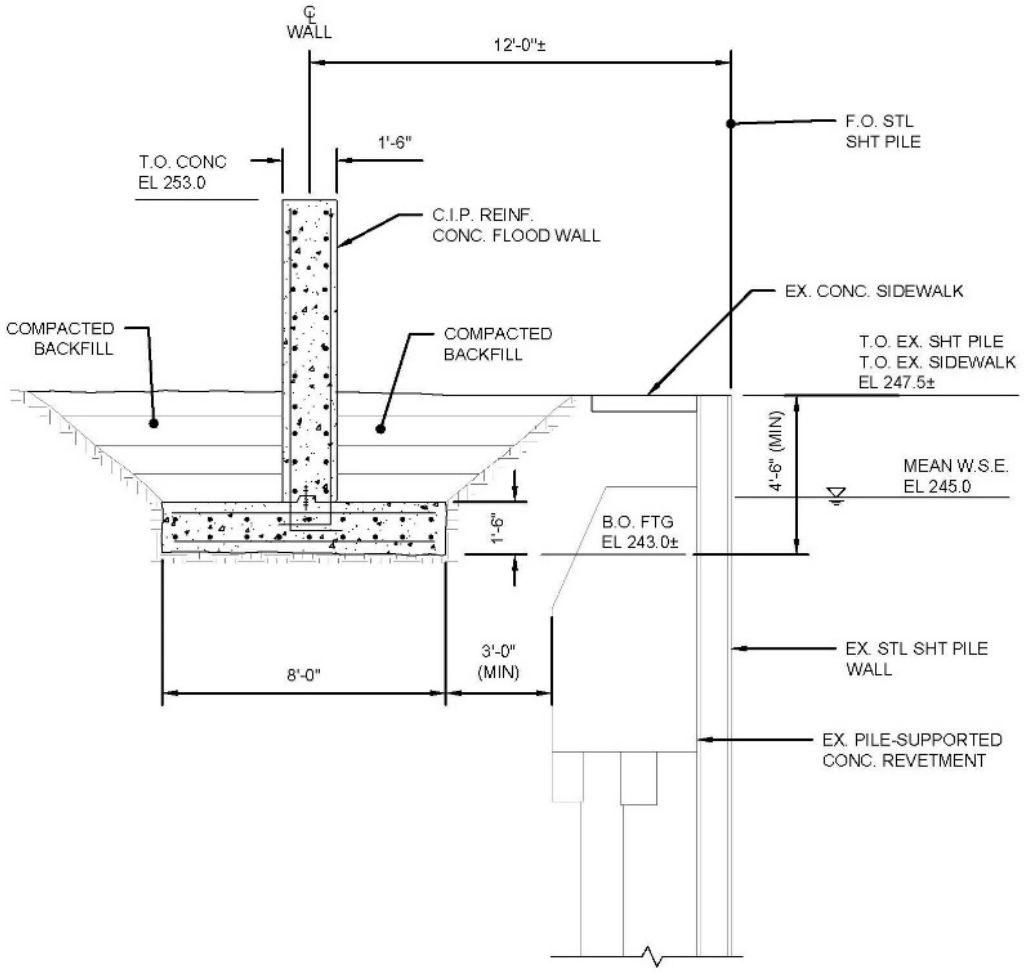

Figure 2.7. *US Coast Guard Station: Flood Wall Detail at Boat Slip Side Walls*

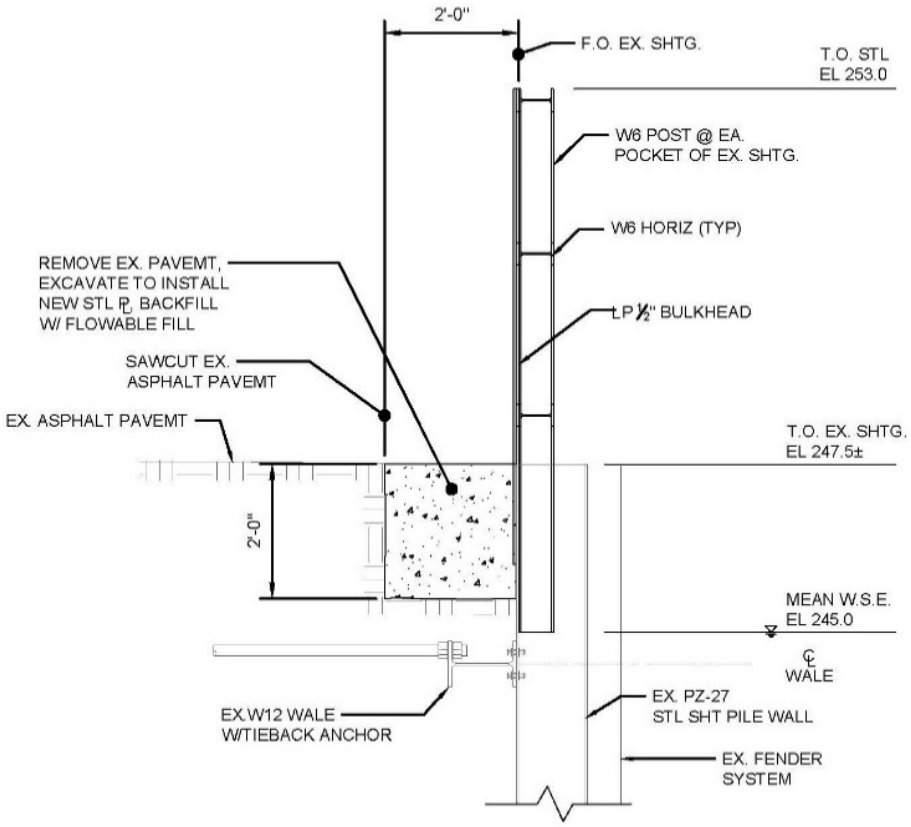

Figure 2.8. *US Coast Guard Station: Flood Wall Detail at Boat Slip End Wall*

The cast-in-place concrete features will be analyzed and designed in accordance with USACE EM 1110-2-2100 "Stability Analysis of Concrete Structures", EM 1110-2-2104 "Strength Design for Reinforced Concrete Hydraulic Structures", and supplemented as needed by American Society of Civil Engineers (ASCE) 7 "Minimum Design Loads for Buildings and Other Structures" and American Concrete Institute (ACI) 318 "Building Code Requirements for Structural Concrete". Steel sheet pile bulkhead walls will be analyzed in accordance with USACE EM 1110-2-2504 "Design of Sheet Pile Walls". The docks and flood walls will be classified as "critical structures" having a Seismic Risk Category of IV for evaluation according to the USACE standards, due to emergency response usage of the facility.

2.6 Summerville WWPS

The Summerville Wastewater Pumping Station (WWPS), owned by the Town of Irondequoit, serves the St. Paul Terminus area extending eastward and is impacted by elevated water levels in the area.

During the 2019 flood conditions, water approached the exterior of the WWPS, isolating access to the pumping station, and was close to inundating the wet well. More importantly, pooled water in the area overloaded the pumping system and reduced the ability of the system to maintain elevation of the sanitary sewer system below that of adjacent basements.

Stormwater improvements described in Section 2.6 will reduce I/I impact on the sanitary collection system and allow for the Summerville WWPS to operate as intended. Minor improvements to the WWPS and collection system are recommended to provide additional resiliency to the system.

Per discussion with Town of Irondequoit staff, the existing pumps and control system are nearing the end of their useful life, are limited in capacity and recommended for replacement with a system that meets Town pump station standards. Further, although there is a single natural gas fired pump providing minimal emergency pumping capacity, the station is not on backup power, placing it at risk during a major power failure.

A preliminary summary report of the current conditions and recommended improvements is included as Appendix B.

Recommended Improvements:

- Interior facility hardening consisting of interior curbing, crack repairs and sealing conduits
- Exterior facility hardening consisting of protecting wet well access and ventilation
- Collection system manhole improvements to reduce overland inflow into the system
- Replace pumping system with a submersible system with variable speed pumping capacity between 750 and 1,200 GPM
- Shared backup power system with the proposed Stormwater Pumping Station

2.7 Stormwater Management

Similar to the recommendations in the 10% Engineering Report, improvements to the stormwater management system at the St. Paul Terminus will be included in this project. Based on additional modeling and research into the localized drainage basin, the recommended stormwater pumping capacity is 7.5 CFS (approximately 3,500 GPM) to drain the drainage basin located in the vicinity of the St. Paul Terminus. Consistent with the March 2020 REDI Engineering Report, the proposed outcome is to minimize water ponding on St. Paul Blvd. and allow for safe and continuous access to the area.

With this approach, it is unlikely that the ground water level will be lowered during the pumping operation under flood water conditions.

Recommended Improvements:

- Additional storm drain piping and drain inlets
- Reconfiguration of select storm drains
- Precast concrete wet well, approximately ten feet in diameter and twelve feet deep
- Duplex submersible pumping system with a capacity of 3,500 GPM. Pumping system will be activated when water levels in the Genesee River approach 248.5’ and water will not easily drain by gravity
- Precast concrete valve vault
- Approximately 200 LF of 12-inch diameter HDPE force main discharging into the river
- NG backup emergency power generator (shared service with Summerville WWPS)

2.8 Floodplain Modeling

Floodplain modeling was performed to evaluate impacts of the project on flooding of the Oswegatchie River. This modeling is documented in a technical memorandum which is included in Appendix C. The

modeling indicates that the proposed flood wall and trail improvements should not have an adverse impact on base flood elevations within the study area.

2.9 Excavated Soil Management

A site management plan (SMP) was prepared to support environmental management during construction and is included as Appendix D.

3. Required Permits and Approvals

Implementation of the project will require permits, approvals and consistency reviews from USACE, NYSDEC, NYSOGS and NYSDOS. The NYSOPRHP will also be consulted regarding the potential presence of cultural resources within the project area. Table 3-1 outlines potential permits and regulatory agency involvement that will be necessary to implement the project based on the preliminary design reflected in this report and accompanying drawings (Appendix D).

Table 3-1. *Required Permits and Approvals*

Agency	Permit	Regulated Activity
US Fish and Wildlife Service	Consultation under Section 7 of Endangered Species Act	Threatened and Endangered Species Act compliance. Required for work near regulated species.
NYS Department of Environmental Conservation	State Environmental Quality Review Act (SEQRA)	Environmental impact assessment through preparation of Full Environmental Assessment Form.
	Article 34: Coastal Erosion Hazard Permit Area (Joint Application)	Disturbance within a designated Coastal Erosion Hazard Area.
	State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity	Stormwater discharges from construction phase activities disturbing one-acre or greater. Includes preparation and implementation of SWPPP.
NYS Natural Heritage Program	Consultation	Recommended for work near regulated habitat of State listed threatened and endangered Species and Significant Natural Communities.
NYS Department of State	Federal Consistency Review	Conformance with NYS Coastal Management Program; a federal coastal assessment form (FCAF) will be required.
NYS Office of Parks, Recreation and Historical Preservation	Consultation	Review under Section 106 of Historical Preservation Act and State Historic Preservation Law 14.09.
City of Rochester	Local Waterfront Consistency Review	Conformance with Local Waterfront Revitalization Program.
	Article 36 – Floodplain Development and Floodway Guidance	Disturbance within a designated 100-year flood zone. May require H&H analysis as part of floodplain review.
	GML 239-m	County Planning Board review of activities located within 500-feet of State or County highway, municipal boundary or park.
	Site Plan Approval	Approval of site modifications. (May not be necessary if no major site modifications [i.e., Building Permit only] – coordinate with municipal Code Enforcement Officer to identify process).

The following are significant regulatory issues that should be considered during design:

- The proposed project is limited to activities that will occur above the ordinary high-water mark (OHWM) of Lake Ontario, thereby limiting the required permits to those that are land-based.
- The cutting of trees should be limited to the extent practicable to minimize potential impacts to the Indiana and northern long-eared bats. The USACE and NYSDEC may include time restrictions on tree cutting as a permit condition.

4. Project Schedule

The project will be executed in accordance with the schedule included in Appendix E. A summary of significant milestones in provided in Table 4-1 below.

Table 4-1. *Schedule Summary*

Activity or Milestone	Target Date
Finalize "preliminary investigations"	Jan 15, 2021
Issue preliminary design deliverable to City	Jan 29, 2021
Review preliminary design with City	Feb 10, 2021
Conduct public meeting	Early Feb 2021
Submit permit applications	Feb 26, 2021
Final design – 60% design submittal	Feb 26, 2021
Final design – 90% design submittal	Apr 9, 2021
Advertise for bids	May 2021
Receive bids	Jun 2021
Award/execute construction contracts	Jul 2021
Issue notice to proceed to contractors	Aug 2021
Contractor's mobilize	Aug 2021
Construction substantially complete	Dec 2021
Construction complete	June 2022

5. Project Costs

A summary of estimated costs for the recommended improvements is presented in Table 5-1. Additional detail and supporting documentation are included in Appendix E.

Table 5-1. *Project Cost Summary*

Item/Description	Amount
Shore wall reconstruction	$1,167,909
Stormwater improvements	$405,000
Summerville WWPS Improvements	$194,593
Summerville WWPS Improvements (alternate)	$33,740
Shore wall improvements (USCG alternate)	$286,800
Subtotal	**$2,088,042**
Contingency allowance (20%)	$417,608
Escalation thru midpoint of construction	$37,000
Total estimated construction cost	**$ 2,542,650**
Engineering, legal and administrative fees	$600,000
Total estimated project cost	**$ 3,142,650**

The project will be constructed following public bidding in accordance with New York State General Municipal Law.

APPENDIX A – GEOTECHNICAL EVALUATION [INCLUDING BORING LOGS, LABORATORY TEST RESULTS]

Ramboll AES, Inc. 751 Arbor Way Suite 200 Blue Bell, PA 19422	Project: East Side Genesee Shoreline Shoreline Resiliency Improvements (MO-03 and MO-9)				Job Ref. 1940100197	
	Section: Subsurface Investigation				Sheet no./rev. 1	
	Calc. by MFN	Date 1/26/2021	Chk'd by	Date	App'd by	Date

DESCRIPTION

- Soil Exploration Data Report by CME Associates, Inc. (under contract to Ramboll); Test Borings (5 total) drilled from November 4 to November 6, 2020 and boring location plan.

CME Associates, Inc.

6035 Corporate Drive
East Syracuse, New York 13057
(315) 701-0522
(315) 701-0526 (Fax)

www.cmeassociates.com

Transmittal

December 16, 2020

Ramboll
333 West Washington Street
Syracuse, New York 13202

Attn: Mr. Rick Duff, Project Manager

Re: East Side Genesee River REDI Project
Rochester, New York
CME Project No.: 27718-05

Gentlepeople:

Enclosed you will find….

Number of Copies	Report Number/Description
1	27718B-01-1220/Subsurface Exploration Data Report

This report was emailed to Mr. Rick Duff at Rick.Duff@ramboll.com on 12/16/20.

Respectfully submitted,
CME Associates, Inc.

Nicholas A. Smith, P.G
Drilling Division Project Manager

NAS.cw

CME Associates, Inc.

6035 Corporate Drive
East Syracuse, New York 13057
(315) 701-0522
(315) 701-0526 (Fax)

www.cmeassociates.com

December 16, 2020

Ramboll
333 West Washington Street
Syracuse, New York 13202

Attn: Mr. Rick Duff, Project Manager
Email: Rick.Duff@ramboll.com

Re: Subsurface Exploration Data Report
East Side Genesee River REDI Project
Rochester, New York
Report No.: 27718B-01-1220

1.0 INTRODUCTION

CME Associates, Inc. (CME) was authorized by Ramboll (Client) to provide subsurface exploration services for the subject project. CME advanced five (5) Test Borings at the project site between November 4 and 6, 2020.

The Scope of Basic Services and this report have been provided pursuant to Client Purchase Order No. 1940001642, dated October 15, 2020. This report provides a summary of exploration activities conducted at the subject site.

2.0 EXPLORATION METHODOLOGY

Site Plans with approximate exploration locations were provided by Client (See Attached Client Provided Figures 8, 11, 12, and 13). Exploration locations were marked in the field by Client. Following the field mark out, CME contacted Dig Safe New York (DSNY) to clear public utilities in the vicinity of the work area. An Exploration Location Plan (ELP-1) is attached, which depicts the approximate as-drilled exploration locations.

Between November 4 and 6, 2020, five (5) Test Borings (I.D. Nos. EB-1, EB-2, and EB-4 through EB-6) were advanced using a CME 550X, ATV-mounted, rotary exploration drill rig, equipped with 3-¼" I.D. hollow stem augers and drive sampling tools. Two planned exploration locations (I.D. Nos. EB-3 and EB-7) were not drilled at the request of Client. Soil sampling was conducted using a 140-pound automatic hammer dropping through a distance of 30 inches to drive a 2" O.D. split barrel sampler in general conformance with ASTM Standard Practice D1586. Upon completion, the boreholes were backfilled with soil cuttings and topped with asphalt patch (as necessary) to match existing grade.

Samples were logged and visually classified in the field by CME's drillers, and a portion of each soil sample was placed and sealed in a glass jar. The soil classifications were later reviewed by CME Senior Geologist, Mark Schumacher, P.G. The visual soil classifications were made using a modified Burmister Classification System, as practiced by CME, and as generally described in the attached document entitled,

General Information & Key to Test Boring Logs. Subsurface Exploration Logs EB-1, EB-2, and EB-4 through EB-6 are attached.

3.0 STANDARD OF CARE

CME endeavored to conduct services identified herein in a manner consistent with that level of care and skill ordinarily exercised by members of the industry currently practicing in the same locality and under similar conditions as this project. No warranty, either expressed or implied, is made or intended by CME's proposal, contract, and written and oral reports, all of which warranties are hereby expressly disclaimed. CME shall not be responsible for the acts or omissions of Client, its contractors, agents and consultants. CME may rely upon information supplied by Client, its contractors, agents and consultants or information available from generally accepted reputable sources, without independent verification, and CME assumes no responsibility for the accuracy thereof.

4.0 CLOSING

CME's services have been provided according to the requirements of the referenced CME Proposal/Agreement. No other representations, expressed or implied, are intended or made with respect to the information provided herein, and including but not limited to, its suitability for use by others.

Respectfully Submitted,
CME Associates, Inc.

Nicholas A. Smith, P.G
Drilling Division Project Manager

Attachment Listing:

Client Provided Figure 8: Conceptual Layout of Stormwater Collection System (1 of 1)
Client Provided Figure 11 – Seawall Concept Plan A: Monroe County Sheriff's HQ (1 of 1)
Client Provided Figure 12 – Seawall Concept Plan B: NYS-DEC Fishing Access Area (1 of 1)
Client Provided Figure 13 – Seawall Concept Plan C: Silk O'Loughlin's and USCG Station (1 of 1)
CME Exploration Location Plan ELP-1 (1 of 1)
Subsurface Exploration Logs, EB-1, EB-2, and EB-4 through EB-6 (6 of 6)
General Information & Key to Test Boring Logs (4 of 4)

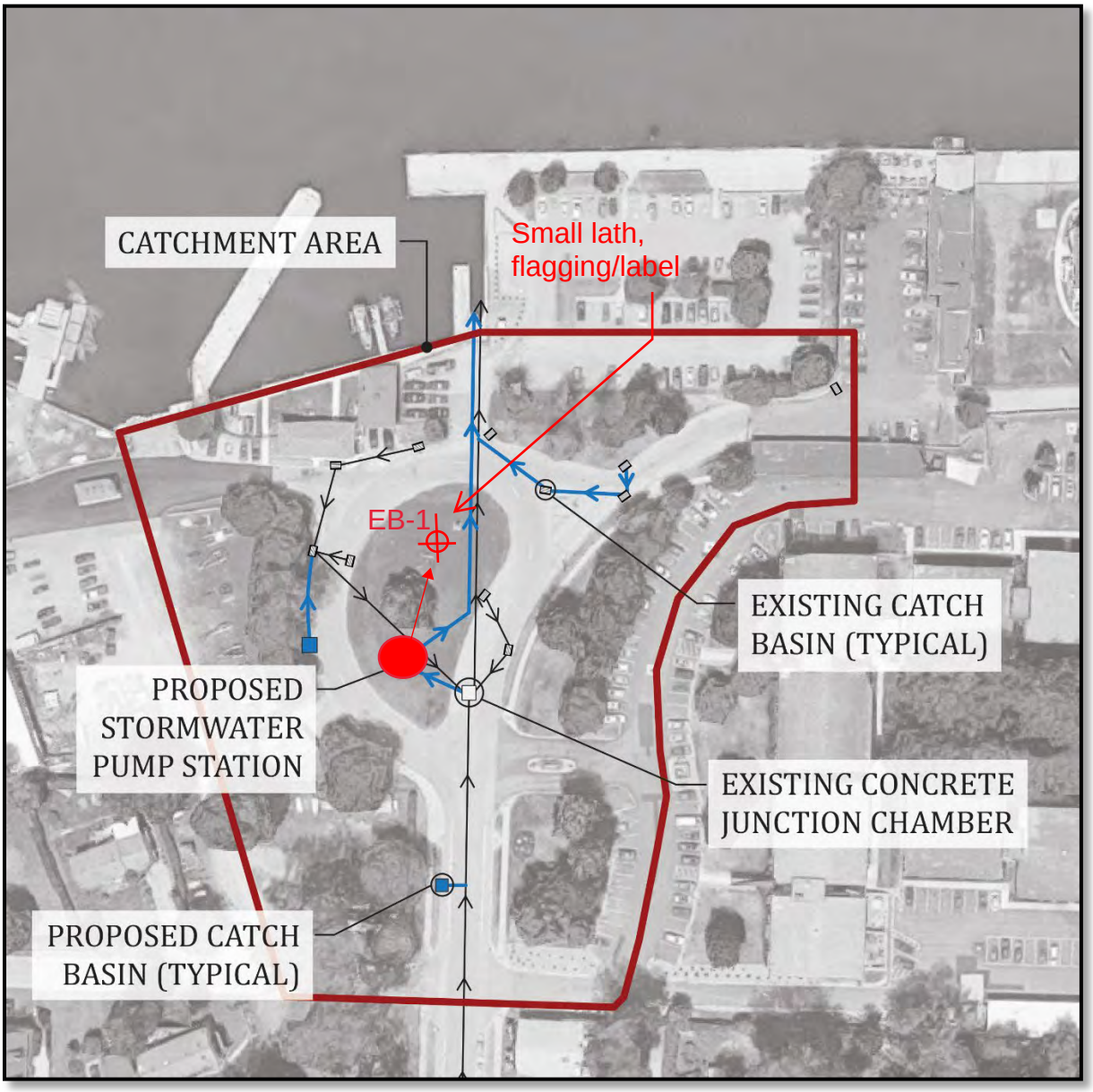

Figure 8: Conceptual Layout of Stormwater Collection System

Further, in order to eliminate the need for another check valve, it is recommended to route the proposed discharge pipe above ground for outflow above the water level at the river. A potential configuration of the discharge pipe to the Genesee River is shown below (**Figure 9**).

Proposed 40 ft Boring

Further, the existing top of seawall along the edge of the USCG ranges between 251.81 and 251.66 feet, approximately 1.5' below the established top of wall but above design flood elevation. This wall will also require complete removal and replacement to match all other flood walls in the area. For continuous protection, a seawall is proposed along the perimeter of the USCG boat launch area with a removable stop log barrier on each side, to be determined (**Figure 13**).

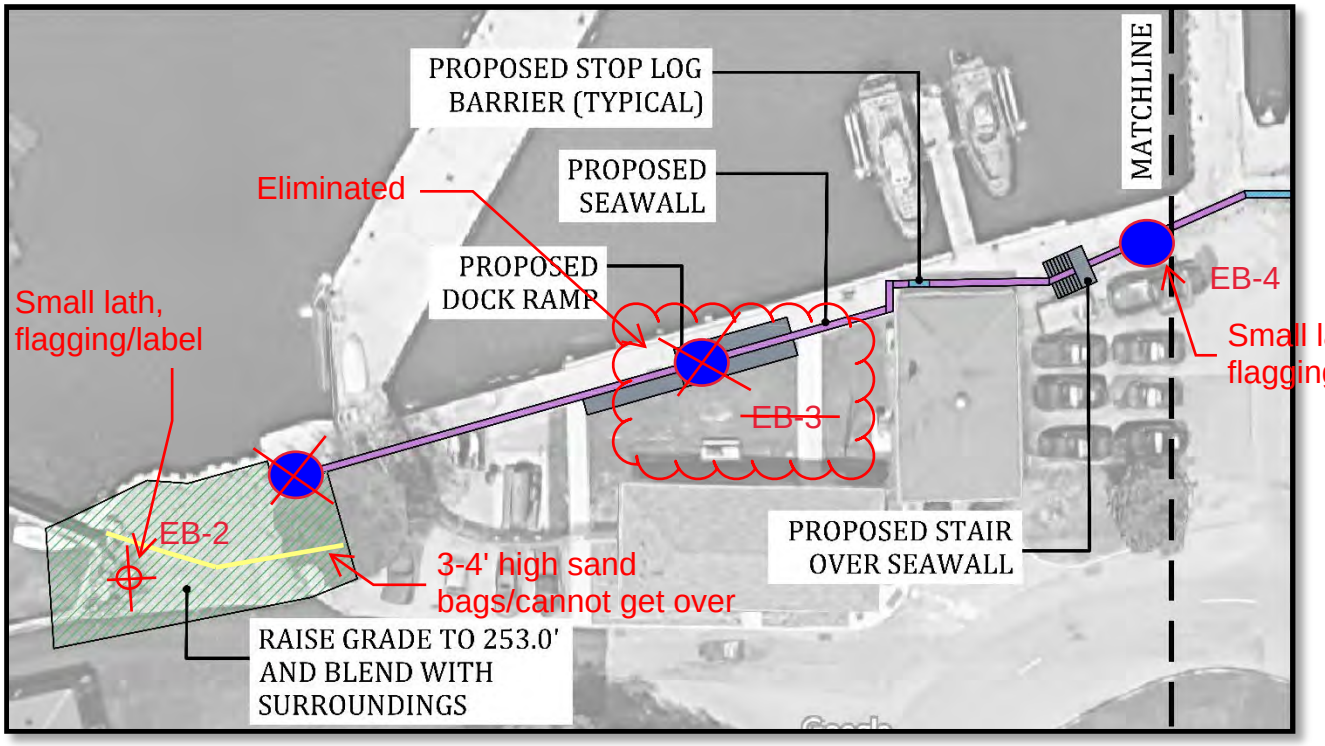

Figure 11 – Seawall Concept Plan A: Monroe County Sheriff's HQ

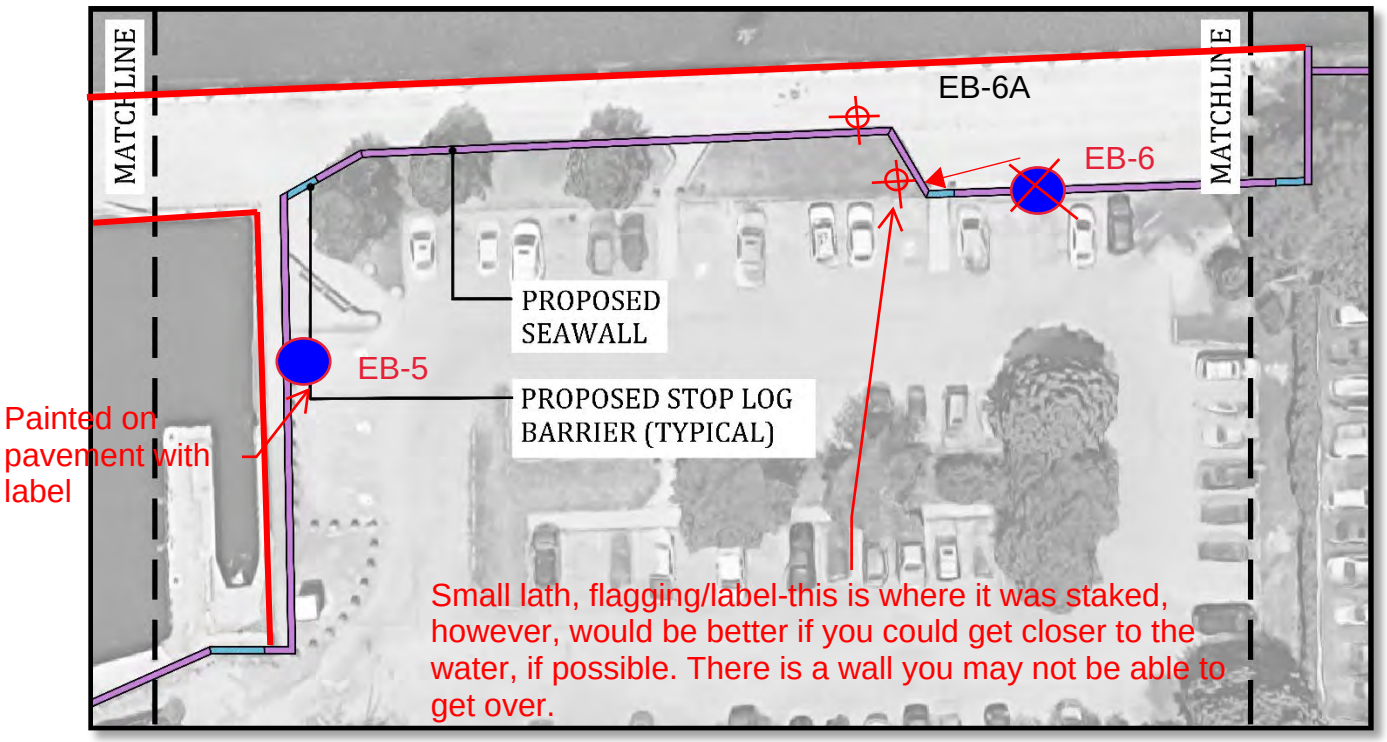

Figure 12 – Seawall Concept Plan B: NYS-DEC Fishing Access Area

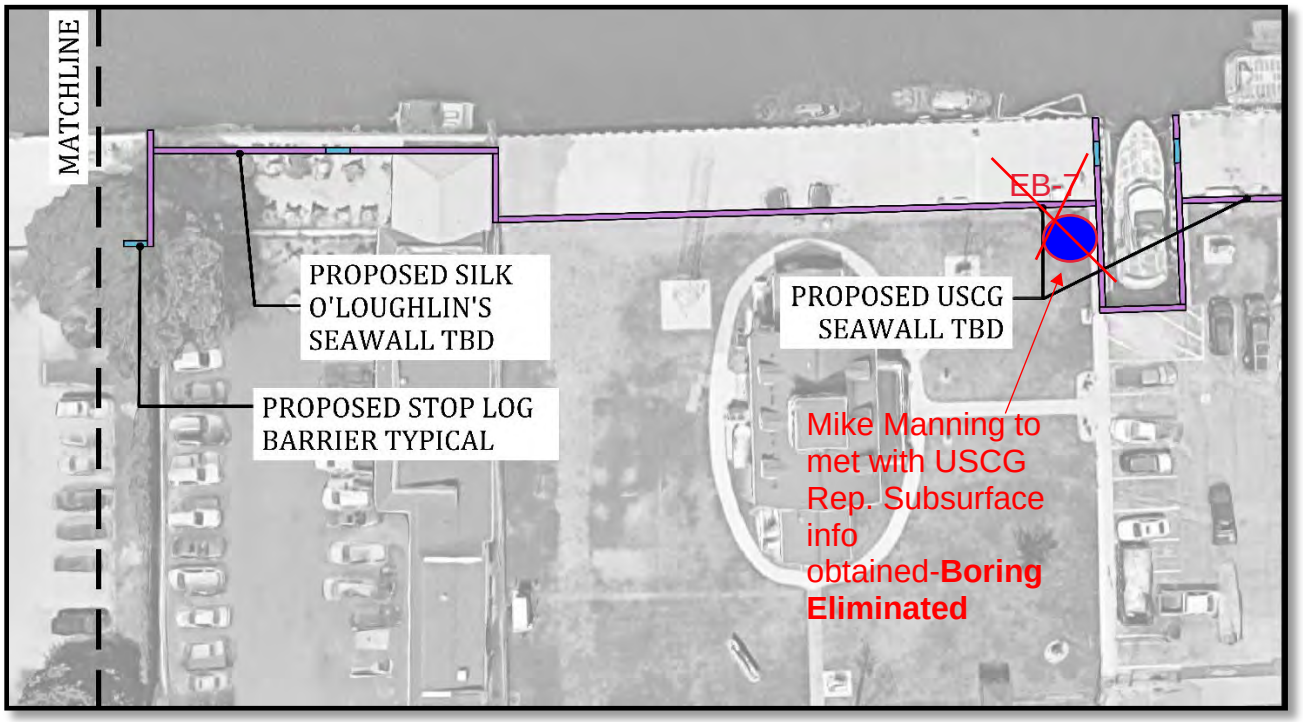

Figure 13 – Seawall Concept Plan C: Silk O'Loughlin's and USCG Station

- Wall Design

CME EXPLORATION LOCATION PLAN ELP-1

East Side Genesee River REDI Project - Rochester, New York

Attachment to CME Report No. 27718B-01-1220

CME Associates, Inc.
6035 Corporate Drive
East Syracuse, NY 13057
Phone: 315-701-0522

SUBSURFACE EXPLORATION TEST BORING LOG

Boring No.	**EB-1**
Page No.	1 of 2
Report No.	27718B-01-1220

Project Name:	East Side Genesee River REDI Project, Rochester, New York	**Date Started**	11/04/20
Client:	Ramboll	**Date Finished**	11/04/20
Location:	See Exploration Location Plan ELP-1	**Surface Elev.**	

METHODS OF INVESTIGATION

Driller:	Beau Fletcher	**Casing:**	3¼" ID H.S.A.
Driller:	Ryan Casatelli	**Casing Hammer:**	
Inspector:		**Other:**	
Drill Rig:	CME 550X	**Soil Sampler:**	2" OD Split Barrel
Type:	ATV Mounted	**Hammer Wt:**	140 lbs.
Rod Size:	AWJ	**Hammer Fall:**	30 in.

GROUNDWATER OBSERVATIONS

Date	Time	Depth (Ft.)	Casing At (Ft.)
11/04/20	While Drilling	6.7'	10.0'
11/04/20	Before Casing Removed	5.8'	40.0'
11/04/20	After Casing Removed	None Noted	out
11/04/20	After Casing Removed	caved @ 7.2'	out

LOG OF BORING SAMPLES / VISUAL CLASSIFICATION OF MATERIAL

Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From	Sample Depth (Ft.) To	Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine / and - 35 to 50% / some - 20 to 35% / little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
0	1A	0.0	0.5	SS/14	1-12-17-9	0.5	Topsoil and Organic Material (moist)	29
	1B	0.5	2.0				Miscellaneous FILL; Brown/Black cmf gravel, cmf sand, silt, asphalt debris, organic material (moist)	
1								
2	2	2.0	4.0	SS/18	10-11-11-8		Brown SILT, trace fine SAND (moist, very stiff) *See remark 1*	22
3								
4	3	4.0	6.0	SS/14	3-3-2-2		Brown/Grey cmf SAND, trace SILT, trace decaying ORGANIC MATERIAL (moist, loose)	5
5								
6	4	6.0	8.0	SS/19	6-7-12-14		Dark Grey cmf SAND, trace SILT (wet, medium compact)	19
7								
8	5	8.0	10.0	SS/20	3-2-10-17		Grey cmf SAND, little cmf GRAVEL, trace SILT, trace decaying ORGANIC MATERIAL (wet, medium compact)	12
9								
10	6	10.0	12.0	SS/24	14-11-22-31		Grey cmf SAND, trace SILT (wet, compact) *See remark 1*	33
11								
12	7	12.0	14.0	SS/14	5-12-5-4		Grey cmf SAND, trace SILT, trace mf GRAVEL (wet, medium compact)	17
13								
14	8	14.0	16.0	SS/5	2-2-2-2		Grey/Dark Brown SILT, little mf SAND, trace decaying ORGANIC MATERIAL (wet, medium stiff)	4
15								
16	9	16.0	18.0	SS/20	WH-1-2-1		Similar as above (wet, soft)	3
17								
18	10	18.0	20.0	SS/17	WH-WH-2-2		Grey/Brown SILT, little cmf SAND (wet, soft)	2
19								
20							Continued on page 2	

SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks: 1. Used 3" split spoon for environmental sampling.

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SUBSURFACE EXPLORATION TEST BORING LOG

Boring No.	EB-1
Page No.	2 of 2
Report No.	27718B-01-1220

LOG OF BORING SAMPLES / VISUAL CLASSIFICATION OF MATERIAL

Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From	Sample Depth (Ft.) To	Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine / and - 35 to 50% / some - 20 to 35% / little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
							Continued from page 1	
20	11	20.0	22.0	SS/20	WH-WH-WH-2		Grey/Brown SILT, trace mf SAND, trace decaying ORGANIC MATERIAL (wet, very soft)	0
21								
22	12	22.0	24.0	SS/22	WH-2-2-2		Grey/Brown SILT, trace mf SAND, trace CLAY, trace decaying ORGANIC MATERIAL, trace SHELLS (wet, medium stiff)	4
23								
24	13	24.0	26.0	SS/20	1-1-1-2		Similar as above (wet, soft)	2
25								
26	14	26.0	28.0	SS/23	2-2-2-3		Grey SILT, little CLAY, trace fine SAND (wet, medium stiff)	4
27								
28	15	28.0	30.0	SS/22	WH-WH-WH-2		Grey SILT and CLAY (wet, very soft)	0
29								
30	16	30.0	32.0	SS/24	WH-1-3-3		Grey/Brown SILT, trace mf SAND, trace decaying ORGANIC MATERIAL (wet, medium stiff)	4
31								
32	17	32.0	34.0	SS/20	WH-2-3-3		Dark Brown SILT, little decaying ORGANIC MATERIAL (wet, medium stiff)	5
33								
34	18	34.0	36.0	SS/22	2-2-4-5		Brown SILT, little decaying woody ORGANIC MATERIAL, trace mf SAND (wet, medium stiff)	6
35						36.0		
36	19	36.0	38.0	SS/20	8-5-9-7		Red/Brown cmf SAND and SILT, little mf GRAVEL (wet, medium compact)	14
37								
38	20	38.0	40.0	SS/14	5-8-9-14		Red/Brown cmf GRAVEL, some cmf SAND, some SILT (wet, medium compact)	17
39								
40							Bottom of Boring @ 40.0'	
41								
42								
43								
44								
45								

SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:

CME Associates, Inc.	6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522	**SUBSURFACE EXPLORATION TEST BORING LOG**	**Boring No.**	**EB-2**
			Page No.	1 of 1
			Report No.	27718B-01-1220

Project Name:	East Side Genesee River REDI Project, Rochester, New York	**Date Started**	11/06/20
Client:	Ramboll	**Date Finished**	11/06/20
Location:	See Exploration Location Plan ELP-1	**Surface Elev.**	

METHODS OF INVESTIGATION

Driller:	Beau Fletcher	**Casing:**	3¼" ID H.S.A.
Driller:	Ryan Casatelli	**Casing Hammer:**	
Inspector:		**Other:**	
Drill Rig:	CME 550X	**Soil Sampler:**	2" OD Split Barrel
Type:	ATV Mounted	**Hammer Wt:**	140 lbs.
Rod Size:	AWJ	**Hammer Fall:**	30 in.

GROUNDWATER OBSERVATIONS

Date	Time	Depth (Ft.)	Casing At (Ft.)
11/06/20	While Drilling	6.0'	8.0'
11/06/20	Before Casing Removed	14.2'	20.0'
11/06/20	After Casing Removed	None Noted	out
11/06/20	After Casing Removed	caved @ 3.0'	out

LOG OF BORING SAMPLES / VISUAL CLASSIFICATION OF MATERIAL

Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From	Sample Depth (Ft.) To	Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse, m - medium, f - fine; and - 35 to 50% / some - 20 to 35%, little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
0	1	0.0	2.0	SS/19	4-12-16-14		Miscellaneous FILL; Dark Brown cmf sand, mf gravel, silt, slag, brick, organic material (moist)	28
1							*See remark 1*	
2	2	2.0	4.0	SS/18	3-4-4-5		Brown cmf SAND, trace SILT (moist, loose)	8
3								
4	3	4.0	6.0	SS/16	3-4-6-8		Similar as above (wet, medium compact)	10
5								
6	4	6.0	8.0	SS/23	8-10-5-6		Grey/Brown cmf SAND, little cmf GRAVEL, trace SILT (wet, medium compact)	15
7								
8	5	8.0	10.0	SS/20	12-5-2-2		Grey cmf SAND, trace cmf GRAVEL, trace SILT, trace ORGANIC MATERIAL (wet, loose)	7
9								
10	6A	10.0	11.0	SS/24	1-1-2-2	11.0	Grey cmf SAND, little SILT, trace mf GRAVEL (wet, very loose)	3
11	6B	11.0	12.0				Grey/Dark Brown SILT, little mf SAND, trace decaying ORGANIC MATERIAL (wet, soft)	
12							*Approximately 2' of Sand removed from augers prior to sampling.*	
13	7	12.0	14.0	SS/15	1-1-2-1		Grey/Brown SILT, trace mf SAND, trace CLAY, trace decaying ORGANIC MATERIAL (wet, soft)	3
14	8	14.0	16.0	SS/17	1-1-1-1		Grey SILT, trace CLAY, trace fine SAND (wet, soft)	2
15								
16	9	16.0	18.0	SS/10	WH-WH-1-1		Grey/Brown SILT, little CLAY, trace fine SAND, trace decaying ORGANIC MATERIAL (wet, very soft)	1
17								
18	10	18.0	20.0	SS/20	1-2-2-2		Similar as above (wet, medium stiff)	4
19								
20							Bottom of Boring @ 20.0'	

SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks: 1. Utilized a 3" spoon for environmental sampling.

CME Associates, Inc.	6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522	**SUBSURFACE EXPLORATION TEST BORING LOG**	**Boring No.**	**EB-4**
			Page No.	1 of 1
			Report No.	27718B-01-1220

Project Name:	East Side Genesee River REDI Project, Rochester, New York	**Date Started**	11/05/20
Client:	Ramboll	**Date Finished**	11/05/20
Location:	See Exploration Location Plan ELP-1	**Surface Elev.**	

METHODS OF INVESTIGATION

Driller:	Beau Fletcher	**Casing:**	3¼" ID H.S.A.
Driller:	Ryan Casatelli	**Casing Hammer:**	
Inspector:		**Other:**	
Drill Rig:	CME 550X	**Soil Sampler:**	2" OD Split Barrel
Type:	ATV Mounted	**Hammer Wt:**	140 lbs.
Rod Size:	AWJ	**Hammer Fall:**	30 in.

GROUNDWATER OBSERVATIONS

Date	Time	Depth (Ft.)	Casing At (Ft.)
11/05/20	While Drilling	7.8'	8.0'
11/05/20	Before Casing Removed	12.0'	20.0'
11/05/20	After Casing Removed	None Noted	out
11/05/20	After Casing Removed	caved @ 3.0'	out

LOG OF BORING SAMPLES / VISUAL CLASSIFICATION OF MATERIAL

Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From	Sample Depth (Ft.) To	Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse, m - medium, f - fine; and - 35 to 50% / some - 20 to 35%, little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
0		0.0	0.3			0.3	Asphalt	
1	1	0.5	2.0	SS/15	16-9-7		Miscellaneous FILL; Brown/Black cmf sand, cmf gravel, asphalt debris (moist)	16
2	2	2.0	4.0	SS/16	8-5-4-3		Miscellaneous FILL; Dark Brown/Black cmf sand, cmf gravel, silt, cinders, brick, ash (moist)	9
4	3	4.0	6.0	SS/16	9-5-10-15		Grey cmf SAND, trace SILT (wet, medium compact)	15
6	4	6.0	8.0	SS/20	10-9-15-22		Similar as above (wet, medium compact)	24
8	5	8.0	10.0	SS/24	7-12-11-13		Grey/Brown, Similar as above (wet, medium compact)	23
10	6	10.0	12.0	SS/24	8-8-11-10		Similar as above (wet, medium compact)	19
12	7	12.0	14.0	SS/24	3-2-2-2		Grey/Brown cmf SAND, little SILT, trace fine GRAVEL, trace SHELLS (wet, loose)	4
14	8	14.0	16.0	SS/24	1-WH-WH-WH		Similar as above (wet, very loose)	0
16	9	16.0	18.0	SS/24	WH-WH-WH-WH	16.0	Grey/Brown SILT, little mf SAND, trace CLAY, trace decaying ORGANIC MATERIAL (wet, very soft)	0
18	10	18.0	20.0	SS/24	WH-WH-1-1		Grey/Brown SILT, some CLAY, trace mf SAND, trace decaying ORGANIC MATERIAL (wet, very soft)	1
20							Bottom of Boring @ 20.0'	

SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:

CME Associates, Inc.
6035 Corporate Drive
East Syracuse, NY 13057
Phone: 315-701-0522

SUBSURFACE EXPLORATION TEST BORING LOG

Boring No.	**EB-5**
Page No.	1 of 1
Report No.	27718B-01-1220

Project Name:	East Side Genesee River REDI Project, Rochester, New York	**Date Started**	11/05/20
Client:	Ramboll	**Date Finished**	11/05/20
Location:	See Exploration Location Plan ELP-1	**Surface Elev.**	

METHODS OF INVESTIGATION

Driller:	Beau Fletcher	**Casing:**	3¼" ID H.S.A.
Driller:	Ryan Casatelli	**Casing Hammer:**	
Inspector:		**Other:**	
Drill Rig:	CME 550X	**Soil Sampler:**	2" OD Split Barrel
Type:	ATV Mounted	**Hammer Wt:**	140 lbs.
Rod Size:	AWJ	**Hammer Fall:**	30 in.

GROUNDWATER OBSERVATIONS

Date	Time	Depth (Ft.)	Casing At (Ft.)
11/05/20	While Drilling	8.7'	14.0'
11/05/20	Before Casing Removed	14.5'	2.0'
11/05/20	After Casing Removed	None Noted	out
11/05/20	After Casing Removed	caved @ 8.0'	out

LOG OF BORING SAMPLES / VISUAL CLASSIFICATION OF MATERIAL

Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From	Sample Depth (Ft.) To	Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse, m - medium, f - fine; and - 35 to 50% / some - 20 to 35%, little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
0		0.0	0.5			0.5	Asphalt	
		0.5	1.2			1.2	Concrete and Rebar	
1	1	1.2	1.5			1.5	Fill; Grey cmf gravel, little cobbles (moist)	
	2	1.5	3.0	SS/13	2-2-2		Fill; Brown cmf sand, silt, cmf gravel (wet)	4
2								
3	3	3.0	4.5	SS/14	4-2-3		FILL; Grey mf sand, silt (wet)	5
4								
	4	4.5	6.0	SS/13	4-2-2		Miscellaneous FILL; Grey mf sand, silt, coal, cinders, ash (wet)	4
5								
6	5	6.0	8.0	SS/14	WH-WH-WH-WH		Grey mf SAND, some SILT (wet, very loose) *Possible fill or reworked material*	0
7								
8	6	8.0	10.0	SS/12	WH-WH-WH-WH		Grey/Brown cmf SAND, little SILT, trace mf GRAVEL (wet, very loose)	0
9								
10	7	10.0	12.0	SS/17	WH-WH-2-3		Grey SILT, some cmf SAND, trace CLAY, trace decaying woody ORGANIC MATERIAL, trace SHELLS (wet, soft)	2
11								
12	8	12.0	14.0	SS/16	5-20-10-4		Grey cmf SAND, little SILT, trace SHELLS (wet, compact)	30
13								
14	9	14.0	16.0	SS/12	4-2-2-2		Dark Grey, Similar as above (wet, loose)	4
15								
16	10	16.0	18.0	SS/14	1-2-1-2		Dark Grey SILT and cmf SAND, some cmf GRAVEL, trace decaying ORGANIC MATERIAL (wet, soft)	3
17								
18	11	18.0	20.0	SS/3	2-1-2-1		Dark Grey cmf GRAVEL, little SILT, little cmf SAND (wet, very loose)	3
19								
20							Bottom of Boring @ 20.0'	

SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:

CME Associates, Inc.
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East Syracuse, NY 13057
Phone: 315-701-0522

SUBSURFACE EXPLORATION TEST BORING LOG

Boring No.	**EB-6**
Page No.	1 of 1
Report No.	27718B-01-1220

Project Name:	East Side Genesee River REDI Project, Rochester, New York	**Date Started**	11/05/20
Client:	Ramboll	**Date Finished**	11/05/20
Location:	See Exploration Location Plan ELP-1	**Surface Elev.**	

METHODS OF INVESTIGATION

Driller:	Beau Fletcher	**Casing:**	3¼" ID H.S.A.
Driller:	Ryan Casatelli	**Casing Hammer:**	
Inspector:		**Other:**	
Drill Rig:	CME 550X	**Soil Sampler:**	2" OD Split Barrel
Type:	ATV Mounted	**Hammer Wt:**	140 lbs.
Rod Size:	AWJ	**Hammer Fall:**	30 in.

GROUNDWATER OBSERVATIONS

Date	Time	Depth (Ft.)	Casing At (Ft.)
11/05/20	While Drilling	8.4'	12.0'
11/05/20	Before Casing Removed	12.9'	20.0'
11/05/20	After Casing Removed	5.4'	out
11/05/20	After Casing Removed	caved @ 5.6'	out

LOG OF BORING SAMPLES / VISUAL CLASSIFICATION OF MATERIAL

Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From	Sample Depth (Ft.) To	Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine / and - 35 to 50% / some - 20 to 35% / little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
0	1A	0.0	0.5	SS/15	3-8-6-3	0.5	Topsoil and Organic Material (moist)	14
	1B	0.5	2.0				FILL; Brown/Grey cmf gravel, cmf sand, silt, organic material (moist)	
1								
2	2	2.0	4.0	SS/15	34-17-9-9		Miscellaneous FILL; Grey/Brown cmf gravel, cmf sand, concrete, silt (moist)	26
3								
4	3	4.0	6.0	SS/14	7-4-4-3		Miscellaneous FILL; Brown/Grey cmf gravel, silt, cmf sand, concrete, wood (moist)	8
5								
6	4	6.0	8.0	SS/14	5-5-6-7		Miscellaneous FILL; Dark Brown/Grey cmf sand, cmf gravel, wood, silt (moist)	11
7								
8	5	8.0	10.0	SS/12	8-3-5-7		Miscellaneous FILL; Light Brown/Grey wood (timbers), cmf sand, silt (wet)	8
9								
10							*Approximately 2' of Sand removed from augers prior to sampling.*	
	6	10.0	12.0	SS/20	4-3-4-5		Grey cmf SAND, trace SILT, trace decaying woody ORGANIC MATERIAL (wet, loose)	7
11								
12	7	12.0	14.0	SS/12	9-8-9-7		Grey/Red cmf SAND, some cmf GRAVEL, trace SILT, trace decaying ORGANIC MATERIAL (wet, medium compact)	17
13								
14	8	14.0	16.0	SS/18	3-5-5-4		Grey/Red cmf SAND, little SILT, little mf GRAVEL (wet, medium compact)	10
15								
16	9	16.0	18.0	SS/17	3-1-2-2		Grey/Brown cmf SAND, little SILT, trace cmf GRAVEL (wet, very loose)	3
17								
18							*Approximately 2' of Sand removed from augers prior to sampling.*	
	10	18.0	20.0	SS/20	1-2-1-1		Grey/Brown SILT, little mf SAND, trace decaying ORGANIC MATERIAL (wet, soft)	3
19								
20							Bottom of Boring @ 20.0'	

SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:

GENERAL INFORMATION & KEY TO TEST BORING LOGS

The **Subsurface Exploration – Test Boring Logs** produced **by CME Associates, Inc.** (CME) present observations and mechanical data collected by the CME Drill Crew while at the site, supplemented, at times, by classification of the materials removed from the borings determined through visual identification by technicians in the laboratory. It is cautioned that the materials removed from the borings represent only a fraction of the total volume of the deposits at the site and may not necessarily be representative of the subsurface conditions between adjacent borings or between the sampled intervals. The data presented on the Exploration Logs together with the recovered samples will provide a basis for evaluating the character of the subsurface conditions relative to the proposed construction. The evaluation must consider all the recorded details and their significance relative to each other. Often, analyses of standard boring data indicate the need for additional testing and sampling procedures to more accurately evaluate the subsurface conditions. Any evaluations of the contents of CME's report and the recovered samples must be performed by Licensed Professionals having experience in Soil Mechanics, Geological Sciences and Geotechnical Engineering. The information presented in this Key defines some of the methods, procedures and terms used on the CME Exploration Logs to describe the conditions encountered. Refer to the Log on page 4 for key number.

Key No. **Description**

1. The figures in the **DEPTH SCALE** column define the vertical scale of the Boring Log.

2. The **SAMPLE NO.** is used for identification on the sample containers and in the Laboratory Test Report or Summary.

3. The **SAMPLE DEPTH** column gives the depth range from which a sample was recovered.

4. The **TYPE / SAMPLE RECOVERY** column is used to signify the various types of samples. "SS is Split Spoon, "U" is Undisturbed Tube, and "C" is Rock Core. For soil and rock samples, the recovered length of the sample is recorded in inches.

5. **BLOWS ON SAMPLER** – This column shows the results of the "Standard Penetration Test (SPT) ASTM D1586", recording the number of blows required to drive a 2-inch outside diameter (O.D.) split spoon sampler into the ground beneath the casing. The number of blows required for each six inches of penetration is recorded. The total number of blows required for the 6-inch to 18-inch interval is summarized in the **SPT "N"** column and represents the "Standard Penetration Number". The outside diameter of the sampler, the hammer weight and the length of drop are noted in the **Methods of Investigation** portion of the log. A "WH" or "WR" in this column indicates that the sample spoon advanced a 6-inch interval under the **W**eight of **H**ammer + Rod or **W**eight of **R**od, respectively. If a rock core sample is taken, the core bit size designation is given here.

6. The **DEPTH OF CHANGE** column designates the depth (in feet) that the driller noted a compactness or stratum change. In soft materials or soil strata exhibiting a consistent relative density, it is difficult for the driller to determine the exact change from one stratum to the next. In addition, a grading or gradual change may exist. In such cases the depth noted is approximate or estimated only and may be represented by a dashed line. When continuous split spoon sampling is not employed, or an interval of several feet exists between samplings, the Depth of Change may not be indicated at all.

7. **VISUAL CLASSIFICATION OF MATERIAL** – Soil materials sampled and recovered are described by the Driller or Geotechnical Representative on the original field log. Notes of the Drillers observations are also placed in this column. Recovered samples may also be visually classified by a Geologist, Engineer, or Soil Technician. Visual soil classifications are made using a modified Burmister System as practiced by CME and as generally described in this Key and abbreviated on the Test Boring Log. This modified Burmister System is a type of visual-manual textural classification estimated by the Driller, Geologist, Engineer, or Technician on the basis of weight-fraction of the recovered material and estimated plasticity, among other characteristics. See Table 1 **"Classification of Materials"**. The description of the relative compactness or consistency is based upon the standard penetration number as defined in Table 2. The description of the recovered sample moisture condition is described as dry, moist, wet, or saturated. Water used to advance the boring may affect the moisture content of the recovered sample. Special terms may be used to describe recovered materials in greater detail, such terms are listed in ASTM D653. When sampling gravelly soils with a standard two-inch O.D. Split Spoon, the true percentage of gravel is often not recovered due to the relatively small sampler diameter. The presence of boulders, cobbles, and large gravel is sometimes, but not necessarily, detected by observation of the casing advancement and sampler blows and/or through the "action" of the drill rig, sampler and/or casing as reported by the Driller.

   The description of **Rock** is based upon the recovered rock core. Terms frequently used in the description are included in Tables 3, 4 and 5. The length of core run is defined as length of penetration between retrievals of the core barrel from the bore hole, expressed in inches. The core recovery expresses the length of core recovered from the core barrel per core run, in percent. The size core barrel used is noted in Column 5. An "N" size core, being larger in diameter than "A" size core, often produces better recovery, and is frequently utilized where accurate information regarding the geologic conditions and engineering properties is needed. An estimate of in-situ rock quality is provided by a modified core recovery ratio known as the **"Rock Quality Designation" (RQD)**. This ratio is determined by considering only pieces of core that are at least 4 inches long and are hard and sound. Breaks obviously caused by drilling are ignored. The percentage ratio between the total length of such core recovered and the length of core drilled on a given run is the RQD. Table 4 indicates in-situ rock quality as related to the **RQD**.

8. The **SPT "N"** or **RQD** is given in this column as applicable to the specific sample taken. In Very Compact coarse-grained soils and in Hard fine-grained soils the N-value may be indicated as 50+ or 100+. This typically means that the blow count was achieved prior to driving the sampler the entire 6-inch interval or the sampler refused further penetration. For an "N"size rock core, the RQD is reported here, expressed in percent (%).

9. **GROUNDWATER OBSERVATIONS** and timing noted by the Drill Crew are shown in this section. It is important to realize that the reliability of the water level observations depend upon the soil type (e.g. water does not readily stabilize in a hole through fine grained soils), and that drill water used to advance the boring may have influenced the observations. Groundwater levels typically fluctuate seasonally so those noted on the log are only representative of that exhibited during the period of time noted on the log. One or more perched or trapped water levels may exist in the ground seasonally. All the available resources and data should be evaluated. If definite conclusions cannot be made, it is often prudent to examine the conditions more thoroughly through test pit excavations or through groundwater observation well installations.

10. **METHODS of INVESTIGATION** provides pertinent information regarding the identity of the Drill Crew members, inspector (if any), drill rig make and model, drill rig mount vehicle, casing and type of advancement, soil and rock sampling tools and appurtenances used in the installation of the Test Boring.

TABLE 1 - CLASSIFICATION OF MATERIALS	
GROUP	**COARSE GRAINED SOILS TEXTURAL SIZES**
BOULDERS	larger than 12" diameter
COBBLES	12" diameter to 3" sieve
GRAVEL	3" - coarse - 1" - medium - 1/2" - fine - #4 sieve
SAND	#4 - coarse - #10 - medium - #40 - fine - #200 sieve
GROUP	**FINE GRAINED SOILS SIZE (PLASTICITY*)**
SILT	#200 sieve (0.074mm) to 0.005mm size (see below *)
CLAY	0.005mm size to 0.001 mm size (see below *)
GROUP	**ORGANIC SOILS, PEAT, MUCK, MARL**
ORGANIC	Based on smell, visual-manual and laboratory testing

ABBREVIATIONS	**TERM**	**ESTIMATED PERCENT OF TOTAL SAMPLE BY WEIGHT**
f - fine	and	35 to 50%
m - medium	some	20 to 35%
c - coarse	little	10 to 20%
	trace	0 to 10%

***PLASTICITY DESCRIPTIONS and INDICATOR FIELD TESTS**			
		DRY STRENGTH TEST	
TERM	**PLASTICITY INDEX**	**INDICATION**	**FIELD TEST RESULT**
non-plastic	0 - 3	Very low	falls apart easily
slightly plastic	4 - 15	Slight	easily crushed by fingers
plastic	15 - 30	Medium	difficult to crush
highly plastic	31 or more	High	impossible to crush with fingers
Other Field Tests include: Dilatancy, Thread and Shine Testing			

*TABLE 2 - DESCRIPTION OF SOIL COMPACTNESS OR CONSISTENCY based on SPT "N"**		
Primary Soil Type	**Descriptive Term of Compactness**	**Range of Standard Penetration Resistance (N)**
COARSE GRAINED SOILS	Very Loose	less than 4 blows per foot
(More than half of Material is larger than No. 200 sieve size)	Loose	4 to 10
	Medium Compact	10 to 30
	Compact	30 to 50
	Very Compact	Greater than 50
FINE GRAINED SOILS	**Descriptive Term of Consistency**	**Range of Standard Penetration Resistance (N)**
(More than half of material is smaller than No. 200 sieve size)	Very Soft	less than 2 blows per foot
	Soft	2 to 4
	Medium Stiff	4 to 8
	Stiff	8 to 15
	Very Stiff	15 to 30
	Hard	Greater than 30
*The number of blows of 140-pound weight falling 30 inches to drive a 2-inch O.D., 1-3/8 inch I.D. sampler 12 inches is defined as the Standard Penetration Resistance, designated "N".		

TABLE 3 - ROCK CLASSIFICATION TERMS		
Rock Classification Terms		**Field Test or Meaning of Term**
Hardness	Soft	Scratched by fingernail. Crumbles under firm blows with a geologic pick.
	Medium Soft	Shallow indentations (1 to 3 mm) can be made by firm blows of a geologic pick. Can be peeled with a pocketknife with difficulty.
	Medium Hard	Scratched distinctly by penknife or steel nail. Can't be peeled or scraped with knife.
	Hard	Scratched with difficulty by penknife or steel nail. Requires more than one blow with a geologic hammer to break it
	Very Hard	Cannot be scratched by penknife or steel nail. Breaks only by repeated heavy blows with a geologic hammer.
Bedding (Divisional planes and/or surfaces separating it from layers above and below)	Thinly Laminated Laminated Thinly Bedded Medium Bedded Thickly Bedded Massive	less than 1/8th inch 1/8th to 1 inch 1 inch to 4 inches 4 inches to 12 inches 12 inches to 48 inches greater than 48 inches

TABLE 4 **Relation of Rock Quality Designation (RQD) and in-situ Rock Quality**	
RQD %	**Rock Quality Term Used**
90 to 100	Excellent
75 to 90	Good
50 to 75	Fair
25 to 50	Poor
0 to 25	Very Poor

TABLE 5 – BEDROCK WEATHERING CLASSIFICATION	
Classification	**Diagnostic Features**
Fresh	No visible sign of decomposition or discoloration. Rings under hammer impact.
Slightly Weathered	Slight discoloration inwards from open fractures, otherwise similar to Fresh.
Moderately Weathered	Discoloration throughout. Strength somewhat less than fresh rock but cores cannot be broken by hand or scraped with knife. Texture observed.
Highly Weathered	Most minerals somewhat decomposed. Specimens can be broken by hand with effort or shaved with knife. Core stones present in rock mass. Texture becoming indistinct but fabric preserved.
Completely Weathered	Minerals decomposed to soil, but fabric and structure preserved (e.g. Saprolite). Specimens easily crumbled or penetrated.
Residual Soil	Advanced state of decomposition resulting in plastic soils. Rock fabric and structure completely destroyed. Large volume change.

CME Associates, Inc.
6035 Corporate Drive
East Syracuse, NY 13057
Phone: 315-701-0522

SUBSURFACE EXPLORATION TEST BORING LOG

Boring No.	**B-2**		
Page No.	1 of 1		
Report No.			
Project Name:		**Date Started**	
Client:		**Date Finished**	
Location:		**Surface Elev.**	

METHODS OF INVESTIGATION

Driller:	10	**Casing:**	10
Driller:		**Casing Hammer:**	
Inspector:		**Other:**	
Drill Rig:		**Soil Sampler:**	
Type:		**Hammer Wt:**	
Rod Size:		**Hammer Fall:**	

GROUNDWATER OBSERVATIONS

Date	Time	Depth (Ft.)	Casing At (Ft.)
	While Drilling	9	9
	Before Casing Removed		
	After Casing Removed		
	After Casing Removed		

LOG OF BORING SAMPLES | **VISUAL CLASSIFICATION OF MATERIAL**

Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From	Sample Depth (Ft.) To	Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine / and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
1	2	3	3	4	5	6	7	8

SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:

Ramboll AES, Inc.
751 Arbor Way
Suite 200
Blue Bell, PA 19422

Project: East Side Genesee Shoreline Shoreline Resiliency Improvements (MO-03 and MO-9)				Job Ref. 1940100197	
Section: Sheet Pile Analysis				Sheet no./rev. 1	
Calc. by MFN	Date 1/27/2021	Chk'd by	Date	App'd by	Date

DESCRIPTION

- Sheet pile analysis of proposed Bulkhead @ USCG Boat Slip End Wall.

RESULTS

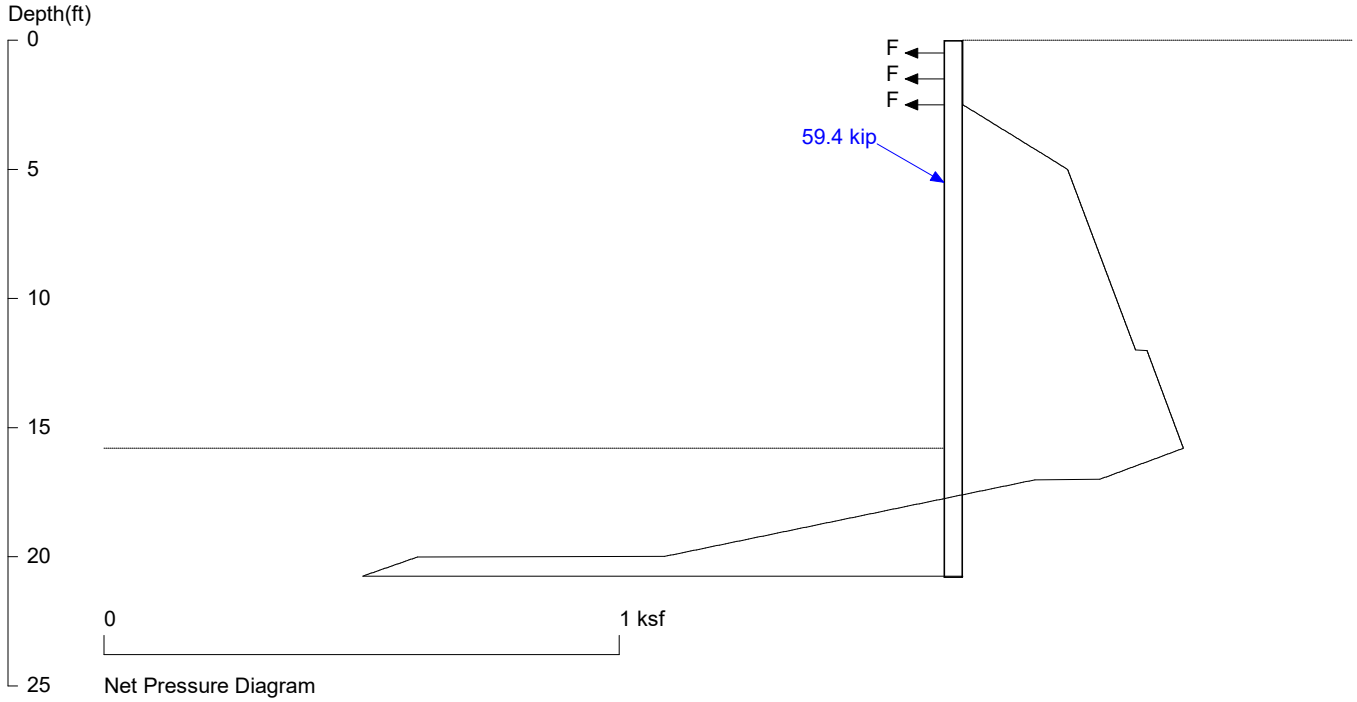
Proposed Steel Bulkhead Design

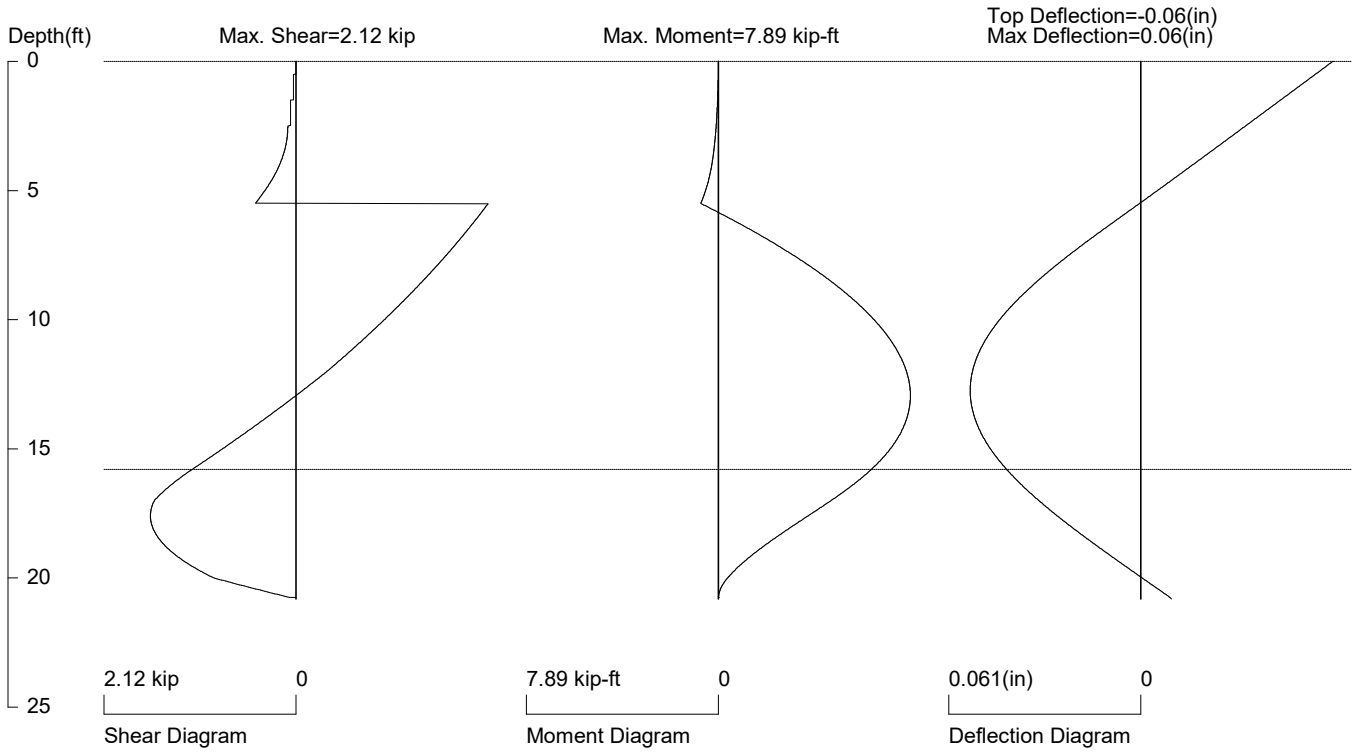
- Existing bulkhead.
  - crest @ EL 250.0
  - supported by steel sheet pile (PZ 27) w/ tieback @ EL 244.5. Bottom of sheet @ EL 222.5. Tieback spacing approx. 20 feet, additional tieback details are unknown.
- New bulkhead crest @ EL 253.0.
  - Wind load (30 psf) is critical load case.
  - New bulkhead increases tieback load by approx. 2.2 kips (or 3.7%).

Rochester-REDI_East Side

EXISTING

USCG Boat Slip





PRESSURE, SHEAR, MOMENT, AND DEFLECTION DIAGRAMS

Based on pile spacing: 1.0 foot or meter

User Input Pile, PZ27: E (ksi)=29000.0, I (in4)/foot=184.2

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Rochester-REDI_East Side

USCG Boat Slip

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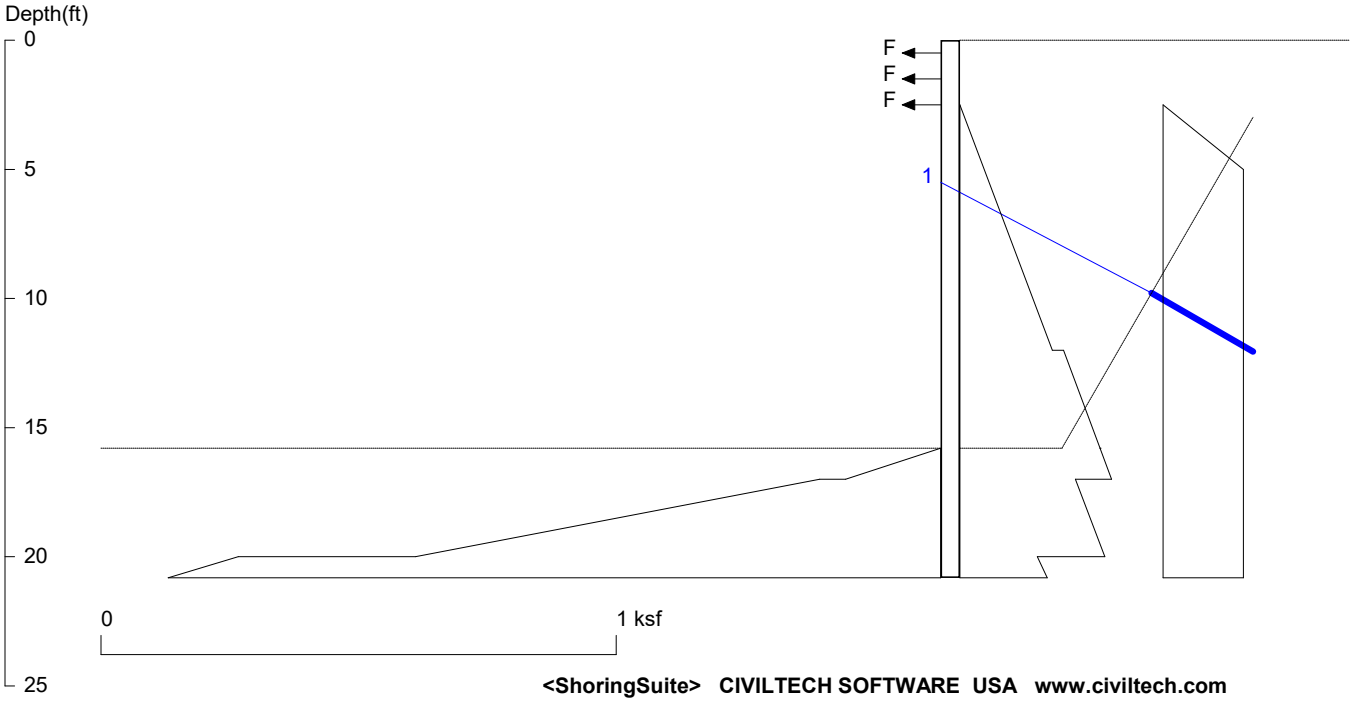

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Wall Height=15.8 Pile Diameter=1.0 Pile Spacing=1.0 Wall Type: 1. Sheet Pile

PILE LENGTH: Min. Embedment=5.01 Min. Pile Length=20.81
User inputted Embedment=11.70, Pile Length=27.50
MOMENT IN PILE: Max. Moment=7.89 per Pile Spacing=1.0 at Depth=12.95

SYSTEM FACTOR OF SAFETY (Approximate)=2.33
The request embedment is 5.0, the user input fixed embedment = 11.7.

PILE SELECTION:
Request Min. Section Modulus = 4.0 in3/ft=214.13 cm3/m, Fy= 36 ksi = 248 MPa, Fb/Fy=0.66
PZ27 has Section Modulus = 30.2 in3/ft=1623.55 cm3/m. It is greater than Min. Requirements!
Top Deflection = -0.06(in) based on E (ksi)=29000.00 and I (in4)/foot=184.2

BRACE FORCE: Strut, Tieback, Plate Anchor, Deadman, Sheet Pile as Anchor

No. & Type	Depth	Angle	Space	Total F.	Horiz. F.	Vert. F.	L_free	Fixed Length
1. Tieback	5.5	30.0	20.0	59.4	51.4	29.7	8.6	37.8

UNITS: Width,Diameter,Spacing,Length,Depth,and Height - ft; Force - kip; Bond Strength and Pressure - ksf

DRIVING PRESSURES (ACTIVE, WATER, & SURCHARGE):

Z1	P1	Z2	P2	Slope
*	Above	Base		
2.500	0.000	12.00	0.179	0.018866
12.00	0.201	15.80	0.272	0.018661
*	Below	Base		
15.80	0.272	17.00	0.294	0.018490
17.00	0.224	20.00	0.281	0.019008
20.00	0.150	45.00	0.740	0.023602
*	Water	Pres.		
2.500	0.000	5.000	0.156	0.062400

5.000	0.156	148.1	0.156	0.000000

PASSIVE PRESSURES:

Z1	P1	Z2	P2	Slope
*	Below	Base		
15.80	0.000	17.00	0.184	0.153643
17.00	0.235	20.00	1.019	0.261328
20.00	1.363	45.00	5.541	0.167104

ACTIVE SPACING:

No.	Z depth	Spacing
1	0.00	1.00
2	15.80	1.00

PASSIVE SPACING:

No.	Z depth	Spacing
1	0.00	1.00

EXTERNAL FORCE ACTING ON WALL (Pusing on Wall - Positive; Against Wall - Negative)

No.	Z force	Force	Angle	Spacing
1	0.50	0.03	0.0	1.00
2	1.50	0.03	0.0	1.00
3	2.50	0.03	0.0	1.00

UNITS: Width,Spacing,Diameter,Length,and Depth - ft; Force - kip; Moment - kip-ft
Friction,Bearing,and Pressure - ksf; Pres. Slope - kip/ft3; Deflection - in

****

SHORING WALL CALCULATION SUMMARY
The leading shoring design and calculation software

www.civiltech.com

****

ShoringSuite Software is developed by CivilTech Software, Bellevue, WA, USA.
The calculation method is based on the following references:

1. FHWA 98-011, FHWA-RD-97-130, FHWA SA 96-069, FHWA-IF-99-015
2. STEEL SHEET PILING DESIGN MANUAL by Pile Buck Inc., 1987
3. DESIGN MANUAL DM-7 (NAVFAC), Department of the Navy, May 1982
4. TRENCHING AND SHORING MANUAL Revision 12, California Department of Transportation, January 2000
6. EARTH SUPPORT SYSTEM & RETAINING STRUCTURES, Pile Buck Inc. 2002
5. DESIGN OF SHEET PILE WALLS, EM 1110-2-2504, U.S. Army Corps of Engineers, 31 March 1994
7. EARTH RETENTION SYSTEMS HANDBOOK, Alan Macnab, McGraw-Hill. 2002
8. Temporary Structures in Construction, Robert T. Ratay (Co-author of Chapter 7: John J. Peirce), McGraw-Hill. 2012
9. AASHTO HB-17, American Association of State and Highway Transportation Officials, 2 September 2002

UNITS: Width/Spacing/Diameter/Length/Depth - ft, Force - kip, Moment - kip-ft, Friction/Bearing/Pressure - ksf, Pres. Slope - kip/ft3, Deflection - in

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Title: Rochester-REDI_East Side
Subtitle: USCG Boat Slip

**********INPUT DATA**********

Wall Type: 1. Sheet Pile
Wall Height: 15.80
Pile Diameter: 1.00
Pile Spacing: 1.00
Factor of Safety (F.S.): 1.00
Lateral Support Type (Braces): 3. Tieback
Top Brace Increase (Multi-Bracing): Add 15%*
Brace Position (One Brace Case): Normal Brace*
No-Load Zone:
Vertical Depth for No-Load Zone: 15.80
H-Distance (Input H/V ratio) for No-Load Zone: 0.25
Angle from H. Line for No-Load Zone: 60.00
Embedment Option: 3. Fixed
Fixed Embedment: 11.70

Friction at Pile Tip: No

Pile Properties:

Steel Strength, Fy: 36 ksi = 248 MPa

Allowable Fb/Fy: 0.66

Elastic Module, E: 29000.00

Moment of Inertia, I: 184.20

User Input Pile: PZ27

* DRIVING PRESSURE (ACTIVE, WATER, & SURCHARGE) *

No.	Z1 top	Top Pres.	Z2 bottom	Bottom Pres.	Slope
1	*	Above	Base		
2	2.500	0.000	12.00	0.179	0.018866
3	12.00	0.201	15.80	0.272	0.018661
4	*	Below	Base		
5	15.80	0.272	17.00	0.294	0.018490
6	17.00	0.224	20.00	0.281	0.019008
7	20.00	0.150	45.00	0.740	0.023602
8	45.00	0.622	148.1	2.436	0.017590
9	*	Water	Pres.		
10	2.500	0.000	5.000	0.156	0.062400
11	5.000	0.156	148.1	0.156	0.000000

* PASSIVE PRESSURE *

No.	Z1 top	Top Pres.	Z2 bottom	Bottom Pres.	Slope
1	*	Below	Base		
2	15.80	0.000	17.00	0.184	0.153643
3	17.00	0.235	20.00	1.019	0.261328
4	20.00	1.363	45.00	5.541	0.167104
5	45.00	7.331	148.1	38.78	0.304970

* ACTIVE SPACE *

No.	Z depth	Spacing
1	0.00	1.00
2	15.80	1.00

* PASSIVE SPACE *

No.	Z depth	Spacing
1	0.00	1.00

* BRACE: STRUT, TIEBACK, ANCHOR PLATE, DEADMAN, OR SHEET PILE AS ANCHOR*

No.	Z brace	Angle	Spacing	Input1*	Input2* Type

```
-------------------------------------------------------------------------------
---------------------
 1      5.50            30.0            20.00           0.50            1.00
Tieback
-------------------------------------------------------------------------------
---------------------
*For Tieback:  Input1 = Diameter;  Input2 = Bond Strength
*For Plate:  Input1 = Diameter;  Input2 = Allowable Pressure
*For Deadman:  Input1 = Horz. Width;  Input2 = Passive Pressure;
*For Sheet Pile Anchor:  Input1 = Horz. Width;  Input2 = Passive Slope;

* EXTERNAL FORCE ACTING ON WALL *        (Pusing on Wall - Positive; Against Wall -
Negative)
 No.    Z force         Force           Angle           Spacing
-------------------------------------------------------------------------
 1      0.50            0.03            0.0             1.00
 2      1.50            0.03            0.0             1.00
 3      2.50            0.03            0.0             1.00
-------------------------------------------------------------------------


*********************************CALCULATION*********************************

   The calculated moment and shear are per pile spacing.  Sheet piles are per one
foot or meter; Soldier piles are per pile.

   Top Pressures start at depth =  0.00


*  CALCULATE REQUEST EMBEDMENT  *
     The Request Embedment, Yend = 5.01
     The user input fixed embedment = 11.7

---------------------------ONE BRACING / TIEBACK CASE----------------------
** The Approximate Factor of Safety based on fixed embedment, FS = 2.33
   The user input fixed embedment is 11.7, which is deeper than calculated
embedment. Use calculated embedment = 5.0 for graphics and analysis.

   NUMBER OF BRACE LEVEL = 1


        |      D1=0.00
        |
        |<--   D2=5.50         R1=2.57
        |
        |
        |
      ==|==    D3=15.80
        |
        |      D4=20.81
```

D1 - TOP DEPTH
D2 - BRACE DEPTH R1 - REACTION
D3 - EXCAVATION BASE
D4 - PILE TIP

TOTAL REACTION: R1 = 2.57
TOTAL PRESSURES ACTING ON WALL = 2.57
Total Reactions = Total Pressures, OK!

BRACE NO.1 AT DEPTH = 5.50
R1 = Brace Load = 2.57

**********RESULTS**********

* EMBEDMENT *
MINIMUM EMBEDMENT = 5.01, TOTAL MINIMUM PILE LENGTH = 20.81
User inputted Embedment=11.70, Pile Length=27.50

* MOMENT IN PILE (per pile spacing)*
Pile Spacing: sheet piles are one foot or one meter; soldier piles are one pile.

No.	Depth	M @ Brace	Mmax in Span	Depth of Mmax
1	5.50	0.71	7.89	12.95

Overall Maximum Moment = 7.89 at 12.95
Maximum Shear = 2.12
Moment and Shear are per pile spacing: 1.0 foot or meter

* BRACE: STRUT, TIEBACK, ANCHOR PLATE, DEADMAN, OR SHEET PILE AS ANCHOR*
The calculated brace force are per brace spacing.

No.	DEPTH	Tangle	SPACING	HORIZONTAL	VERTICAL	TOTAL LOAD
1	5.50	30.0	20.00	51.43	29.69	59.39

No.	DEPTH	Free length	Brace Type
1	5.50	8.57	Tieback, Bond length = 37.81

* VERTICAL LOADING *
Vertical Loading from Braces = 1.48

Vertical Loading from External Load = 0.00
Total Vertical Loading = 1.48

**********SPECIFIED PILE **********

Overall Maximum Moment = 7.89 at 12.95
The pile selection is based on the magnitude of the moment only. Axial force is neglected.

Request Min. Section Modulus = 3.98 in3/ft = 214.13 cm3/m, Fy= 36 ksi = 248 MPa, Fb/Fy=0.66

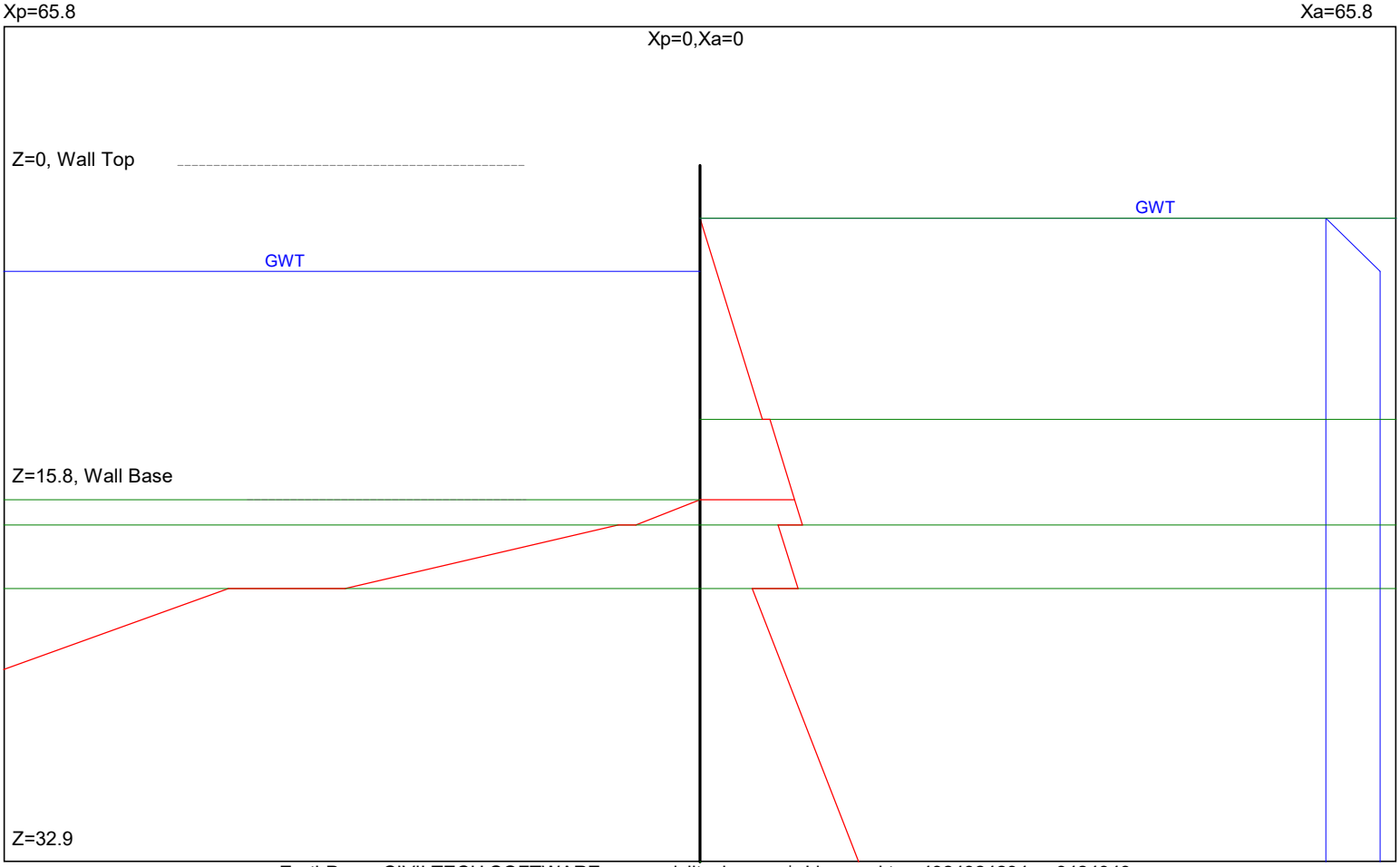
PZ27 has been found in Sheet Pile list!
PZ27(English): Sx= 30.20 in3/ft Ix= 184.20 in4/ft Weight= 27.00 lb/ft
PZ27(Metrics): Sx= 1623.55 cm3/m Ix= 251.54 x100cm4/m Weight= 0.394 kN/m

* Note: All the pile dimensions are in English Units per one foot width.

PZ27 is capable to support the shoring!
I (in4)/foot=184.20
Top deflection = -0.061(in)
Max. deflection = 0.061(in)

Rochester-REDI_East Side
USCG Boat Slip

EXISTING



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UNITS: DEPTH/DISTANCE: ft, UNIT WEIGHT: pcf, FORCE: kip/ft, PRESSURE: ksf, SLOPE: kcf

Date: 1/26/2021 File: C:\Users\natalemf\OneDrive - Ramboll\desktop\Projects\Rochester Redi\Sheet Pile Analysis\East Side_USCG Boat Slip.ep8

* INPUT DATA *

Wall Height=15.8 Total Soil Types= 5

Soil No.	Weight	Saturate	Phi	Cohesion	Nspt	Type	Description
1	112.3	123.5	31.88	0.0	8	4	Sand
2	105.2	115.7	29.00	0.0	4	4	Sand
3	119.7	131.7	35.34	0.0	16	4	Sand
4	113.7	125.0	26.96	0.2	4	3	Silt
5	122.8	135.0	37.71	0.0	28	4	Sand

Ground Surface at Active Side:

Line	Z1	Xa1	Z2	Xa2	Soil No.	Description
1	2.5	0.0	2.5	800.0	1	Sand
2	12.0	0.0	12.0	800.0	2	Sand
3	17.0	0.0	17.0	800.0	3	Sand
4	20.0	0.0	20.0	800.0	4	Silt
5	45.0	0.0	45.0	800.0	5	Sand

Water Table at Active Side:

Point	Z-water	X-water
1	2.5	0.0
2	2.5	800.0

Ground Surface at Passive Side:

Line	Z1	Xp1	Z2	Xp2	Soil No.	Description
1	15.8	0.0	15.8	800.0	2	Sand

2	17.0	0.0	17.0	800.0	3	Sand
3	20.0	0.0	20.0	800.0	4	Silt
4	45.0	0.0	45.0	800.0	5	Sand

Water Table at Passive Side:

Point	Z-water	X-water
1	5.0	0.0
2	5.0	800.0

Wall Friction Options: 1.* No wall friction
Wall Batter Angle = 0
Apparent Pressure Conversion: 1.* Default (Terzaghi and Peck)*
Water Density = 62.4
Water Pressure: 1.* No seepage at wall tip

* OUTPUT RESULTS *

Total Force above Base= 1.75 per one linear foot (or meter) width along wall height
Total Static Force above Base= 1.75

Driving Pressure above Base - Output to Shoring - Multiplier of Pressure = 1

Z1	Pa1	Z2	Pa2	Slope	Coef.
2.50	0.00	12.00	0.18	0.0189	0.3088
12.00	0.20	15.80	0.27	0.0187	0.3501

Driving Pressure below Base - Output to Shoring - Multiplier of Pressure = 1

Z1	Pa1	Z2	Pa2	Slope	Ka or Ko
15.80	0.27	17.00	0.29	0.0185	0.3469
17.00	0.22	20.00	0.28	0.0190	0.2743
20.00	0.15	32.92	0.46	0.0237	0.3785

Passive Pressure below Base - Output to Shoring - Multiplier of Pressure = 1

Z1	Pp1	Z2	Pp2	Slope	Kp
15.80	0.00	17.00	0.18	0.154	2.8826
17.00	0.24	20.00	1.02	0.261	3.7710
20.00	1.35	32.92	3.53	0.169	2.6927

Water Pressure - Output to Shoring - Multiplier of Pressure = 1

No	Z1	Pw1	Z2	Pw2	kw1
0	2.50	0.00	5.00	0.16	0.06
1	5.00	0.16	32.92	0.16	0.00

UNITS: DEPTH/DISTANCE: ft, UNIT WEIGHT: pcf, FORCE: kip/ft, PRESSURE: ksf, SLOPE: kcf

Date: 1/26/2021 File Name: C:\Users\natalemf\OneDrive - Ramboll\desktop\Projects\Rochester Redi\Sheet Pile Analysis\East Side_USCG Boat Slip.e

```
************************************************************
                EARTH PRESSURE ANALYSIS SUMMARY
                        <EarthPres>
           Software Copyright by CivilTech Software
                      www.civiltech.com

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Slip.ep8

Title 1: Rochester-REDI_East Side
Title 2: USCG Boat Slip

Input data: ************************************************

Wall Height = 15.80
Depth of Ground at Active Side = 2.50
Depth of Ground at Passive Side = 15.80
Apparent Pressure Envelope: 1.* Actual Pressures   (All walls, All soils)
Pressure Type: 1.* Active, Ka
Earthquake Loading Apply to: 1. No Earthq. Loads
        Earthquake Horizontal Acceleration, Kh = 0
        Earthquake Vertical Acceleration, Kv = 0
Calculation Methods: 1.* Numerical Solution (Wedge Analysis)
Wall Friction Options: 1.* No wall friction
        Wall Batter Angle = 0
Apparent Pressure Conversion: 1.* Default (Terzaghi and Peck)*
Water Density = 62.4
Water Pressure: 1.* No seepage at wall tip
User's Settings
        Ignore Passive from Depth = 0
        Multiplier of Active Pressure = 1
        Multiplier of Passive Pressure = 1
        Multiplier of Water Pressure = 1
        Multiplier of Earthq. Pressure = 1
        Estimated Embedment: Very Shallow: 2H
Program's Settings
        Max. Height, Hmax = 164.60
        Analysis Segment, dz = 0.39
        No. of Active Segment at H, nz0 = 2
        No. of Active Segment at Hmax, nz = 6
        No. of Passive Segment, nzp = 4
        Active Depth at H, Zh = 15.80
        Active Depth at Hmax, Z = 164.60
        Passive Depth at Hmax, Zp = 164.60
        Max. Pressure = 43.89
```

Total Soil Types= 5

Soil	Weight	W(S)	Phi	Cohesion	Nspt	Type	Description
1	112.3	123.5	31.88	0.0	8	4	Sand
2	105.2	115.7	29.00	0.0	4	4	Sand
3	119.7	131.7	35.34	0.0	16	4	Sand
4	113.7	125.0	26.96	0.2	4	3	Silt
5	122.8	135.0	37.71	0.0	28	4	Sand

Soil Type: 1 Equivalent Clay; 2 Clay; 3 Silt; 4 Sand; 5 Gravel

Ground Surface at Active Side:

Line	Z1	Xa1	Z2	Xa2	Soil No.
1	2.5	0.0	2.5	800.0	1
2	12.0	0.0	12.0	800.0	2
3	17.0	0.0	17.0	800.0	3
4	20.0	0.0	20.0	800.0	4
5	45.0	0.0	45.0	800.0	5

Water Table at Active Side:

Point	Z-water	X-water
1	2.5	0.0
2	2.5	800.0

Ground Surface at Passive Side:

Line	Z1	Xp1	Z2	Xp2	Soil No.
1	15.8	0.0	15.8	800.0	2
2	17.0	0.0	17.0	800.0	3
3	20.0	0.0	20.0	800.0	4
4	45.0	0.0	45.0	800.0	5

Water Table at Passive Side:

Point	Z-water	X-water
1	5.0	0.0
2	5.0	800.0

Output data: **********

Total Force above Base= 1.75 per one linear foot (or meter) width along wall height
Static Force above Base= 1.75

Apparent Pressure above Base - Output to Shoring
Active/At-Rest Force above Base, Ea = 1.75

No	Z1	P1	Z2	P2	Slope	Coef.
0	2.5	0.00	12.0	0.18	0.0189	0.3088
1	12.0	0.20	15.8	0.27	0.0187	0.3501

Driving Pressure below Base - Output to Shoring

No	Z1	P1	Z2	P2	Slope	Ka or Ko
0	15.8	0.27	17.0	0.29	0.0185	0.3469

1	17.0	0.22	20.0	0.28	0.0190	0.2743
2	20.0	0.15	45.0	0.74	0.0236	0.3770
3	45.0	0.62	164.6	2.72	0.0176	0.2419

Passive Pressure below Base - Output to Shoring

No	Z1	P1	Z2	P2	Slope	Kp
0	15.8	0.00	17.0	0.18	0.1536	2.8826
1	17.0	0.24	20.0	1.02	0.2613	3.7710
2	20.0	1.36	45.0	5.54	0.1671	2.6694
3	45.0	7.36	164.6	43.74	0.3041	4.1892

Water Pressure - Output to Shoring

No	Z1	P1	Z2	P2	Slope
0	2.5	0.00	5.0	0.16	0.06
1	5.0	0.16	164.6	0.16	0.00

****
DEPTH/DISTANCE: ft, UNIT WEIGHT: pcf, FORCE: kip/ft, PRESSURE: ksf, SLOPE: kcf

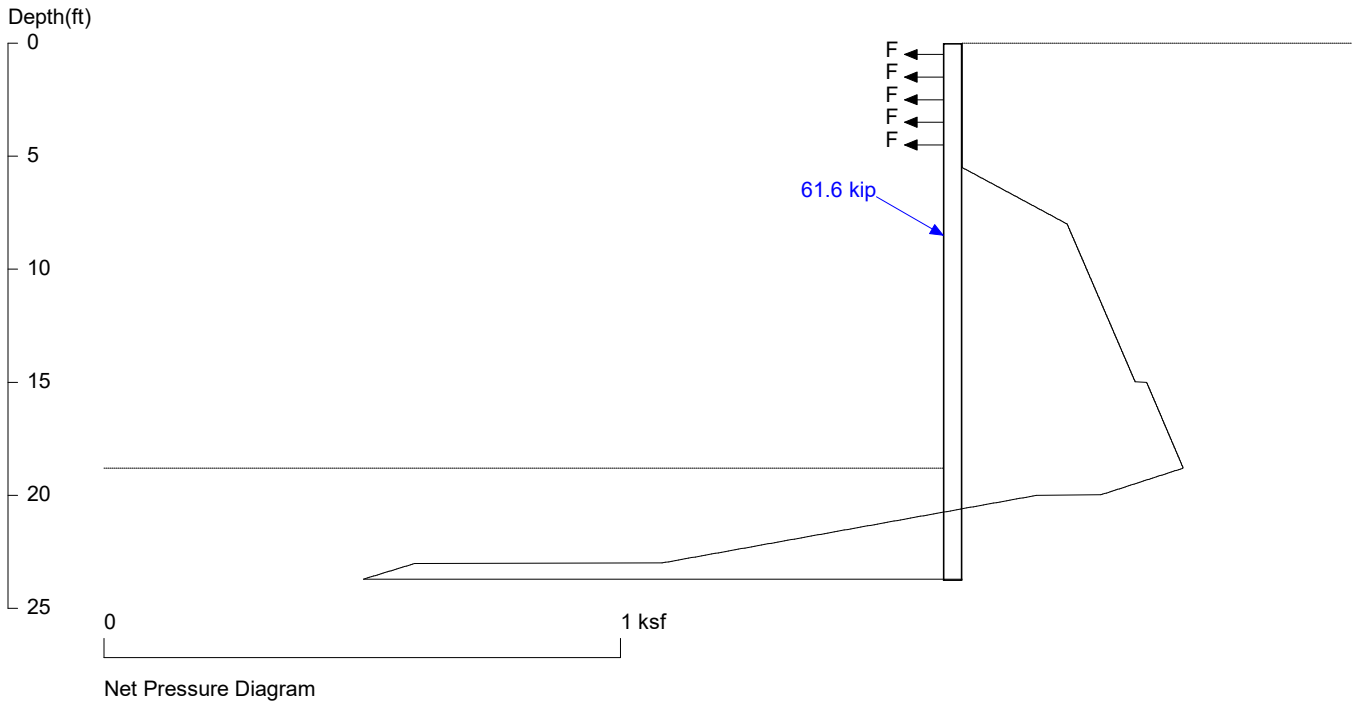
Z, Xa, Xp - Coordinates of ground lines
Z- Depth measured from wall top
Xa - Distance measure from wall to active side.
Xp - Distance measure from wall to passive side

Z1, P1, Z2, P2 - Four values to define a pressure diagram
Z1- Top depth of the diagram
P1- Top pressure of the diagram
Z2- Bottom depth of the diagram
P2- Bottom pressure of the diagram
Slope - (P2-P1)/(Z2-Z1), Slope of the diagram. It also called
    Equivalent fluid density.
Coef. - Pressure Coefficient = Slope/Unit We9ight
Ka - Active Earth Pressure Coefficient
Ko - At-Rest Earth Pressure Coefficient
Kp - Passive Earth Pressure Coefficient

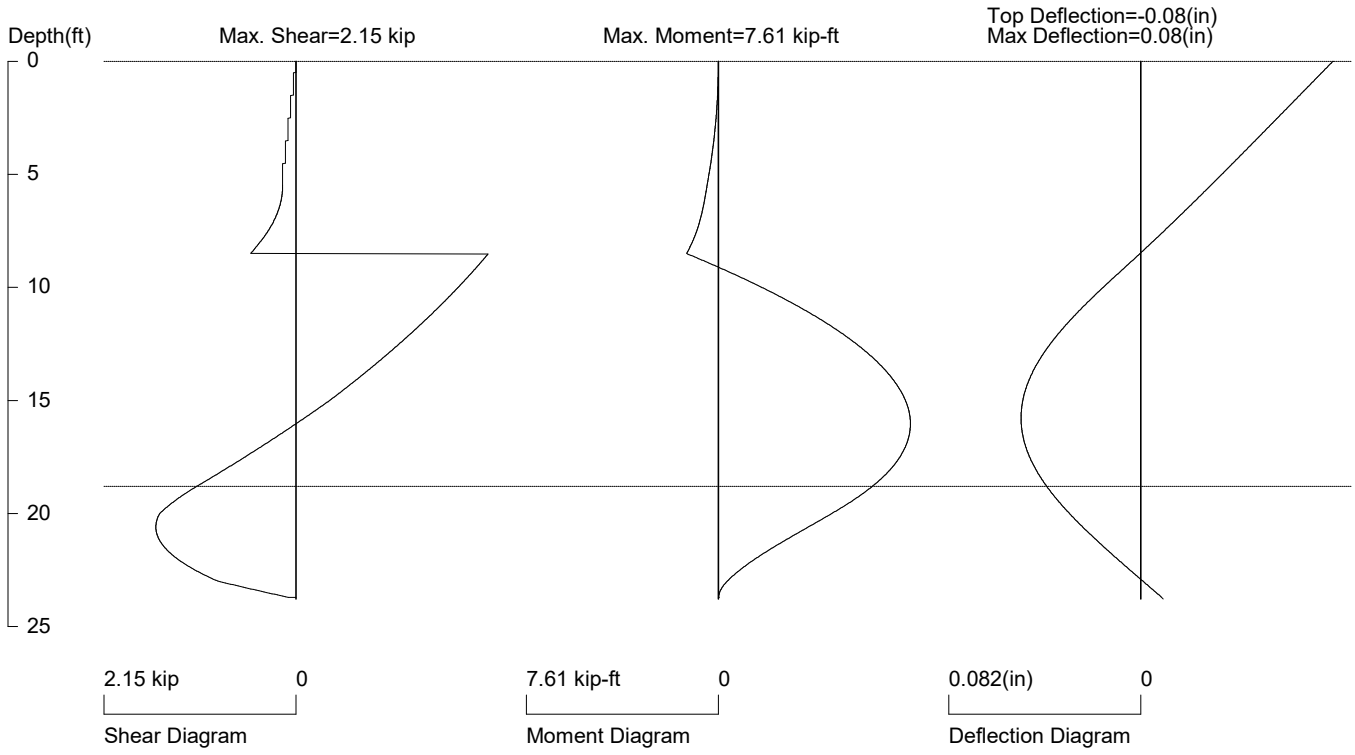
Rochester-REDI_East Side

PROPOSED

USCG Boat Slip



Net Pressure Diagram



Shear Diagram | Moment Diagram | Deflection Diagram

PRESSURE, SHEAR, MOMENT, AND DEFLECTION DIAGRAMS

Based on pile spacing: 1.0 foot or meter

User Input Pile, PZ27: E (ksi)=29000.0, I (in4)/foot=184.2

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Rochester-REDI_East Side
USCG Boat Slip

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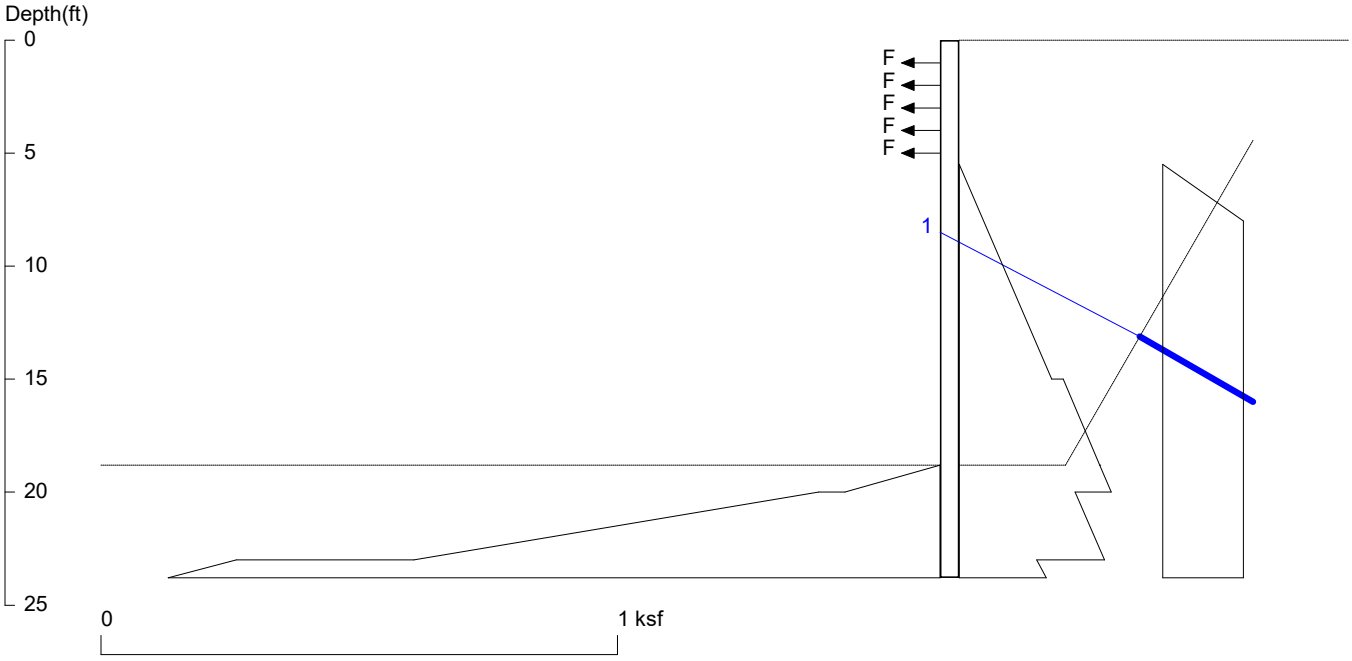

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Wall Height=18.8 Pile Diameter=1.0 Pile Spacing=1.0 Wall Type: 1. Sheet Pile

PILE LENGTH: Min. Embedment=4.99 (5~10ft is recommended!!!) Min. Pile Length=23.79
User inputted Embedment=11.70, Pile Length=30.50
MOMENT IN PILE: Max. Moment=7.65 per Pile Spacing=1.0 at Depth=16.01

SYSTEM FACTOR OF SAFETY (Approximate)=2.35
The request embedment is 5.0, the user input fixed embedment = 11.7.

PILE SELECTION:
Request Min. Section Modulus = 3.9 in3/ft=207.67 cm3/m, Fy= 36 ksi = 248 MPa, Fb/Fy=0.66
PZ27 has Section Modulus = 30.2 in3/ft=1623.55 cm3/m. It is greater than Min. Requirements!
Top Deflection = -0.08(in) based on E (ksi)=29000.00 and I (in4)/foot=184.2

BRACE FORCE: Strut, Tieback, Plate Anchor, Deadman, Sheet Pile as Anchor

No. & Type	Depth	Angle	Space	Total F.	Horiz. F.	Vert. F.	L_free	Fixed Length
1. Tieback	8.5	30.0	20.0	61.5	53.2	30.7	9.2	39.1

UNITS: Width,Diameter,Spacing,Length,Depth,and Height - ft; Force - kip; Bond Strength and Pressure - ksf

DRIVING PRESSURES (ACTIVE, WATER, & SURCHARGE):

Z1	P1	Z2	P2	Slope
*	Above	Base		
5.500	0.000	15.000	0.179	0.018866
15.000	0.201	18.800	0.272	0.018661
*	Below	Base		
18.800	0.272	20.000	0.294	0.018490
20.000	0.224	23.000	0.281	0.019008
23.000	0.150	48.000	0.740	0.023602
*	Water	Pres.		
5.500	0.000	8.000	0.156	0.062400

8.000	0.156	157.760	0.156	0.000000

PASSIVE PRESSURES:

Z1	P1	Z2	P2	Slope
*	Below	Base		
18.800	0.000	20.000	0.184	0.153643
20.000	0.235	23.000	1.019	0.261328
23.000	1.363	48.000	5.541	0.167104

ACTIVE SPACING:

No.	Z depth	Spacing
1	0.00	1.00
2	18.80	1.00

PASSIVE SPACING:

No.	Z depth	Spacing
1	0.00	1.00

EXTERNAL FORCE ACTING ON WALL (Pusing on Wall - Positive; Against Wall - Negative)

No.	Z force	Force	Angle	Spacing
1	1.00	0.03	0.0	1.00
2	2.00	0.03	0.0	1.00
3	3.00	0.03	0.0	1.00
4	4.00	0.03	0.0	1.00
5	5.00	0.03	0.0	1.00

UNITS: Width,Spacing,Diameter,Length,and Depth - ft; Force - kip; Moment - kip-ft
Friction,Bearing,and Pressure - ksf; Pres. Slope - kip/ft3; Deflection - in

****

SHORING WALL CALCULATION SUMMARY
The leading shoring design and calculation software

www.civiltech.com

****
ShoringSuite Software is developed by CivilTech Software, Bellevue, WA, USA.
The calculation method is based on the following references:
1. FHWA 98-011, FHWA-RD-97-130, FHWA SA 96-069, FHWA-IF-99-015
2. STEEL SHEET PILING DESIGN MANUAL by Pile Buck Inc., 1987
3. DESIGN MANUAL DM-7 (NAVFAC), Department of the Navy, May 1982
4. TRENCHING AND SHORING MANUAL Revision 12, California Department of Transportation, January 2000
6. EARTH SUPPORT SYSTEM & RETAINING STRUCTURES, Pile Buck Inc. 2002
5. DESIGN OF SHEET PILE WALLS, EM 1110-2-2504, U.S. Army Corps of Engineers, 31 March 1994
7. EARTH RETENTION SYSTEMS HANDBOOK, Alan Macnab, McGraw-Hill. 2002
8. Temporary Structures in Construction, Robert T. Ratay (Co-author of Chapter 7: John J. Peirce), McGraw-Hill. 2012
9. AASHTO HB-17, American Association of State and Highway Transportation Officials, 2 September 2002

UNITS: Width/Spacing/Diameter/Length/Depth - ft, Force - kip, Moment - kip-ft, Friction/Bearing/Pressure - ksf, Pres. Slope - kip/ft3, Deflection - in
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Title: Rochester-REDI_East Side
Subtitle: USCG Boat Slip

**********INPUT DATA**********
Wall Type: 1. Sheet Pile
Wall Height: 18.80
Pile Diameter: 1.00
Pile Spacing: 1.00
Factor of Safety (F.S.): 1.00
Lateral Support Type (Braces): 3. Tieback
Top Brace Increase (Multi-Bracing): Add 15%*
Brace Position (One Brace Case): Normal Brace*
No-Load Zone:
Vertical Depth for No-Load Zone: 18.80
H-Distance (Input H/V ratio) for No-Load Zone: 0.25
Angle from H. Line for No-Load Zone: 60.00
Embedment Option: 3. Fixed
Fixed Embedment: 11.70

Friction at Pile Tip: No
Pile Properties:
Steel Strength, Fy: 36 ksi = 248 MPa
Allowable Fb/Fy: 0.66
Elastic Module, E: 29000.00
Moment of Inertia, I: 184.20
User Input Pile: PZ27

* DRIVING PRESSURE (ACTIVE, WATER, & SURCHARGE) *

No.	Z1 top	Top Pres.	Z2 bottom	Bottom Pres.	Slope
1	*	Above	Base		
2	5.500	0.000	15.000	0.179	0.018866
3	15.000	0.201	18.800	0.272	0.018661
4	*	Below	Base		
5	18.800	0.272	20.000	0.294	0.018490
6	20.000	0.224	23.000	0.281	0.019008
7	23.000	0.150	48.000	0.740	0.023602
8	48.000	0.623	157.760	2.552	0.017577
9	*	Water	Pres.		
10	5.500	0.000	8.000	0.156	0.062400
11	8.000	0.156	157.760	0.156	0.000000

* PASSIVE PRESSURE *

No.	Z1 top	Top Pres.	Z2 bottom	Bottom Pres.	Slope
1	*	Below	Base		
2	18.800	0.000	20.000	0.184	0.153643
3	20.000	0.235	23.000	1.019	0.261328
4	23.000	1.363	48.000	5.541	0.167104
5	48.000	7.345	157.760	40.778	0.304599

* ACTIVE SPACE *

No.	Z depth	Spacing
1	0.00	1.00
2	18.80	1.00

* PASSIVE SPACE *

No.	Z depth	Spacing
1	0.00	1.00

* BRACE: STRUT, TIEBACK, ANCHOR PLATE, DEADMAN, OR SHEET PILE AS ANCHOR*

No.	Z brace	Angle	Spacing	Input1*	Input2* Type

```
-------------------------------------------------------------------------------
---------------------
 1      8.50            30.0            20.00           0.50            1.00
Tieback
-------------------------------------------------------------------------------
---------------------
*For Tieback:  Input1 = Diameter;  Input2 = Bond Strength
*For Plate:  Input1 = Diameter;  Input2 = Allowable Pressure
*For Deadman:  Input1 = Horz. Width;  Input2 = Passive Pressure;
*For Sheet Pile Anchor:  Input1 = Horz. Width;  Input2 = Passive Slope;

* EXTERNAL FORCE ACTING ON WALL *        (Pusing on Wall - Positive; Against Wall -
Negative)
 No.    Z force         Force           Angle           Spacing
-------------------------------------------------------------------------
 1      0.50            0.03            0.0             1.00
 2      1.50            0.03            0.0             1.00
 3      2.50            0.03            0.0             1.00
 4      3.50            0.03            0.0             1.00
 5      4.50            0.03            0.0             1.00
-------------------------------------------------------------------------


*********************************CALCULATION*********************************

   The calculated moment and shear are per pile spacing.  Sheet piles are per one
foot or meter; Soldier piles are per pile.

   Top Pressures start at depth =  0.00


*  CALCULATE REQUEST EMBEDMENT  *
     The Request Embedment, Yend = 4.98
     The user input fixed embedment = 11.7

---------------------------ONE BRACING / TIEBACK CASE----------------------
** The Approximate Factor of Safety based on fixed embedment, FS = 2.35
   The user input fixed embedment is 11.7, which is deeper than calculated
embedment. Use calculated embedment = 5.0 for graphics and analysis.

   NUMBER OF BRACE LEVEL = 1


        |      D1=0.00
        |
        |<--   D2=8.50         R1=2.67
        |
        |
        |
      ==|==    D3=18.80
```

```
        |
        |      D4=23.78

        D1 - TOP DEPTH
        D2 - BRACE DEPTH        R1 - REACTION
        D3 - EXCAVATION BASE
        D4 - PILE TIP

   TOTAL REACTION: R1 = 2.67
   TOTAL PRESSURES ACTING ON WALL = 2.67
      Total Reactions = Total Pressures,    OK!
   ____________________________________________________
   BRACE NO.1 AT DEPTH = 8.50
       R1 = Brace Load = 2.67
   ____________________________________________________


**********RESULTS**********

* EMBEDMENT *
MINIMUM EMBEDMENT = 4.98 (5~10ft recommended!!!),  TOTAL MINIMUM PILE LENGTH = 23.78
User inputted Embedment=11.70,  Pile Length=30.50

* MOMENT IN PILE (per pile spacing)*
Pile Spacing:  sheet piles are one foot or one meter; soldier piles are one pile.
 No.    Depth           M @ Brace       Mmax in Span    Depth of Mmax
--------------------------------------------------------------------------
 1      8.50            1.25            7.61            16.04
--------------------------------------------------------------------------
Overall Maximum Moment = 7.61 at 16.04
Maximum Shear = 2.15
Moment and Shear are per pile spacing: 1.0 foot or meter

* BRACE: STRUT, TIEBACK, ANCHOR PLATE, DEADMAN, OR SHEET PILE AS ANCHOR*
The calculated brace force are per brace spacing.

 No.    DEPTH           Tangle          SPACING         HORIZONTAL      VERTICAL
TOTAL LOAD
--------------------------------------------------------------------------------
----------
 1      8.50            30.0            20.00           53.34           30.79
61.59

 No.    DEPTH           Free length     Brace Type
--------------------------------------------------------------------------------
----------
 1      8.50            9.22            Tieback, Bond length = 39.21
--------------------------------------------------------------------------------
----------
```

* VERTICAL LOADING *
Vertical Loading from Braces = 1.54
Vertical Loading from External Load = 0.00
Total Vertical Loading = 1.54

**********SPECIFIED PILE **********

Overall Maximum Moment = 7.61 at 16.04
The pile selection is based on the magnitude of the moment only. Axial force is neglected.

Request Min. Section Modulus = 3.84 in3/ft = 206.64 cm3/m, Fy= 36 ksi = 248 MPa, Fb/Fy=0.66

PZ27 has been found in Sheet Pile list!
PZ27(English): Sx= 30.20 in3/ft Ix= 184.20 in4/ft Weight= 27.00 lb/ft
PZ27(Metrics): Sx= 1623.55 cm3/m Ix= 251.54 x100cm4/m Weight= 0.394 kN/m

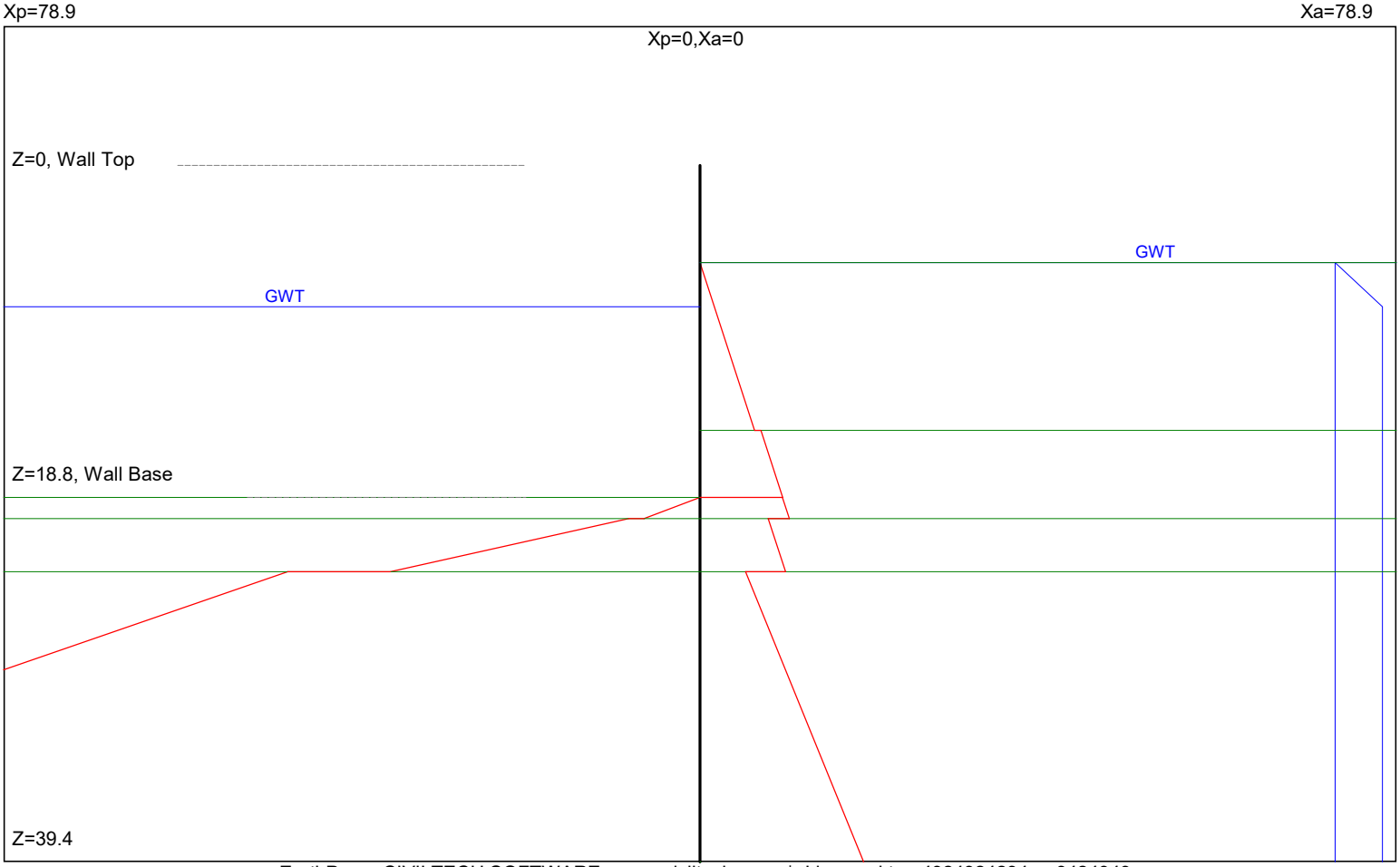
* Note: All the pile dimensions are in English Units per one foot width.

PZ27 is capable to support the shoring!
I (in4)/foot=184.20
Top deflection = -0.082(in)
Max. deflection = 0.082(in)

Rochester-REDI_East Side

USCG Boat Slip

PROPOSED



UNITS: DEPTH/DISTANCE: ft, UNIT WEIGHT: pcf, FORCE: kip/ft, PRESSURE: ksf, SLOPE: kcf

Date: 1/26/2021 File: C:\Users\natalemf\OneDrive - Ramboll\desktop\Projects\Rochester Redi\Sheet Pile Analysis\East Side_USCG Boat Slip_proposed.ep8

* INPUT DATA *

Wall Height=18.8 Total Soil Types= 5

Soil No.	Weight	Saturate	Phi	Cohesion	Nspt	Type	Description
1	112.3	123.5	31.88	0.0	8	4	Sand
2	105.2	115.7	29.00	0.0	4	4	Sand
3	119.7	131.7	35.34	0.0	16	4	Sand
4	113.7	125.0	26.96	0.2	4	3	Silt
5	122.8	135.0	37.71	0.0	28	4	Sand

Ground Surface at Active Side:

Line	Z1	Xa1	Z2	Xa2	Soil No.	Description
1	5.5	0.0	5.5	800.0	1	Sand
2	15.0	0.0	15.0	800.0	2	Sand
3	20.0	0.0	20.0	800.0	3	Sand
4	23.0	0.0	23.0	800.0	4	Silt
5	48.0	0.0	48.0	800.0	5	Sand

Water Table at Active Side:

Point	Z-water	X-water
1	5.5	0.0
2	5.5	800.0

Ground Surface at Passive Side:

Line	Z1	Xp1	Z2	Xp2	Soil No.	Description
1	18.8	0.0	18.8	800.0	2	Sand

2	20.0	0.0	20.0	800.0	3	Sand
3	23.0	0.0	23.0	800.0	4	Silt
4	48.0	0.0	48.0	800.0	5	Sand

Water Table at Passive Side:

Point	Z-water	X-water
1	8.0	0.0
2	8.0	800.0

Wall Friction Options: 1.* No wall friction
Wall Batter Angle = 0
Apparent Pressure Conversion: 1.* Default (Terzaghi and Peck)*
Water Density = 62.4
Water Pressure: 1.* No seepage at wall tip

* OUTPUT RESULTS *

Total Force above Base= 1.75 per one linear foot (or meter) width along wall height
Total Static Force above Base= 1.75

Driving Pressure above Base - Output to Shoring - Multiplier of Pressure = 1

Z1	Pa1	Z2	Pa2	Slope	Coef.
5.50	0.00	15.00	0.18	0.0189	0.3088
15.00	0.20	18.80	0.27	0.0187	0.3501

Driving Pressure below Base - Output to Shoring - Multiplier of Pressure = 1

Z1	Pa1	Z2	Pa2	Slope	Ka or Ko
18.80	0.27	20.00	0.29	0.0185	0.3469
20.00	0.22	23.00	0.28	0.0190	0.2743
23.00	0.15	39.44	0.54	0.0237	0.3783

Passive Pressure below Base - Output to Shoring - Multiplier of Pressure = 1

Z1	Pp1	Z2	Pp2	Slope	Kp
18.80	0.00	20.00	0.18	0.154	2.8826
20.00	0.24	23.00	1.02	0.261	3.7710
23.00	1.36	39.44	4.12	0.168	2.6811

Water Pressure - Output to Shoring - Multiplier of Pressure = 1

No	Z1	Pw1	Z2	Pw2	kw1
0	5.50	0.00	8.00	0.16	0.06
1	8.00	0.16	39.44	0.16	0.00

UNITS: DEPTH/DISTANCE: ft, UNIT WEIGHT: pcf, FORCE: kip/ft, PRESSURE: ksf, SLOPE: kcf

Date: 1/26/2021 File Name: C:\Users\natalemf\OneDrive - Ramboll\desktop\Projects\Rochester Redi\Sheet Pile Analysis\East Side_USCG Boat Slip_

PROPOSED

```
************************************************************
                EARTH PRESSURE ANALYSIS SUMMARY
                        <EarthPres>
           Software Copyright by CivilTech Software
                      www.civiltech.com

************************************************************
Licensed to   4324324234     3424343
Date: 1/26/2021          File: C:\Users\natalemf\OneDrive -
Ramboll\desktop\Projects\Rochester Redi\Sheet Pile Analysis\East Side_USCG Boat
Slip_proposed.ep8

Title 1: Rochester-REDI_East Side
Title 2: USCG Boat Slip

Input data: ***********************************************

Wall Height = 18.80
Depth of Ground at Active Side = 5.50
Depth of Ground at Passive Side = 18.80
Apparent Pressure Envelope: 1.* Actual Pressures   (All walls, All soils)
Pressure Type: 1.* Active, Ka
Earthquake Loading Apply to: 1. No Earthq. Loads
        Earthquake Horizontal Acceleration, Kh = 0
        Earthquake Vertical Acceleration, Kv = 0
Calculation Methods: 1.* Numerical Solution (Wedge Analysis)
Wall Friction Options: 1.* No wall friction
        Wall Batter Angle = 0
Apparent Pressure Conversion: 1.* Default (Terzaghi and Peck)*
Water Density = 62.4
Water Pressure: 1.* No seepage at wall tip
User's Settings
        Ignore Passive from Depth = 0
        Multiplier of Active Pressure = 1
        Multiplier of Passive Pressure = 1
        Multiplier of Water Pressure = 1
        Multiplier of Earthq. Pressure = 1
        Estimated Embedment: Very Shallow: 2H
Program's Settings
        Max. Height, Hmax = 197.20
        Analysis Segment, dz = 0.48
        No. of Active Segment at H, nz0 = 2
        No. of Active Segment at Hmax, nz = 6
        No. of Passive Segment, nzp = 4
        Active Depth at H, Zh = 18.80
        Active Depth at Hmax, Z = 197.20
        Passive Depth at Hmax, Zp = 197.20
        Max. Pressure = 52.80
```

Total Soil Types= 5

Soil	Weight	W(S)	Phi	Cohesion	Nspt	Type	Description
1	112.3	123.5	31.88	0.0	8	4	Sand
2	105.2	115.7	29.00	0.0	4	4	Sand
3	119.7	131.7	35.34	0.0	16	4	Sand
4	113.7	125.0	26.96	0.2	4	3	Silt
5	122.8	135.0	37.71	0.0	28	4	Sand

Soil Type: 1 Equivalent Clay; 2 Clay; 3 Silt; 4 Sand; 5 Gravel

Ground Surface at Active Side:

Line	Z1	Xa1	Z2	Xa2	Soil No.
1	5.5	0.0	5.5	800.0	1
2	15.0	0.0	15.0	800.0	2
3	20.0	0.0	20.0	800.0	3
4	23.0	0.0	23.0	800.0	4
5	48.0	0.0	48.0	800.0	5

Water Table at Active Side:

Point	Z-water	X-water
1	5.5	0.0
2	5.5	800.0

Ground Surface at Passive Side:

Line	Z1	Xp1	Z2	Xp2	Soil No.
1	18.8	0.0	18.8	800.0	2
2	20.0	0.0	20.0	800.0	3
3	23.0	0.0	23.0	800.0	4
4	48.0	0.0	48.0	800.0	5

Water Table at Passive Side:

Point	Z-water	X-water
1	8.0	0.0
2	8.0	800.0

Output data: **********

Total Force above Base= 1.75 per one linear foot (or meter) width along wall height
Static Force above Base= 1.75

Apparent Pressure above Base - Output to Shoring
Active/At-Rest Force above Base, Ea = 1.75

No	Z1	P1	Z2	P2	Slope	Coef.
0	5.5	0.00	15.0	0.18	0.0189	0.3088
1	15.0	0.20	18.8	0.27	0.0187	0.3501

Driving Pressure below Base - Output to Shoring

No	Z1	P1	Z2	P2	Slope	Ka or Ko
0	18.8	0.27	20.0	0.29	0.0185	0.3469

1	20.0	0.22	23.0	0.28	0.0190	0.2743
2	23.0	0.15	48.0	0.74	0.0236	0.3770
3	48.0	0.62	197.2	3.24	0.0175	0.2417

Passive Pressure below Base - Output to Shoring

No	Z1	P1	Z2	P2	Slope	Kp
0	18.8	0.00	20.0	0.18	0.1536	2.8826
1	20.0	0.24	23.0	1.02	0.2613	3.7710
2	23.0	1.36	48.0	5.54	0.1671	2.6694
3	48.0	7.41	197.2	52.64	0.3032	4.1758

Water Pressure - Output to Shoring

No	Z1	P1	Z2	P2	Slope
0	5.5	0.00	8.0	0.16	0.06
1	8.0	0.16	197.2	0.16	0.00

****
DEPTH/DISTANCE: ft, UNIT WEIGHT: pcf, FORCE: kip/ft, PRESSURE: ksf, SLOPE: kcf

Z, Xa, Xp - Coordinates of ground lines
Z- Depth measured from wall top
Xa - Distance measure from wall to active side.
Xp - Distance measure from wall to passive side

Z1, P1, Z2, P2 - Four values to define a pressure diagram
Z1- Top depth of the diagram
P1- Top pressure of the diagram
Z2- Bottom depth of the diagram
P2- Bottom pressure of the diagram
Slope - (P2-P1)/(Z2-Z1), Slope of the diagram. It also called
    Equivalent fluid density.
Coef. - Pressure Coefficient = Slope/Unit We9ight
Ka - Active Earth Pressure Coefficient
Ko - At-Rest Earth Pressure Coefficient
Kp - Passive Earth Pressure Coefficient

APPENDIX B – SUMMERVILLE WWPS DRAFT REPORT

RAMBOLL

WATER

SUMMERVILLE WASTEWATER PUMPING STATION DRAFT DESIGN REPORT

Project name	**Rochester-REDI Grants**
Project no.	**1940100197**
Recipient	**City of Rochester**
Document type	**Draft Report**
Version	**1.0**
Date	**February 5, 2021**
Prepared by	**James Cammer and Veronica Davies**
Checked by	**Rick Duff**
Approved by	**Michael Manning**

Date February 5, 2021

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1.3 Building and Pumping Systems 4
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Figure 2 – Summerville Pump Station Service Area.

TABLE OF APPENDICES

Appendix A – Photo Log
Appendix B – Drawing 1
Appendix C – Manufacturer Information
Appendix D – Cost Estimate

Ramboll
Harro East Building
400 Andrews Street, Suite 710
Rochester, NY 14604
USA

T 585-295-7700
F 585-263-2869
https://ramboll.com

1 Background

The Town of Irondequoit owns and operates the Summerville Wastewater Pumping Station (WWPS) that serves the area immediately surrounding the St. Paul Boulevard Terminus, including Westage at the Harbor, local businesses, Rochester Yacht Club, and residences. The March 2020 REDI Engineering Report documented the potential flood risks for the Summerville WWPS and recommended necessary floodproofing improvements to maintain the WWSP's operation for surrounding residents.

Ramboll conducted an engineering evaluation to assess flood risk and identify appropriate protective measures. Potential floodwater risks were determined through a site visit, interviews with facility personnel, and analysis of facility record drawings. This report further outlines our assessment and recommends modifications to protect the Summerville WWPs from future flood damage.

1.1 Pumping Station Description

The original construction date of the Summerville WWPS is unknown, but the Town upgraded the pumping station in 1998 to increase capacity and modernize the system. The current pumping arrangement consists of two Gorman Rupp suction lift pumps, each rated at 750 GPM (approximately 1.08 MGD) located inside the masonry WWPS building (see Appendix A – Photo Log). A natural gas combustion engine is connected to Pump #2 to supply power during electrical outages. The building also encloses the pump discharge piping, valves, control panel and electric service panels.

The influent wet well is positioned at the rear of the building and receives flows through two 12" gravity sewer connections. The wet well is 19'-10" deep by 8'-0” in diameter and is partially under the pump building structure (see Appendix B – Drawing 1). Two self-priming suction lift pumps draw the raw sewage up through the intake pipes, and the discharge flow is sent to the Monroe County Pure Waters System in the Pattonwood Pump Station vicinity.

The Town of Irondequoit Dept. of Public Works (DPW) Sanitary Sewer Foreman Chris Yount, and staff attending the site inspection, stated the station’s pumping capacity is not a problem under normal operating conditions. This team reported that during the recent flood event in 2019, the DPW placed a temporary bypass pump in an upstream sanitary manhole to divert flow, and the Summersville WWPS was able to continue operating normally. However, continuous stressors on this system during high water conditions coupled with the age of the pumps, limited capacity (only one pump can operate at a time due to the backup drive configuration), and known control issues is reason to evaluate the long-term viability of the existing system. Based on these factors, Ramboll recommends replacing the existing pumping system with a submersible pumping system consisting of two pumps operating in a lead-lag configuration.

Recent inflow and infiltration (I&I) improvements have also reduced the peak wet weather flows impacting the WWPS. The I&I improvements include stormwater separation, street rain gutters and paving improvements. The Town of Irondequoit provided a new storm connection to each residence where stormwater connections to the sanitary system were removed, Figure 1. Stormwater separation increased the capacity, while street gutters and road improvements enhanced water conveyance.

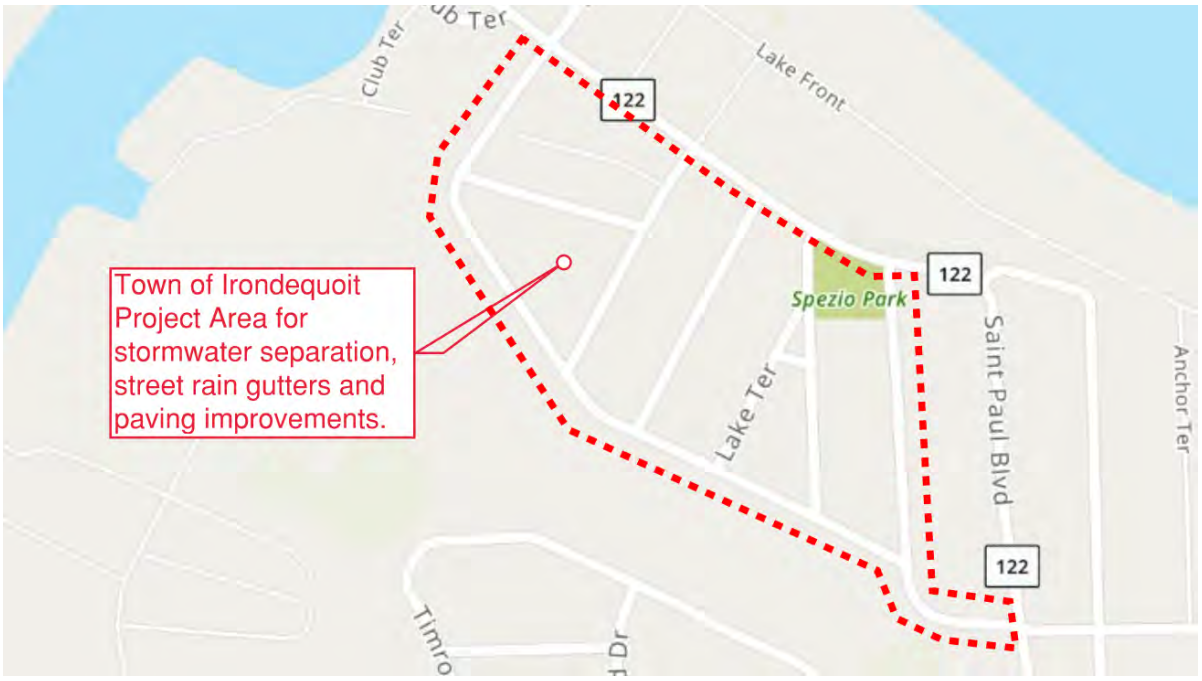


Figure 1. **Location of Inflow and Infiltration improvements.**

1.2 Flood Damage Risk

The Summerville WWPS is located at an elevation of 251.17, approximately 260 ft from the Genesee River. The surrounding area of the WWPS is at risk for flooding when the elevation of Lake Ontario is above 249.5. The major flood event in 2019 in the Rochester area caused considerable damage, and qualified projects are eligible for assistance under the New York State REDI program, including the proposed construction of a dike wall or levee along both sides of the Genesee River. A side effect to keeping the high river water from flooding the area is that the wall will impede the natural overland stormwater flow to the river, and flow from the storm water system will be restricted through the check valve on the existing outfall pipe located on the SW corner of the NYSDEC Fishing Access. As a result of these flow restrictions, flood waters will pond in the area of the St. Paul Terminus and will further influence sanitary system I&I. A new stormwater pump station is proposed to alleviate stormwater levels over/through the flood wall and into the river.

The top of the proposed flood wall will be set at an elevation of 253 ft, approximately 3 ft above the WWPS floor elevation. Additional measures must be performed to ensure the continuous operation of the Summerville WWPS during flooding events. High water around the Summerville WWPS could cause damage from the following:

1. Wet Well Access/Vent: The wet well access hatch is set at elevation 251.5 ft and is unsealed. The wet well vent is constructed of light gauge duct work and could fail if not protected.
2. Pump Station Entry: Water could enter the WWPS building through doorways, minor cracks, and a near ground-level ventilation louver.
3. Unsealed Electrical Conduit: Conduit junction boxes along building exterior and interior.
4. Floor Drain: Floor drains within the pumping station are connected to a common pipe draining into the wet well. Inundation of the wet well could lead to flooding of the pumping station building.

1.3 Building and Pumping Systems

Several relatively low-cost modifications can be completed to increase the flood resiliency of the Summerville WWPS. Manufacturers information is included in this report (see Appendix C). Potential improvements include:

- Verification of As-Builts of the WWPS masonry building, including floor drain location and floor elevation of 251.17 ft, as shown on the 1998 Passero plans.
- Seal any concrete floor and masonry wall cracks that could be water entry points.
- Confirm/seal all conduit pull/junction boxes below elevation 253'.
- Elevate interior outlet(s), wet well vent duct, and exterior ventilation above BFE.
- Install a duckbill check valve on the building drain into the wet well.
- Install a new reinforced concrete slab over the exterior wet well top for pump access, and install new gasketed wet well hatch.
- Replace light-gauge metal wet well vent with steel pipe vent through wet well top and seal all openings.
- Install utility cover inserts on utility holes below BFE within the Summerville WWPS service area.
- Remove and Replace existing 1998 v-belt driven sanitary pumps, pipes, valves, and natural gas motor with new duplex submersible pump system. Submersible pumps will be Town of Irondequoit standard as manufactured by Flygt.
- Provide temporary bypass pumping from the two 12" sewers that discharge to the wet well until new pumps are in operation.
- Install new 480v/3 phase electric service to operate the submersible pumps. As the associated stormwater pumping station will also operate on 480v/3 phase, a common service from the utility (RGE) will be installed.
- Install removable aluminum flood barrier panels across the interior of double door opening on the west side of the building. The aluminum panels will be stored at the site and installed when needed. As an alternate to installation of aluminum stop logs, inexpensive concrete curbing could be installed inside of the pump station.

1.4 Service Area

The Summerville Pump Station currently collects sanitary waste from the homes and businesses surrounding St. Paul Terminus, approximately 130 acres (Figure 2). There are 19 sanitary sewer manholes below the BFE of 253'. These manholes with unsealed covers are susceptible to floodwater infiltration, which can overcome pumping capacity and result in sewer backups. Possible solutions include (1) the installation of an inexpensive manhole cover insert that is set just below the existing cast iron cover, or (2) replace the current frame and cover with a watertight gasketed unit. However, option 2 requires excavation to remove the existing structure and the placement of a new cast iron frame. Non-penetrating pick holes and bolted down solid covers are used but are much more expensive ($1,000 ea.) and labor-intensive to install.

Figure 2. **Summerville Pump Station Service Area. The red outline indicates the area below an elevation of 253.**

1.5 Project Costs

The total estimated cost for the Summerville Pump Station improvements is approximately $230,000 and is outlined in Appendix D. The cost includes flood protection for the WWPS, updates to existing manhole covers, and replacement of existing sanitary suction pumps, piping and controls. The REDI MO-03 project is included in a cost-sharing agreement between the City of Rochester and Town of Irondequoit.

1.6 Implementation

The proposed flood protection improvements are anticipated to protect the Summerville WWPS to a flood elevation of 253. The proposed improvements can be implemented through new publicly bid construction contracts. Implementation of the project will require coordination between the City of Rochester and the Town of Irondequoit for approval of proposed improvements, review of applicable city and town design guidelines, and cost sharing. Project construction is expected to start late summer 2021, and be completed by the Spring of 2022.

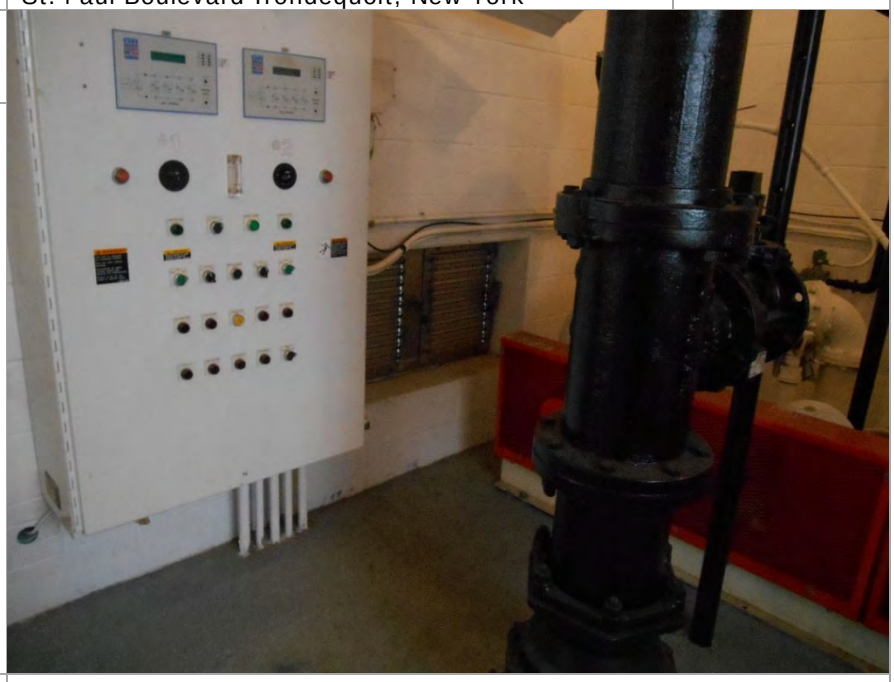
APPENDIX A - PHOTO LOG

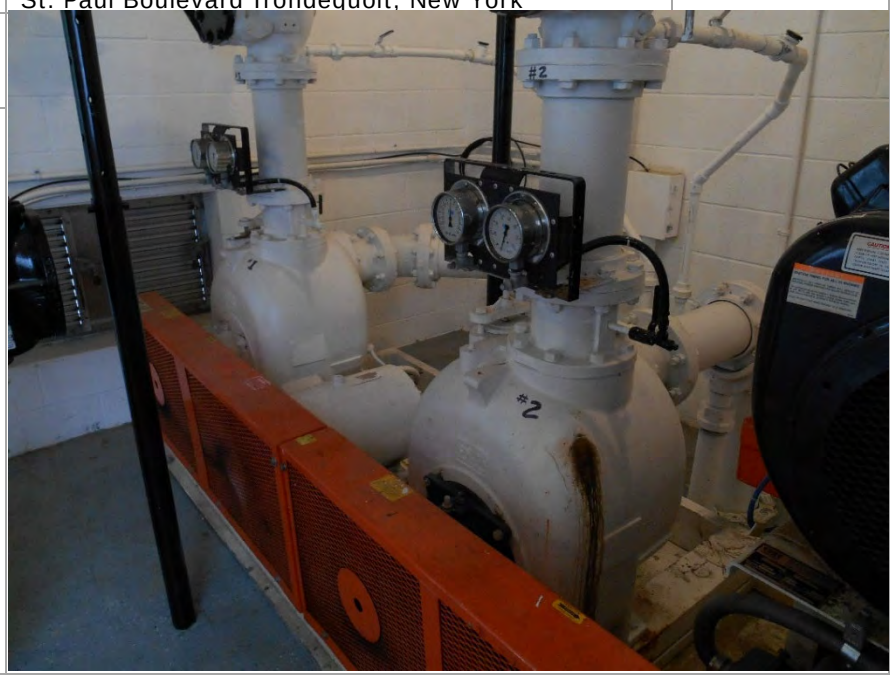
CLIENT NAME: New York Office of General Services	SITE LOCATION: Summerville Pump Station St. Paul Boulevard Irondequoit, New York	PROJECT NO. 1940100197
PHOTO NO. DSCN1043 / DATE: 12/09/20		
DESCRIPTION Northwest corner of the Summerville Pump Station.		

CLIENT NAME: New York Office of General Services	SITE LOCATION: Summerville Pump Station St. Paul Boulevard Irondequoit, New York	PROJECT NO. 1940100197
PHOTO NO. DSCN1045 / DATE: 12/09/20		
DESCRIPTION Rear view of the pump station facing south, including access hatch to wet well.		

CLIENT NAME: New York Office of General Services	SITE LOCATION: Summerville Pump Station St. Paul Boulevard Irondequoit, New York	PROJECT NO. 1940100197
PHOTO NO. DSCN1048 / DATE: 12/09/20		
DESCRIPTION East view of the pump station, including side entry door, electric meter, and ventilation louvre.		

CLIENT NAME: New York Office of General Services	SITE LOCATION: Summerville Pump Station St. Paul Boulevard Irondequoit, New York	PROJECT NO. 1940100197
PHOTO NO. DSCN1051 / DATE: 12/09/20		
DESCRIPTION Interior view of the pump station, including 2 6” Gorman-Rupp self-priming pumps and a natural gas motor.		

CLIENT NAME: New York Office of General Services	SITE LOCATION: Summerville Pump Station St. Paul Boulevard Irondequoit, New York	PROJECT NO. 1940100197
PHOTO NO. DSCN1054 / DATE: 12/09/20		
DESCRIPTION Louvre opening, FM header 2 6" lines with expansion joints (10" at floor level).		

CLIENT NAME: New York Office of General Services	SITE LOCATION: Summerville Pump Station St. Paul Boulevard Irondequoit, New York	PROJECT NO. 1940100197
PHOTO NO. DSCN1057 / DATE: 12/09/20		
DESCRIPTION Pumps #1 (left) and #2 (right), including suction and discharge gauges.		

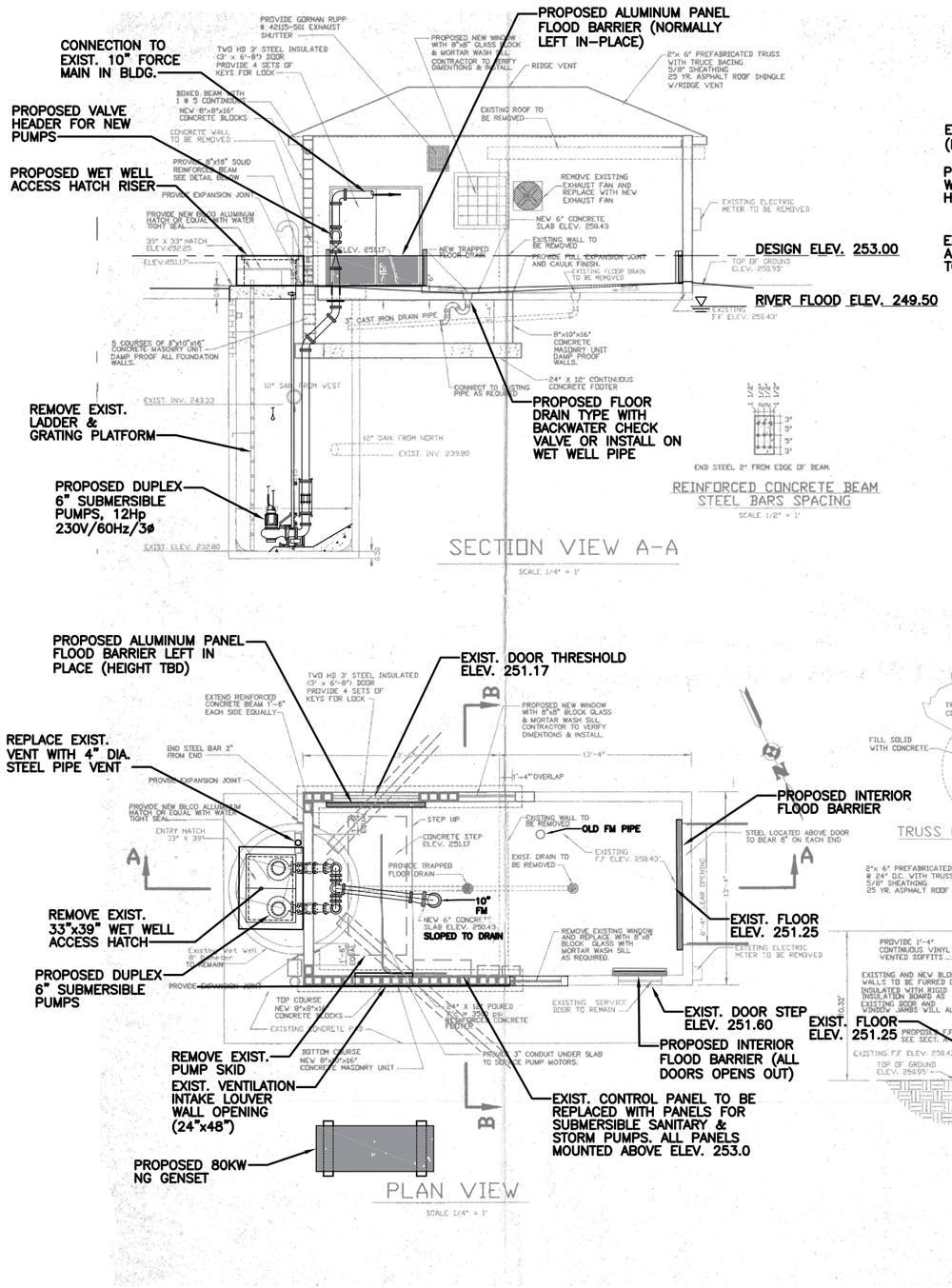
CLIENT NAME: New York Office of General Services	SITE LOCATION: Summerville Pump Station St. Paul Boulevard Irondequoit, New York	PROJECT NO. 1940100197
PHOTO NO. DSCN1060 / DATE: 12/09/20		
DESCRIPTION Wet well open hatch, approximately 2.5” high frame, with no gasket cover.		

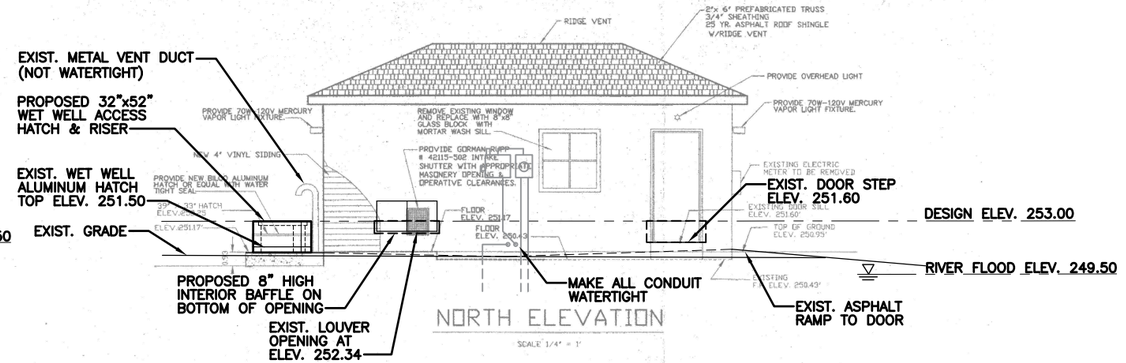
CLIENT NAME: New York Office of General Services	SITE LOCATION: Summerville Pump Station St. Paul Boulevard Irondequoit, New York	PROJECT NO. 1940100197
PHOTO NO. DSCN1063 / DATE: 12/09/20		
DESCRIPTION West side double doors.		

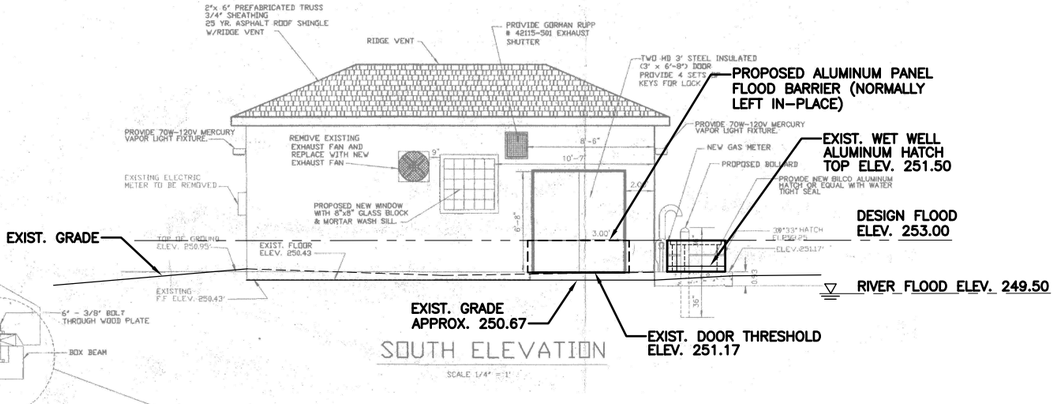
CLIENT NAME: New York Office of General Services		SITE LOCATION: Summerville Pump Station St. Paul Boulevard Irondequoit, New York	PROJECT NO. 1940100197
PHOTO NO. DSCN1064	DATE: 12/09/20		
DESCRIPTION North view inside the WWPS, with 1 set of double doors and 1 side entryway.			

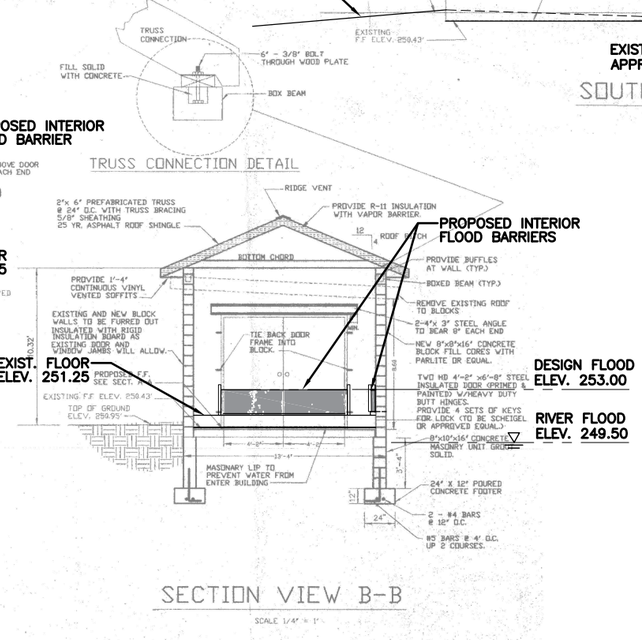
CLIENT NAME: New York Office of General Services		SITE LOCATION: Summerville Pump Station St. Paul Boulevard Irondequoit, New York	PROJECT NO. 1940100197
PHOTO NO. DSCN1070	DATE: 12/09/20		
DESCRIPTION Natural gas service regulator and meter.			

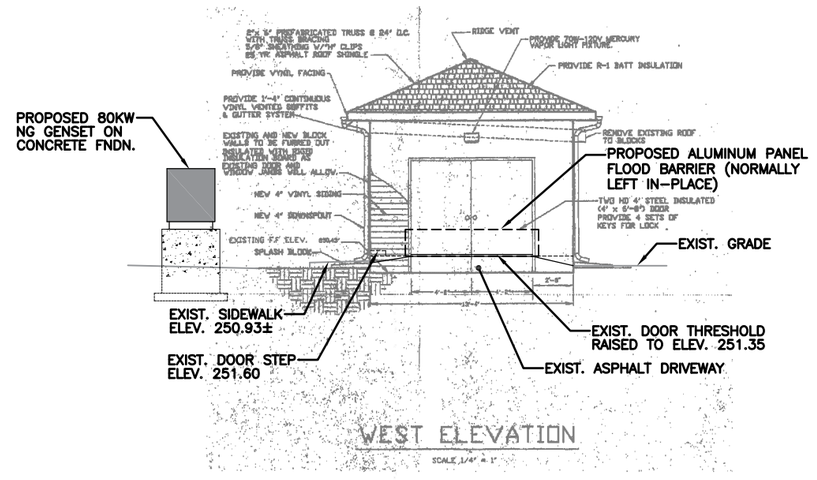
APPENDIX B – DRAWING 1











Notes:

1. Drawing background is Summerville Pump Station, Building Structure Improvements by Passero Associates, P.C. dated July, 1998.

10' 0 10'

ROCHESTER REDI-GRANT: MO-03 AND MO-09
BUILDING PLAN & ELEVATIONS

SUMMERVILLE PUMP STATION
ST. PAUL BOULEVARD
IRONDEQUOIT, NEW YORK

DRAWING 1

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

RAMBOLL

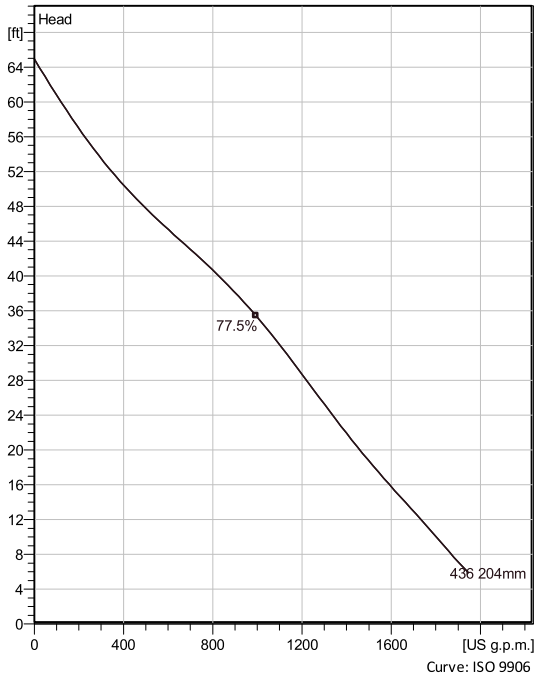
APPENDIX C – MANUFACTURER INFORMATION

NP 3153 MT 3~ 436

Patented self cleaning semi-open channel impeller, ideal for pumping in waste water applications. Possible to be upgraded with Guide-pin® for even better clogging resistance. Modular based design with high adaptation grade.

Technical specification

Curves according to: Water, pure ,39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



Curve: ISO 9906

Configuration

Motor number
N3153.095 21-15-4AA-W 12hp

Installation type
P - Semi permanent, Wet

Impeller diameter
204 mm

Discharge diameter
6 inch

Pump information

Impeller diameter
204 mm

Discharge diameter
6 inch

Inlet diameter
150 mm

Maximum operating speed
1765 rpm

Number of blades
2

Max. fluid temperature
40 °C

Materials

Impeller
Hard-Iron ™

Project		**Created by**	Ian Belczyk	**Last update**	1/8/2021
Block		**Created on**	1/8/2021		

NP 3153 MT 3~ 436

Technical specification

Motor - General

Motor number N3153.095 21-15-4AA-W 12hp	**Phases** 3~	**Rated speed** 1765 rpm	**Rated power** 12 hp
ATEX approved FM	**Number of poles** 4	**Rated current** 32 A	**Stator variant** 5
Frequency 60 Hz	**Rated voltage** 230 V	**Insulation class** H	**Type of Duty** S1
Version code 095			

Motor - Technical

Power factor - 1/1 Load 0.78	**Motor efficiency - 1/1 Load** 88.5 %	**Total moment of inertia** 1.58 lb ft²	**Starts per hour max.** 30
Power factor - 3/4 Load 0.71	**Motor efficiency - 3/4 Load** 88.5 %	**Starting current, direct starting** 228 A	
Power factor - 1/2 Load 0.58	**Motor efficiency - 1/2 Load** 87.0 %	**Starting current, star-delta** 75.9 A	

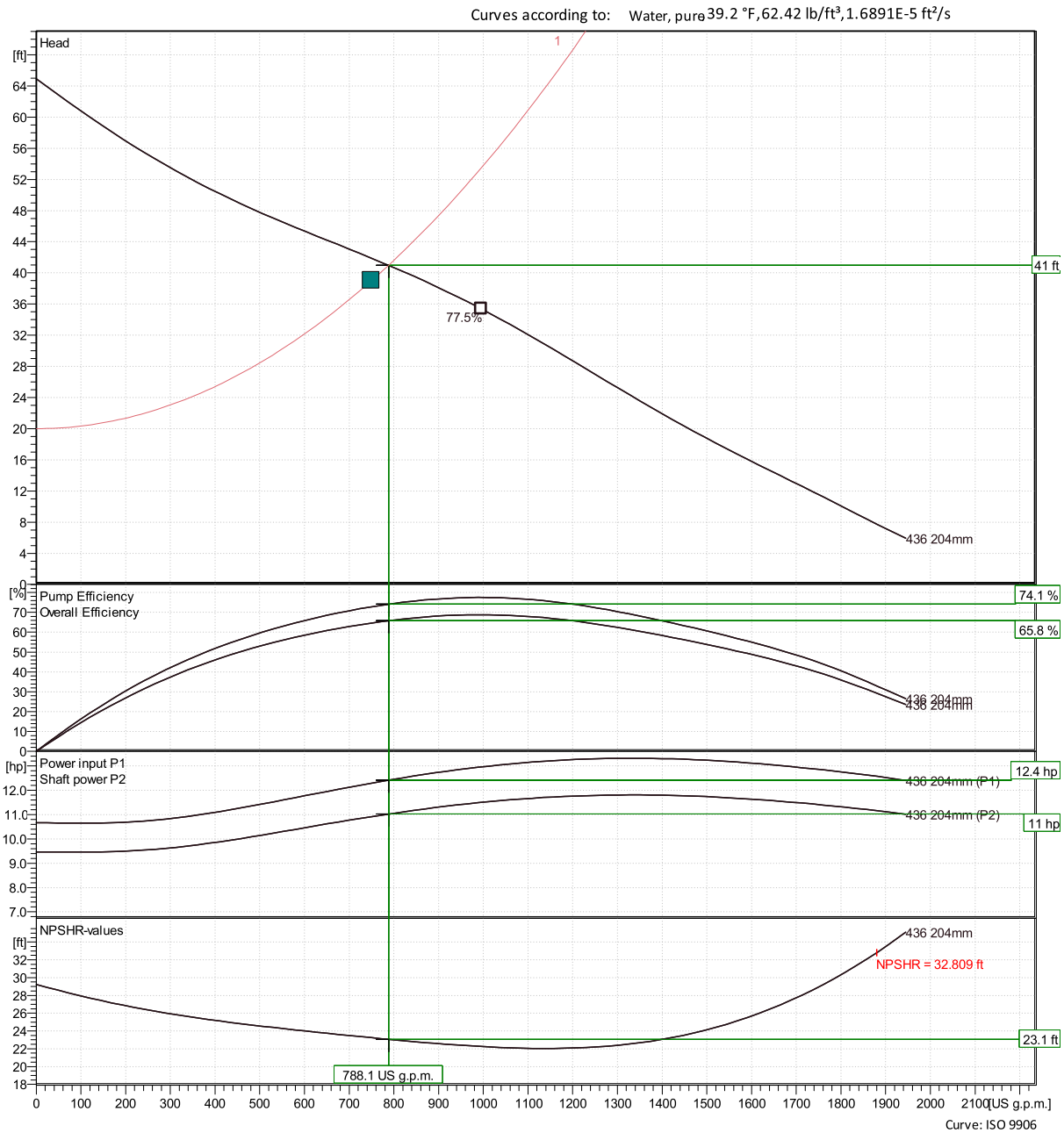
Project		**Created by**	Ian Belczyk	**Last update**	1/8/2021
Block		**Created on**	1/8/2021		

NP 3153 MT 3~ 436

Performance curve

Duty point

Flow	Head
788 US g.p.m.	41 ft



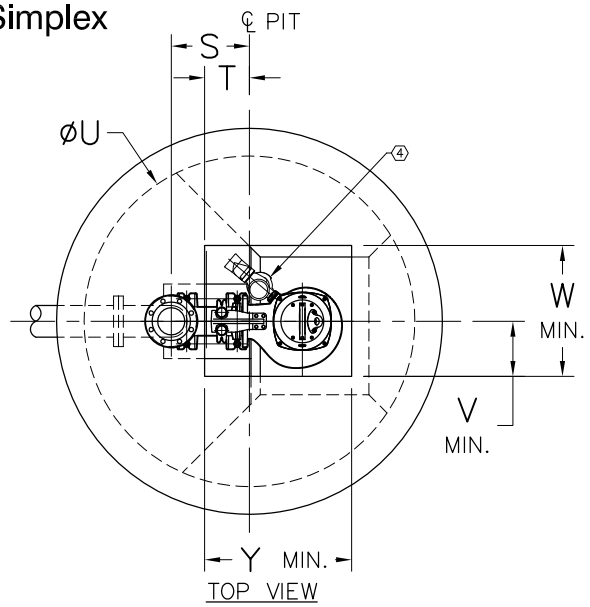
Project		**Created by**	Ian Belczyk	**Last update**	1/8/2021
Block		**Created on**	1/8/2021		

FP/NP-3153

NOTES:

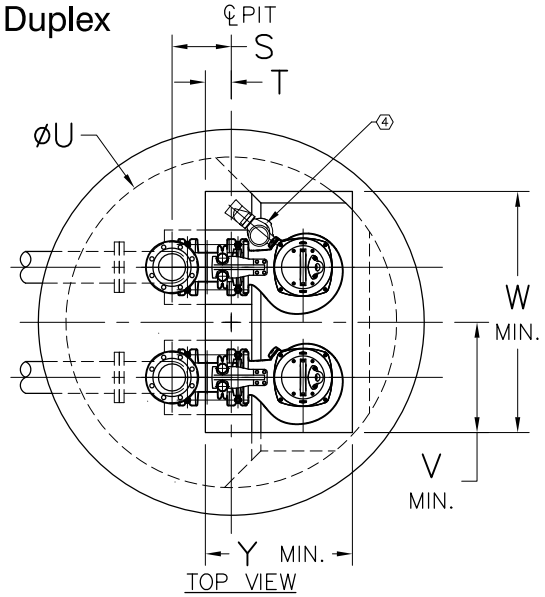
1. CONFIGURATION AND DIMS. SHOWN ARE SUGGESTED REQUIREMENTS ONLY. ALL DETAILS, INCLUDING SIZING OF PIT, TYPE, LOCATION AND ARRANGEMENT OF VALVES AND PIPING, ETC. ARE TO BE SPECIFIED BY THE CONSULTING ENGINEER AND ARE SUBJECT TO THEIR APPROVAL.
2. REFERENCE GENERIC DUPLEX LIFT STATION LAYOUT FOR ELEVATION VIEW.
3. LOCATE ANCHOR BOLTS USING INSIDE EDGE OF CLEAR OPENING AND PUMP CENTERLINE AS REFERENCE POINT. BOLT LOCATIONS MUST BE HELD TO MAINTAIN EXACT POSITION OF PUMP TO CLEAR OPENING.
4. ITT FLYGT MIX-FLUSH VALVE.

Simplex

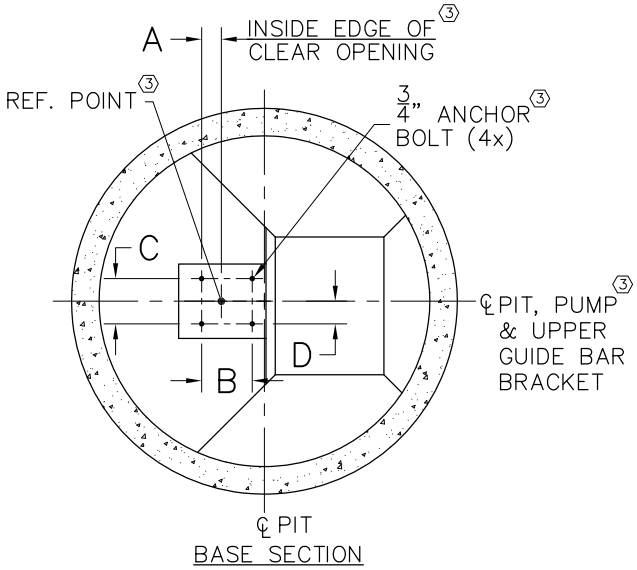


TOP VIEW

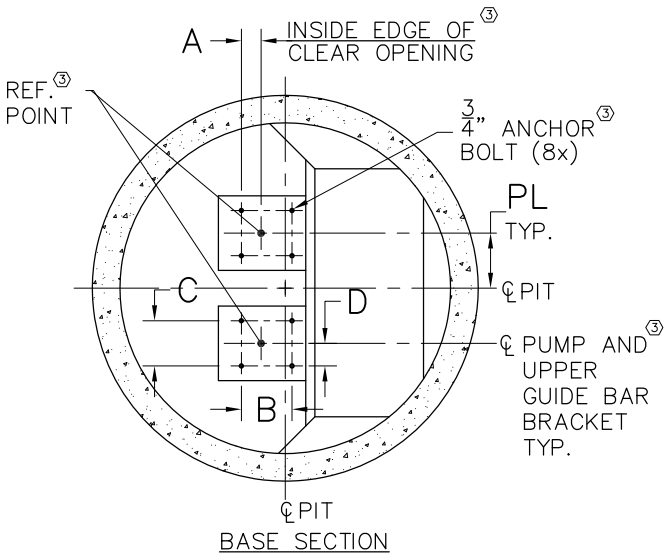
Duplex



TOP VIEW



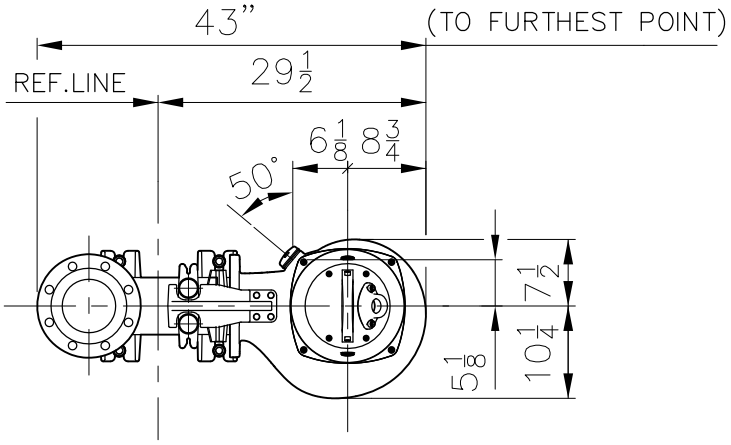
BASE SECTION

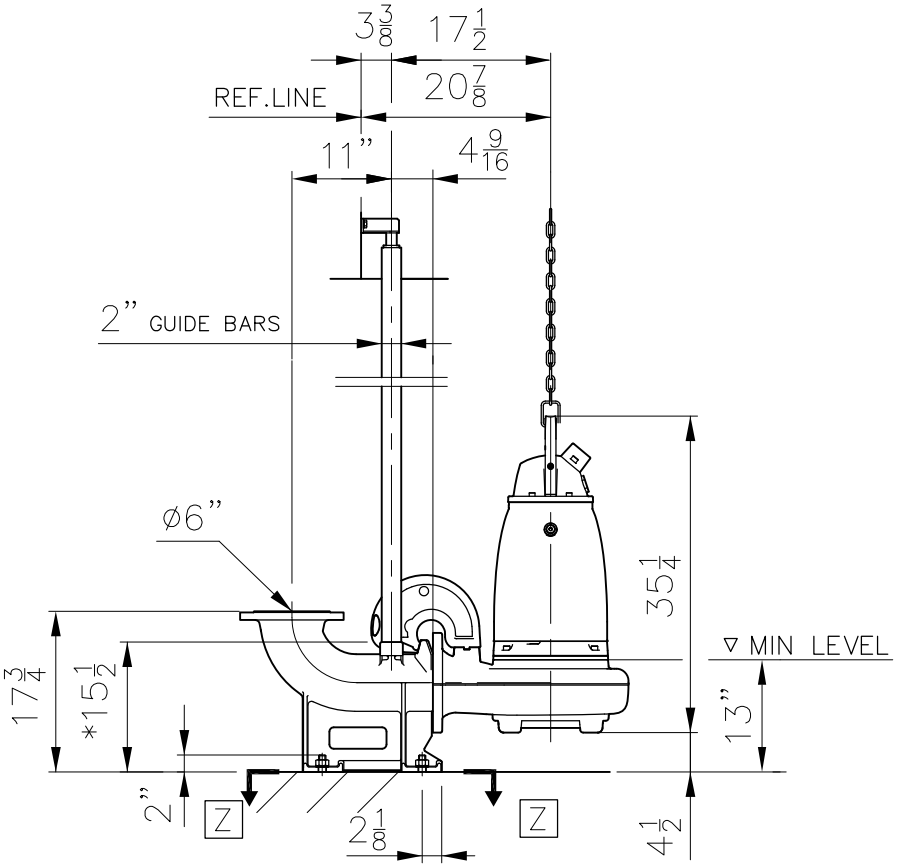


BASE SECTION

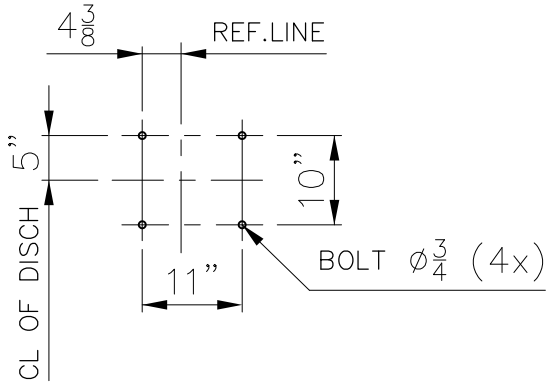
ALL DIMENSIONS ARE IN INCHES

MODEL	NOM. SIZE	VERSION					SIMPLEX						DUPLEX						
			A	B	C	D	S	T	U	V	W	Y	S	T	U	PL	V	W	Y
FP/NP	3"	SH	2½	9⅞	8	4	21¼	15¼	72	9	27	29½	18⅜	12⅜	72	11	20	49	29½
FP/NP	4"	SH	2¾	9⅞	8	4	19¾	13¼	72	9	27	29½	16½	10	72	11	20	49	29½
FP/NP	4"	HT	2¾	9⅞	8	4	19¾	13¼	72	11	27½	30½	16½	10	72	11	22	49½	30½
FP/NP	6"	MT	4⅜	11	10	5	17⅜	9¾	72	12	28½	32	12⅝	5¼	72	12	24	52½	32
NP	8"	LT	5½	11	10	5	14¼	5⅝	72	14	30½	35	16½	7⅝	84	13	27	56½	35
NP	10"	LT	14⅛	19¾	10	5	23¾	13	96	16½	35½	40	16¾	6	96	18	34½	71½	40





VIEW Z — Z



* DIMENSION TO ENDS OF GUIDE BARS

Weight (lbs)	
Pump	Disch
485	175

FLYGT AUTOCAD DRAWING	Denomination: Dimensional drwg NP,FP 3153 MT ø6"	Drawn by IW	Checked by CJS	Date 141117
		Scale		Reg no 5399
		6504300		12

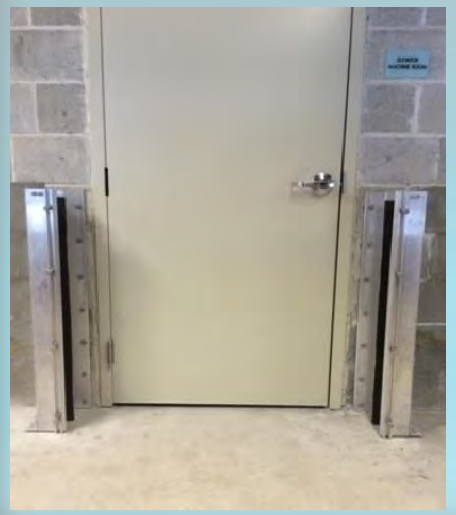
PRODUCTS

Effective and Customizable Flood Protection Systems

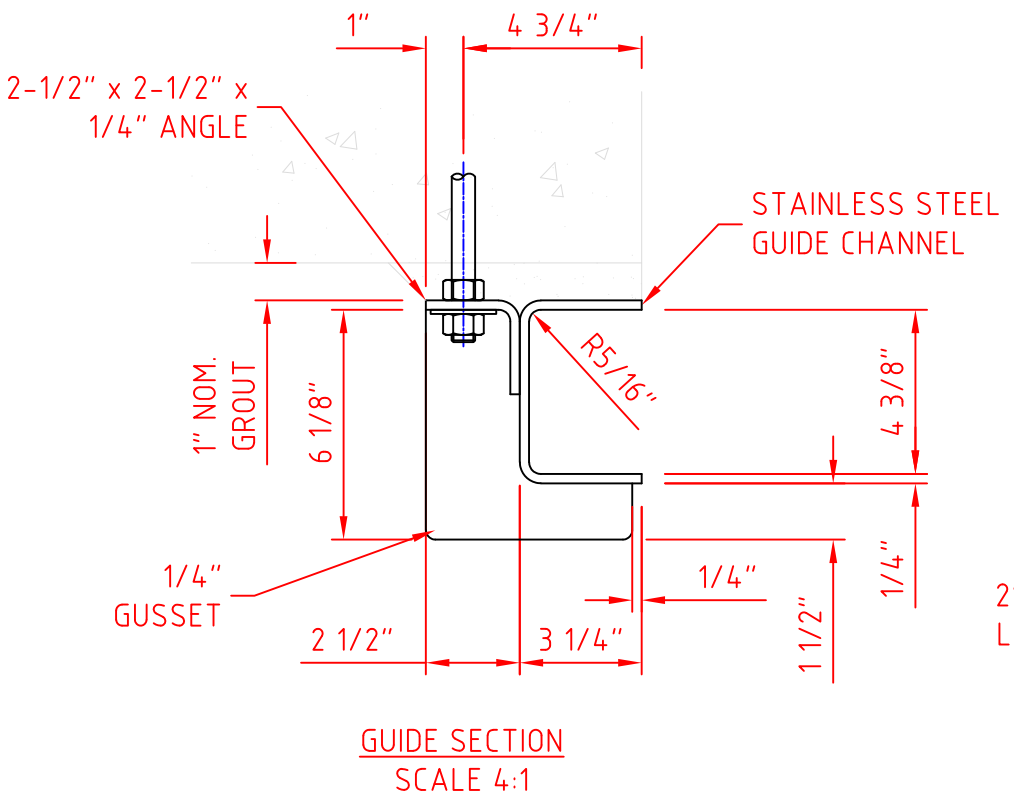
Flood Log Flood Barrier	Standard Flood Panel	Puddle Panel	Hinged Flood Gate	Pedestrian Flood Door
This stackable, modular system can be installed on window openings, across doors and store front areas, as well as an entire building perimeter defense.	Solid, removable flood barrier edged with a rubber gasket, ideal for single or double door application, above grade windows and louvers.	A quick reaction water barrier system capable of withstanding low-level flooding used for occasional events, such as flash flooding or torrential rain.	Custom designed for almost any width opening, it can be fabricated in either a single or double leaf configuration, and central support wheels.	Internally reinforced and offering a mechanical sealing mechanism housed within the frame to give a leak-free seal when properly closed.
				

FLOOD LOG FLOOD BARRIER

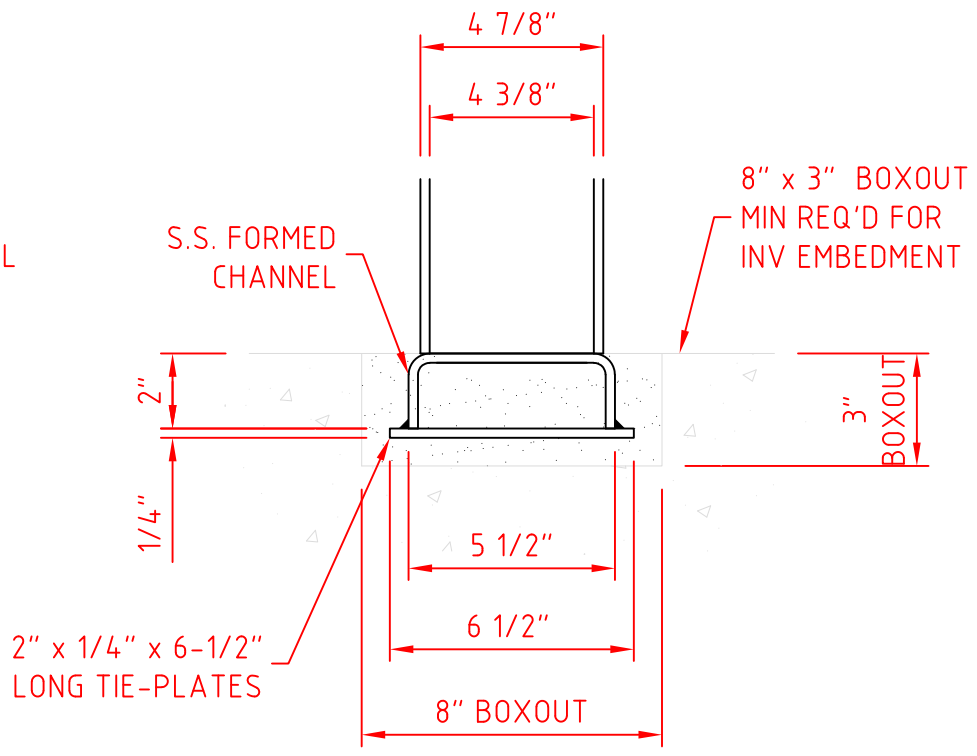
A series of “C” shaped support posts anchor the flood barrier system. The support posts that attach to the building structure can be installed on a removable basis minimizing the aesthetic impact on the building. In the event of a hurricane or other flood event, horizontal aluminum log beams slide into each support post and stack on edge in a tongue and groove configuration. Because of its modular design, it can run the length of any sized structure with a maximum height of 9 feet. The Flood Log barrier system offers some of the fastest reaction time available on the market today.



Ref Plan Sheet: SK101



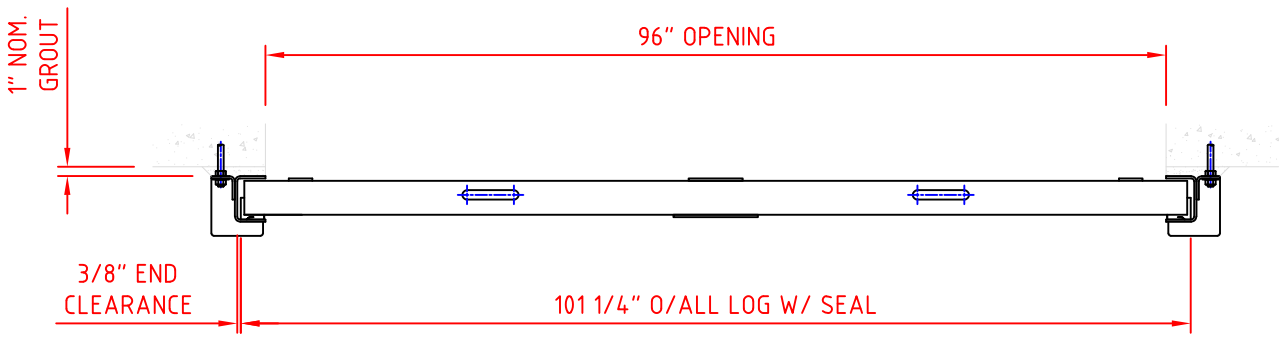
GUIDE SECTION
SCALE 4:1

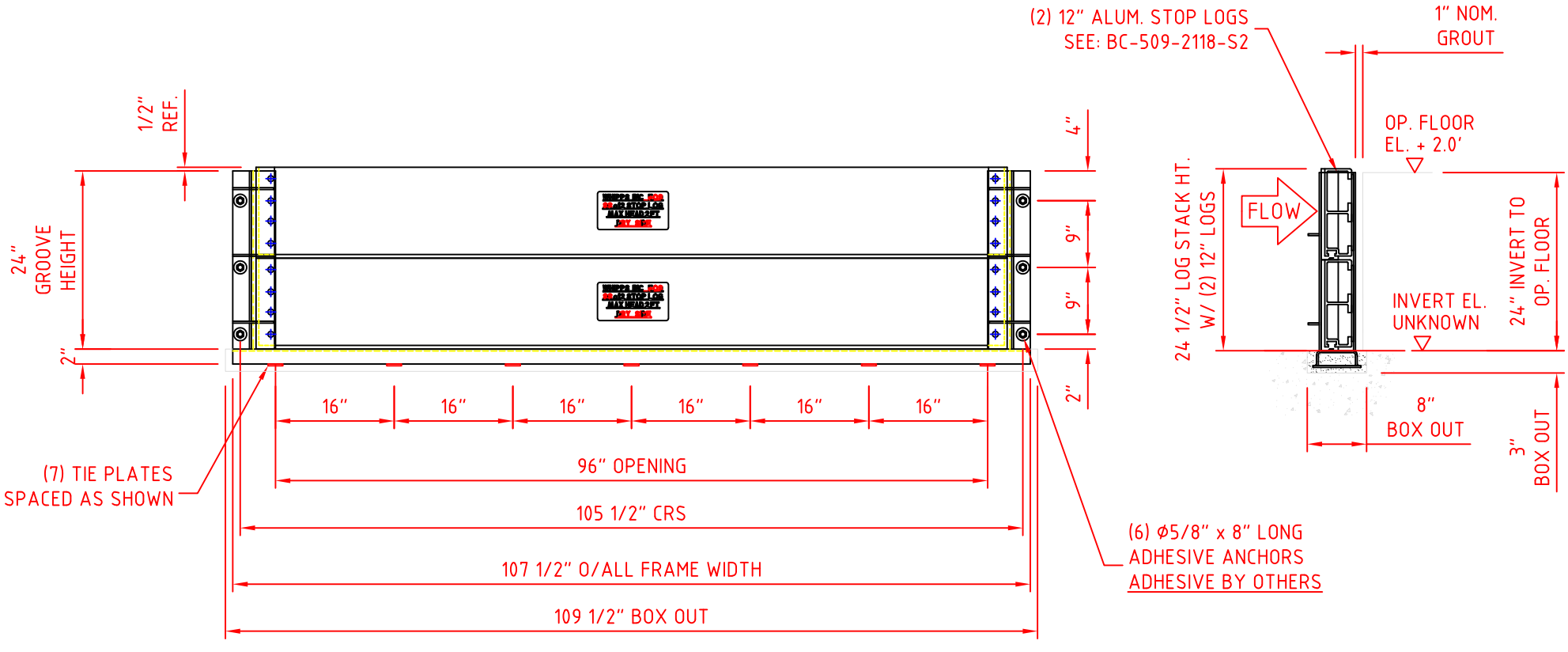


INVERT SECTION
SCALE 4:1

SEE ABOVE FOR GROOVE SECTION DETAILS
BC-509-2118-S2: FOR STOP LOG DETAILS
BC-509-2115-S3: FOR STORAGE RACK DETAILS

QUANTITIES:
(1) SET OF GROOVES - S.S.
(2) 12" STOP LOG - ALUM.
(1) STORAGE RACK - ALUM. - #T1





Title	SERIES 509 STOP LOG INSTALL 96" x 24"	Qty: ABOVE	Scale: 1:20
Project	WWTP RAW PUMP & OIL YORK, PA.	Tag No's: N/A	
Location	DIVERSION P/S	Job No:#J1/L5	Seating / Unseating
Drg. No.	BC-509-2118	S.O. No. 27727	Design Head: 2.0' / -
			Leakage Rate GPM/ft of seal: 0.05 / -

DO NOT SCALE THIS DRAWING
Work to Dimensions
Linear Dimensions are Inches
Requested Concrete Opening Tolerances
Height & Width ±1/4"
Squareness ±3/8 Diagonal
THIRD ANGLE PROJECTION

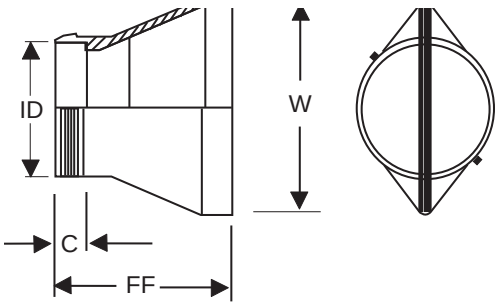
Rev.	Rev. Record	Date	Eng.	Chk.
B	Rev. Per Return Comments	08/01/19	RAR	
A	Original Issue	04/12/19	RAR	

Whipps, inc.
370 SOUTH ATHOL RD.
ATHOL, MA 01331

Series RF-DBO

Rubber Flex Duckbill Check Valves
Slip-Over Style

Cla-Val Series RF-DBO Duckbill Slip-Over Style Check Valves feature a soft sleeve end for slip over connection to pipe end and fastened with stainless steel clamp for low inlet pressure applications. A variety of elastomers allow RF-DBO valves to be used with many different fluids. When ordering, specify Model RF-DBO, pipe OD size, and add first letter of elastomer material. E: 4"-DBO-N (N for Neoprene)

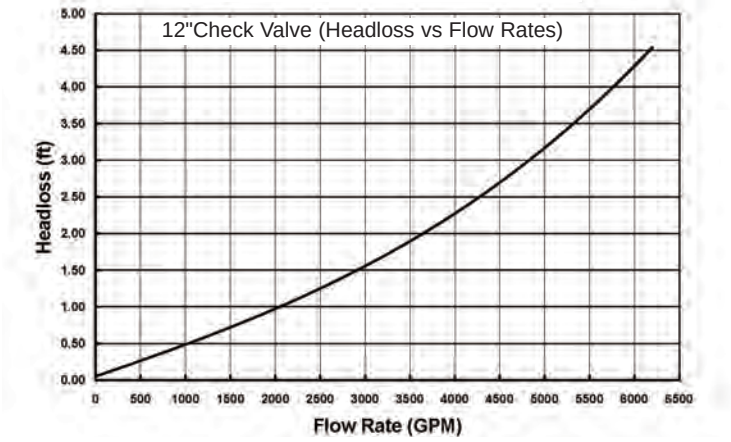


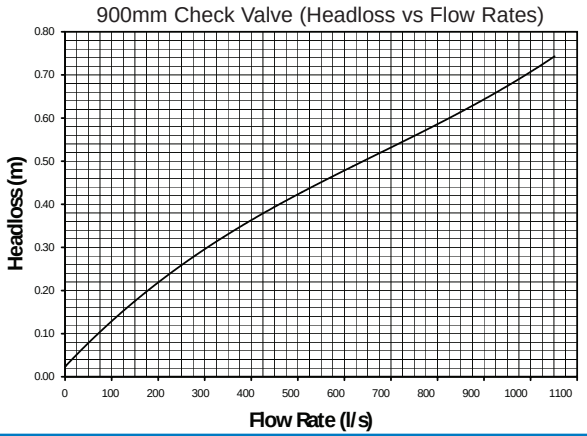
Note 1:
Dimensions are for clearance purposes only. Actual product dimensions may vary based upon specific application requirements.

Note 2:
Larger sizes are available, contact local office for pricing.

Model RF-DBO

Size ID	3/4	1	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24	28	30	36	42
F/F	3	3 1/4	4 1/2	5 3/4	7 1/2	9	12	13	15	17	18	24	26 1/2	28	31	32	41	44	46	58	61
C	1	1	1	1 1/2	2	3	3	3	4	4	4	6	6	6	6	8	8	8	10	10	12
W	1 1/2	2 1/8	2 5/8	3 7/8	4 5/8	5 1/2	7 3/8	8 3/4	10 1/2	13 3/4	17	19 5/8	24 3/4	26 1/2	29 3/4	31 1/2	43	46	49	55 1/4	66 1/4
Wt. Lbs	.75	1.5	4	5	8	11	14	16	20	24	36	56	72	118	195	299	380	451	523	621	902





Sample Flow Rate vs Headloss Graphs. Other size charts available upon request. Based on flow testing at Utah State University.

Elastomer Selection Guide

Ethylene Propylene Rubber
Most effective for applications involving waste or diluted acids.

Viton™
Resists solvents, halogenated hydrocarbons, oxygen, weather, ozone, oils and chemicals.

Buna N®
Resistant to kerosene, moderate chemicals, fats, oils, grease and many hydrocarbons.

Natural Rubber
Good abrasion resistance, tensile strength and resiliency. Also suitable for applications with organic acids, alcohols, ketones and most moderate chemicals.

Hypalon™
Resists strong acids and bases, ozone, weathering, heat and oxidizing chemicals.

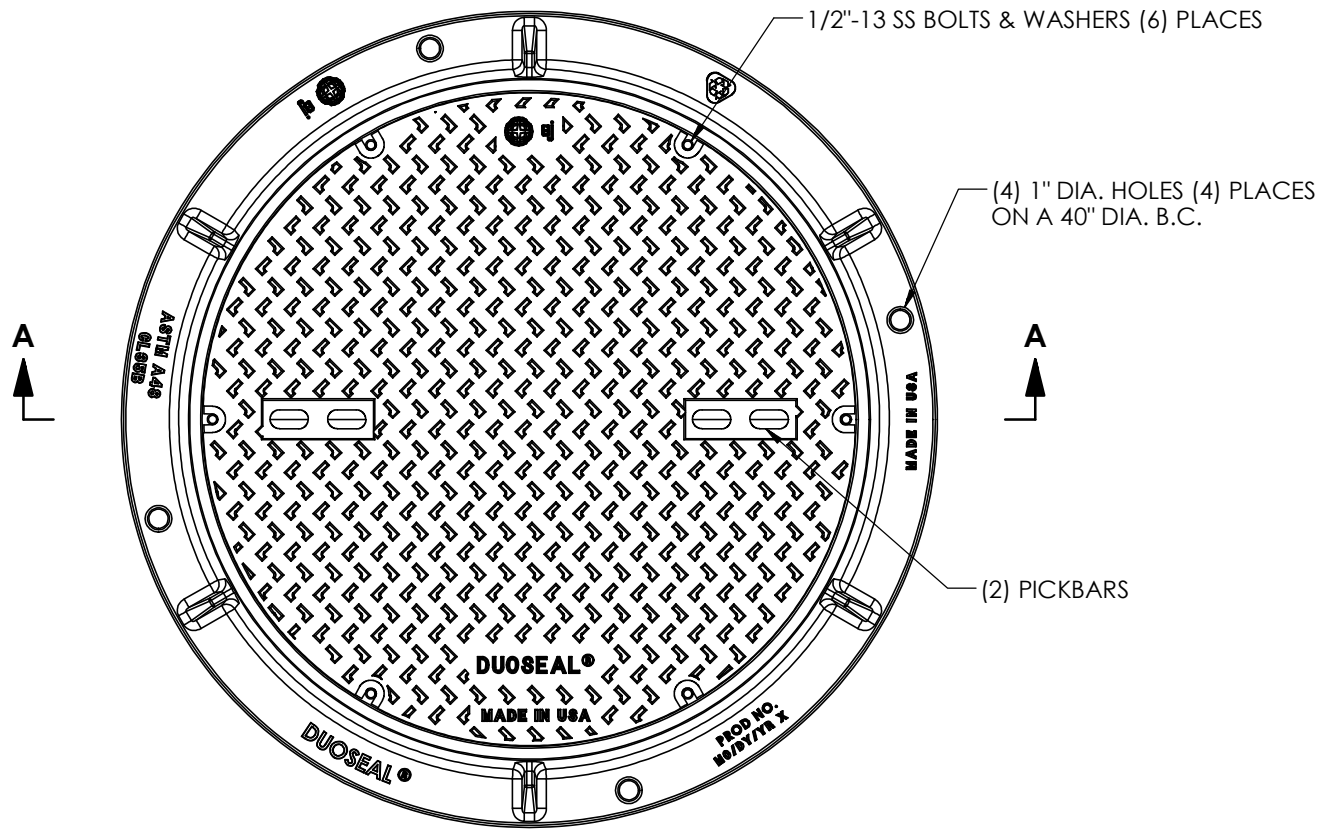
Butyl
Good resistance to animal, vegetable fats, strong oxidizing chemicals, oils, heat and greases.

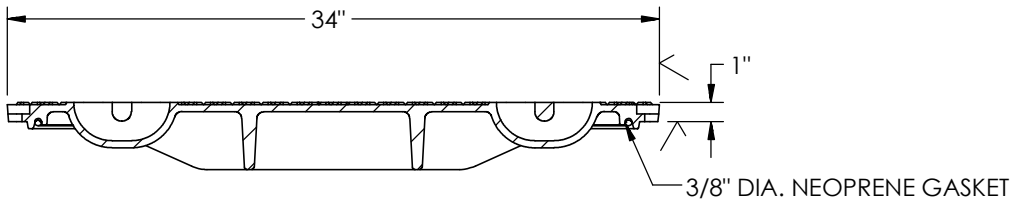
Neoprene
General resistant to oil, grease, moderate chemicals, fats, hydrocarbons, ozone. and barnacle growth.

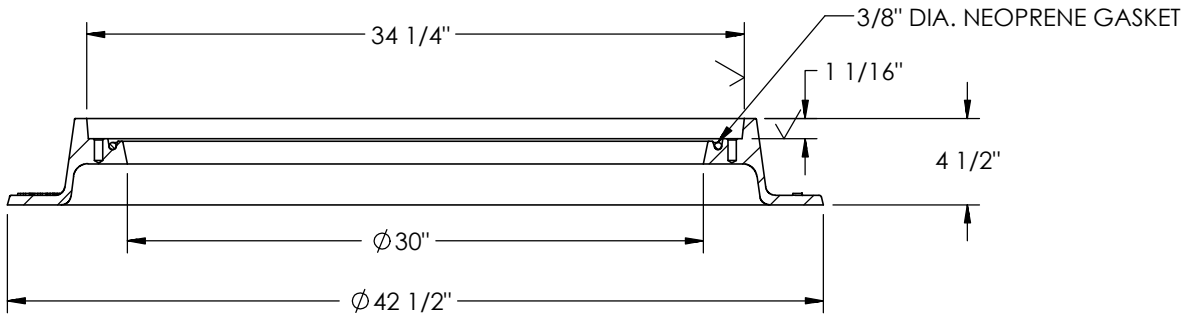
Order Information	Flow Rate (gpm)	Line Pressure	Back Pressure
Minimum			
Maximum			

CLA-VAL 1701 Placentia Ave • Costa Mesa CA 92627 • Phone: 949-722-4800 • Fax: 949-548-5441 • E-mail: info@cla-val.com • www.cla-val.com

W830ZPT DI DUOSEAL® Watertight Assembly







SECTION A-A

Product Number
W8300021W01

Design Features
-Materials
  Frame
    Gray Iron (CL35B)
  Cover
    Ductile Iron (80-55-06)

-Load Rating
  Heavy Duty H20
-Open Area
  n/a
-Coating
  Undipped
-√ Designates Machined Surface

Certification
-ASTM A48
-ASTM A536
-
-Country of Origin: USA

Major Components
W8304511
W8300021

Drawing Revision
08/28/2018 Designer: JIJ
09/29/2020 Revised By: JRA

Disclaimer
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

Contact
800 626 4653
ejco.com

APPENDIX D – COST ESTIMATE

Summerville Wastewater Pump Station Resiliency Improvements - MO-03 and 09

2021 Construction Cost Estimate

	Item	Quantity	Unit	Unit Price	Total
CONTRACT G - BASE BID ITEMS					
				Subtotal	**$0**
				20% Contingency	$0
				ESTIMATED TOTAL CONTRACT G COST	**$0**
				ROUNDED CONTRACT G COST	**$0**
Work to Be Provided by City/Town/County (describe)					
1	Manhole Insert, HDPE	19	Ea	$200	$3,800
	- Option: Watertight Manhole Frame & Cover	0	Ea	$1,750	$0
				Subtotal	**$3,800**
				20% Contingency	$760
				ESTIMATED TOTAL ALTERNATE COST	**$4,560**
				ROUNDED ALTERNATE COST	**$4,600**
Contract G					
1	Aluminum Doorway Flood Barrier - 6'W X 24"H (Optional)	0	Ea	$5,500	$0
2	Aluminum Doorway Flood Barrier - 8'W X 24"H (Optional)	0	Ea	$6,600	$0
3	Aluminum Doorway Flood Barrier - 3'W x 20"H (Optional)	0	Ea	$1,740	$0
4	Wet Well Hatch - 36"x 39" Aluminum	1	Ea	$2,542	$2,542
5	Wet Well Hatch Riser - Reinforced Concrete	1	LS	$1,335	$1,335
6	Louvre Opening Baffle 8"x48" Aluminum	1	LS	$350	$350
7	Floor Drain Check Valve, 3" Proco 730-M3" slip-on	1	Ea	$280	$280
8	Watertight Conduit LB's (Seal)	2	Ea	$50	$100
9	Remove Existing G-R Pumps, piping and controls	1	LS	$1,000	$1,000
	New Submersible Pumps & Accessories				
10	- Flygt Model NP-3153.095 6", incl. 50' cable, 12Hp 230v/3ph motor	2	Ea	$25,517	$51,034
11	- Flush Valve	1	Ea	$3,668	$3,668
12	- Factory Pump Testing	2	Ea	$1,131	$2,262
13	- Discharge Connection, 5 1/2x6" C.I.	2	Ea	$1,358	$2,716
14	- Hardware Kit 3/8" SS	2	Ea	$58	$116
15	- Guide Bar Bracket	2	Ea	$218	$436
16	- Guide Rail, 2" 316 SS	80	LF	$48	$3,840
17	- Lifting chain, 316 SS	50	LF	$48	$2,400
18	- Chain Fitting Kit, 316 SS	2	Ea	$58	$116
19	- Grip Eye Unit	1	Ea	$127	$127
20	- Cable Holder, heavy duty 316 SS	1	Ea	$153	$153
21	- Safety Hook Assembly, SS	2	Ea	$129	$258
22	- Disconnect Hardware, SS	2	Ea	$392	$784
	Pump Protection Relays				
23	- Sensor, ENM-10	5	Ea	$414	$2,070
24	- Mini-CASII	2	Ea	$536	$1,072
25	- 11 Pin Socket	2	Ea	$52	$104
26	Duplex Control Panel, 230v/3 ph, X HP, NEMA 4X with OmniSite Monitoring System, floats and level transducer, 1 day programming & training incl.	1	Ea	$17,750	$17,750
27	24" SS Mounting Legs	0	LS	$1,800	$0
28	Soft Start Motor Starters	0	LS	$3,120	$0
29	Start Up assistance by Flygt Technician	1	LS	$1,338	$1,338
30	Freight for Pumps & Accessories	1	LS	$2,012	$2,012
31	Spare Pump, Incl. Testing & Freight (Optional)	0	Ea	$19,900	$0
32	Pump System Installation	1	LS	$5,000	$5,000
	Piping				
33	- 6" CL53 DI Pipe	54	LF	$85	$4,590
34	- 6" Flanged 45 Fittings	4	Ea	$425	$1,700
35	- 6" Flg. 90 Elbow	3	Ea	$450	$1,350
36	- 6" Flg. Tee	1	Ea	$860	$860
37	- 6"x10" Flg. Reducer	1	Ea	$660	$660
38	- 6" Flg. Check Valve	2	Ea	$2,125	$4,250
39	- 6" Flg. RW Plug Valve	2	Ea	$1,525	$3,050
40	- 6" Adapter Flg./Thrd. Flg.	18	Ea	$140	$2,520
41	- 6" Dresser Style 38 Sleeve Coupling	2	Ea	$975	$1,950
42	6" Mag Meter, wafer body w/ transmitter	1	Ea	$4,300	$4,300
43	Pipe Hangers	2	Ea	$100	$200
44	Painting pipe & fittings, primer & 2 coats epoxy	60	LF	$4	$210
45	Demolish half of existing wet well top slab	30	CF	$65	$1,950
46	New Double Leaf Aluminum Access Hatch	0	Ea	$1,700	$0
47	Reinforced Concrete Top (precast)	1	LS	$1,300	$1,300
48	Bypass Pumping @ 750 GPM, 4" w/diesel motor	2	Week	$4,520	$9,040
49	Masonry waterproof sealant	1	LS	$190	$190
				Subtotal	**$140,983**
				20% Contingency	$28,197
				ESTIMATED TOTAL TOWN COST	**$169,179**
				ROUNDED TOWN COST	**$169,200**
CONTACT E - BASE BID					
1	Electrical conduit & wiring - Building	1	LS	$15,000	$15,000
2	Pumping System Electric and Controls	1	Ea	$15,000	$15,000
				Subtotal	**$30,000**
				20% Contingency	$6,000
				Allowance	$15,000
				ESTIMATED TOTAL CONTRACT E COST	**$51,000**

Summerville Wastewater Pump Station Resiliency Improvements - MO-03 and 09

2021 Construction Cost Estimate

				ROUNDED CONTRACT E COST	**$51,000**
GAS SERVICE (IF NEEDED - UPDATE ESTIMATE)					
1	**Gas Service Modifications**	1	LS	$5,000	$5,000
				ESTIMATED TOTAL PROJECT COST	**$229,739**
				ROUNDED PROJECT COST	**$230,000**

APPENDIX C – FLOODPLAIN MODELING REPORT

TECHNICAL MEMO

Project name	EAST SIDE GENESEE SHORELINE RESILIENCY IMPROVEMENTS
Project no.	1940100197
Client	City of Rochester, New York
Subject	Genesee River Floodplain Modeling
Appendices	Appendix A – H&H Modeling
Prepared by	Kadir Goz
Checked by	Ahintha H Kandamby, Ph.D., PE., CFM
	Shaun B. Gannon, P.E., D.WRE, P.H., CFM
Reviewed by	Michael E. Manning, PE

Date January 28, 2021

Ramboll
333 West Washington Street
Syracuse, NY 13202
USA

T 315-956-6100
F 315-463-7554
https://ramboll.com

1 Floodplain Modeling

The City of Rochester has retained Ramboll to conduct an evaluation of proposed improvements to the east side of the Genesee River in Rochester, New York, near the river's mouth at Lake Ontario. The project area includes an approximately 975 foot stretch of Genesee River shoreline at the end of St. Paul Boulevard. Figure 1 displays the extent of the study area.

Figure 1. Study area, Genesee River, Rochester, NY.

The shoreline consists of the Monroe County Sheriff Marine Headquarters, New York State Department of Environmental Conservation (NYSDEC) Fishing Access, City of Rochester property, Town of Irondequoit Wastewater Pumping Station (WWPS), United States Coast Guard and associated facilities along with a limited number of tax parcels owned by other businesses and parties.

This portion of land has been subject to repeated flooding and property damage in recent years, including during the 2017 and 2019 Lake Ontario and the St. Lawrence River System high-water levels events, and will remain threatened by future high-water events if resiliency initiatives are not implemented.

Ramboll developed a one-dimensional (1-D) hydraulic and hydrologic (H&H) model for the study area, extending from Turning Point Park downstream to the

confluence with Lake Ontario, using publicly available data, select channel survey, the effective Federal Emergency Management Agency (FEMA) Flood Insurance Study (FIS) completed in August 2008 (community number 360431), and information developed during the Resiliency and Economic Development Initiative (REDI) project in 2019. Floodplain analysis was conducted within the study area to evaluate if the project could achieve the desired shoreline and adjacent infrastructure protection while having no adverse impact on current base flood elevations in the area.

Widely accepted H&H study methods were used to determine and evaluate flood hazard data. Flood events of a magnitude which are expected to be equaled or exceeded once on average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management, and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equaled or exceeded during a given year. Although the recurrence interval represents the long-term average period between floods of a specific magnitude, rare floods could occur at short intervals, or even within the same year. The risk of experiencing a rare flood increases when periods greater than one year are considered. The analyses reported herein reflect flooding potentials based on conditions existing in the county at the time of completion of this study (FEMA 2008). The following describes the models and their development, and how the results compared to the effective FIS for the City of Rochester, NY.

Ramboll followed the framework described in the FEMA MT-2 process to evaluate pre- and post-project conditions. This process was chosen because: 1) the methodologies allow for clear documentation and evaluation of the flood conditions, accounting for changes in the floodplain over time, and 2) the methodology allows for a direct comparison to the effective FIS. Models were executed using the United States Army Corps of Engineers (USACE) Hydrologic Engineering Center's River Analysis System (HEC-RAS) version 5.0.7 software. The HEC-RAS computer program is considered to be the industry standard for riverine flood analysis and is used to compute water surface profiles for 1-D, 2-D, steady-state, or time-varied flow (USACE 2016).

The FEMA MT-2 process includes three models (FEMA 2018a) as follows:

1. ***Duplicate Effective Model***, which requires the Effective FIS Model to be executed in the current version of the model software, with differences documented and explained.
2. ***Corrected Effective (Pre-Project) Model***, which includes revisions to the Duplicate Effective Model for noted errors and changes in the watershed since the Effective FIS Model was developed.
3. ***Post-Project Model***, which represents the conditions after the proposed project is constructed.

1.1 Duplicate Effective Model

The Genesee River effective FEMA H&H computer model was completed in March of 1977 and is a non-georeferenced 1-D steady state HEC-RAS model converted from HEC-2 data input files, also referred to as the ***Duplicate Model***. The model domain extends from Turning Point Park at the downstream end to the confluence with Lake Ontario at the downstream end. The river reach is approximately 9,500 feet (1.8 miles) long and includes 17 cross sections and 1 hydraulic structure (Pattonwood Drive bridge). The peak discharge data used in all three models are shown in Table 1.

Table 1. Effective FEMA FIS peak discharge.

Annual Chance Flood Event	Peak Discharge (cfs)
10-percent	23,000
2-percent	29,000
1-percent	32,000
0.2-percent	39,000

The ***Duplicate Effective Model*** was developed by geo-referencing the stream centerline and cross-sections from the ***Duplicate Model*** using the Geographic Information Systems (GIS) extension in the HEC-RAS software – known as RAS Mapper – and the effective FEMA Flood Insurance Rate Maps (FIRM), and editing cross-section geometries where water surfaces were not bounded by the data (Figure 2). The stream centerline and cross-section downstream reach lengths for the channel and left and right overbanks in the ***Duplicate Effective Model*** were maintained from the ***Duplicate Model***. The downstream boundary condition for the ***Duplicate Effective Model*** was maintained from the ***Duplicate Model*** and set to the known water surface elevation of EL 247.65-ft NGVD29 at the confluence with Lake Ontario for each modeled discharge at the 10-, 2-, 1- and 0.2-percent annual chance flood event (ACE). This was done to demonstrate that the 1-D ***Duplicate Effective Model*** domain could accurately reproduce the ***Duplicate Model***. The purpose of developing the 1-D ***Duplicate Effective Model*** was to compare the results within the study area directly to the ***Corrected Effective (Pre-Project)*** and ***Post-Project Models***.

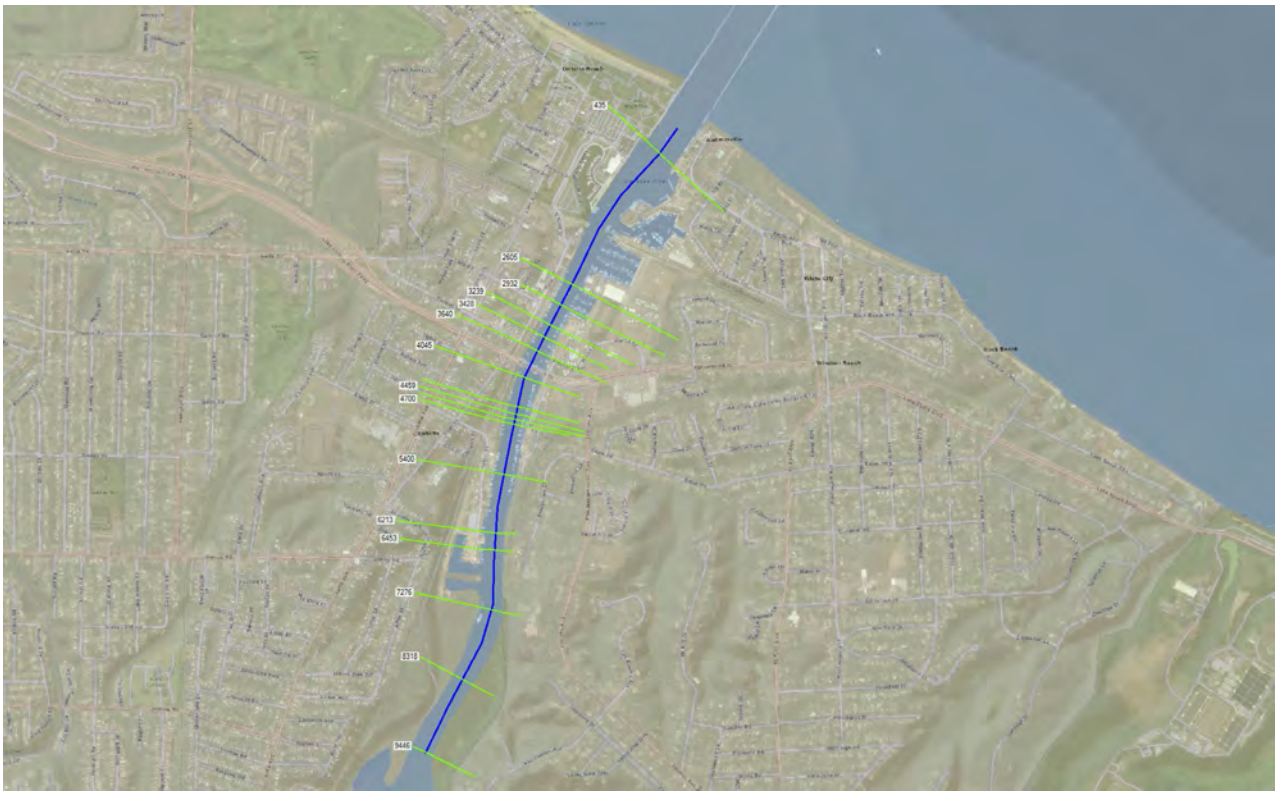


Figure 2. ***Duplicate Effective Model*** cross-sections.

1.2 Corrected Effective (Pre-Project) Model

Given the objective of evaluating the impacts of the proposed project, the ***Corrected Effective*** and ***Existing Conditions (Pre-Project) Models*** were developed as one model. The following changes to the ***Duplicate Effective Model*** geometry were made to create the ***Corrected Effective Model***:

1. Cross sections in the ***Duplicate Effective Model*** did not include the entire floodplain width, so cross section domains were widened to include the full effective floodplain area available for Genesee River floodwaters.
2. Bridge structure locations and geometry data were updated using GIS, orthoimagery, and available structural drawings.
3. A vertical datum conversion from NGVD29 to NAVD88 was applied to the cross-sectional geometry using the National Oceanic and Atmospheric Administration (NOAA) National Geodetic Survey (NGS) North American Vertical Datum Conversion (VERTCON) tool (NGS 2019). A conversion factor of 0.65 feet was used. For example, EL 247.65-ft NGVD29 is converted to EL 247-ft NAVD88.
4. Stream centerline, cross-sections and bank lines were then exported from HEC-RAS to the ESRI ArcMap 10.7 GIS software.
5. Using the HEC-GeoRAS extension in ArcMap, LiDAR DEM and NLCD land cover data were obtained and used to develop updated terrain profiles for overbank areas, stream centerline and cross-section downstream reach lengths for the channel and left and right overbanks, flow paths and Manning's n values for land use were assigned.
6. The stream centerline, cross-sections, bank lines, flow paths, and land use data were then imported back into HEC-RAS where a 1-D steady flow simulation was performed using the effective FEMA FIS peak discharges and the same downstream boundary conditions as the ***Duplicate Effective Model***.

To more precisely simulate the flood risk within the project site, updated 2017 1-meter LiDAR (light detection and ranging) digital elevation model (DEM) (MCDES 2017), U.S. Geological Survey (USGS) 2016 National Land Cover Database (NLCD) land cover (USGS 2016) and hydraulic structure data (NYSDOT 2019) and stillwater elevations plus wave run-up influences (USACE 1988) were incorporated into the ***Corrected Effective Model***.

The ***Corrected Effective Model*** simulated water surface elevations (WSELs) differed significantly from the ***Duplicate*** and ***Duplicate Effective Models***. The differences can be attributed to a number of factors, including:

- Significant changes in land cover and land use in the Genesee River watershed, including development upstream of the project site, removal of the CSX Transportation, Inc. railroad bridge crossing and pier, and replacement of the Pattonwood Drive bridge;
- Advancements in hydraulic and hydrologic understanding and modeling since the effective FEMA 1977 study (HEC-2 versus HEC-RAS v5.0.7);
- The different downstream boundary conditions of the ***Duplicate/Duplicate Effective Models*** and ***Corrected Effective Model*** where the ***Duplicate/Duplicate Effective Models*** do not account for the stillwater elevation and backwater influences of Lake Ontario.

The ***Corrected Effective Model*** simulation results were then compared to the effective FEMA FIRMs for the project area to assess the accuracy of the model output (Figure 3). Based on this assessment, the ***Corrected Effective Model*** output was determined to accurately represent base flood elevations when compared to the effective FIRMs.

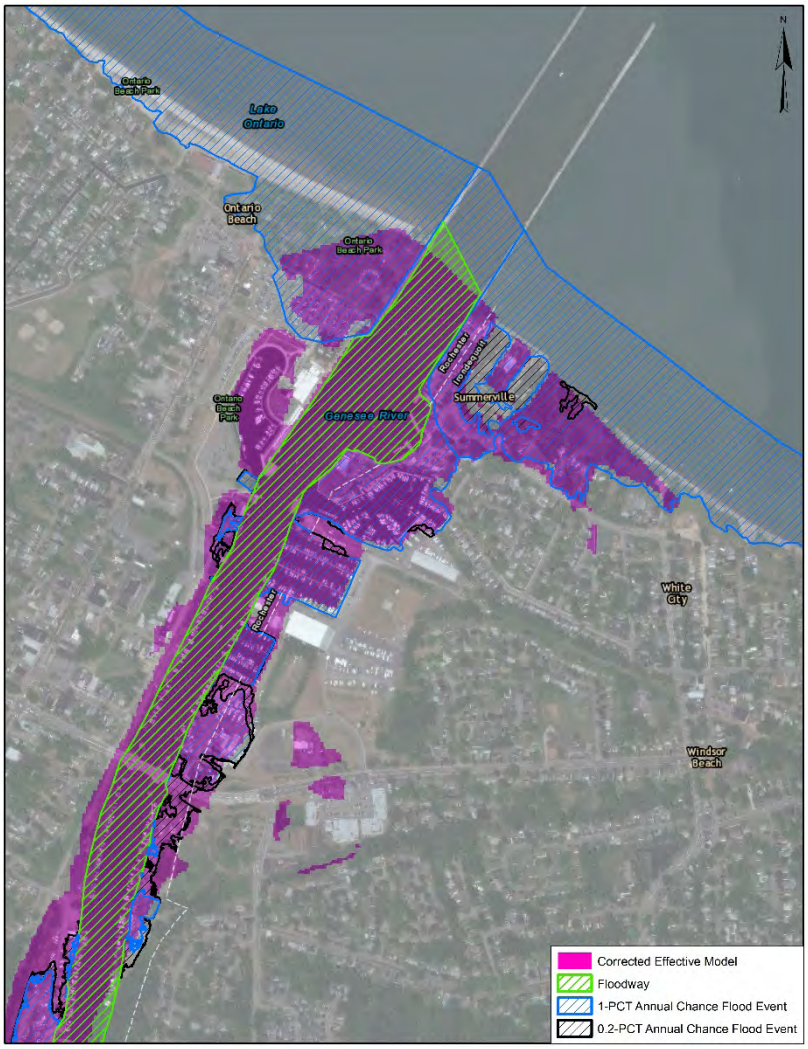


Figure 3. Graphic overlay of the ***Corrected Effective Model*** simulation results for the 1-percent ACE with the effective FEMA FIRM.

1.3 Post-Project Conditions Model

In accordance with the FEMA MT-2 process, the ***Post-Project Conditions Model*** is the ***Corrected Effective Model*** modified to reflect the proposed improvements to the St. Paul Terminus, which is located on the east side of the Genesee River. The proposed improvements include increasing the elevation of the top of the east side retaining wall from EL 250.7-feet NAVD88 to EL 253.0-feet NAVD88.

The WSELs through the proposed project site for the 1-percent ACE for each model and simulation run are summarized in Table 2. Figure 4 displays the 1-D modeled WSEL), and Figure 5 displays the WSEL profile plots for the ***Corrected Effective*** (left) and ***Post-Project*** (right) ***Models***.

Table 2 indicates no rise from the ***Corrected Effective*** to the and ***Post-Project Model***. Therefore, the ***Post-Project Model*** demonstrates the required no-rise condition according to FEMA regulations for building within the floodway.

This floodplain analysis demonstrates that the proposed shoreline improvements should not have an adverse effect on base flood elevations within the study domain while still achieving the desired flood protection. The detailed results and model output for this analysis are contained within Appendix A.

Table 2. Results of 1-percent ACE WSELs for each model and simulation run.

Cross Section ID	Duplicate (ft NAVD88)	Duplicate Effective (ft NAVD88)	Corrected Effective (Pre-Project) (ft NAVD88)	Post-Project (ft NAVD88)
991	247.0*	247.0*	251.5	251.5
435 / 395	247.0	247.0	251.4	251.4

*The ***Duplicate*** and ***Duplicate Effective Models*** did not contain a cross-section at or near river station 991 so these values were interpolated from the HEC-RAS WSEL profile plots for each model.

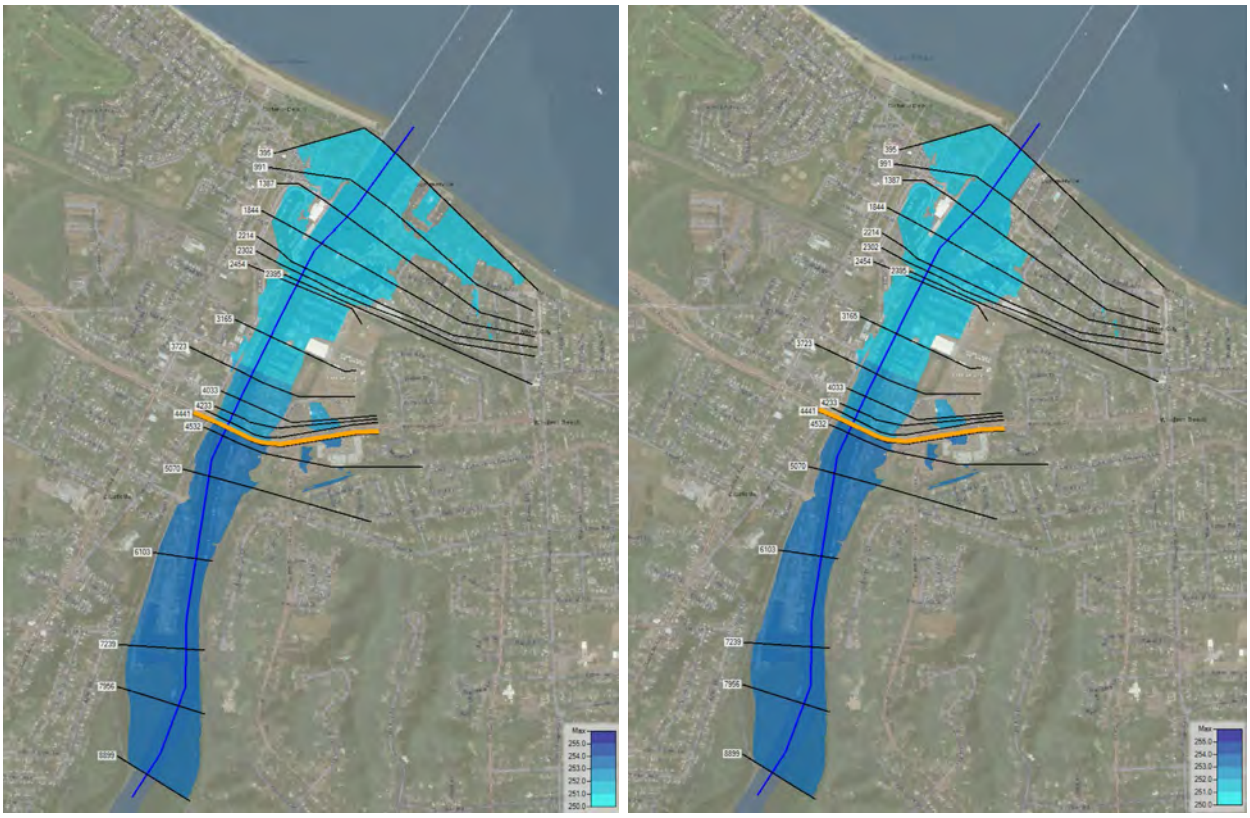


Figure 4. ***Corrected Effective*** (left) and ***Post-Project*** (right) models 1-percent ACE WSELs.

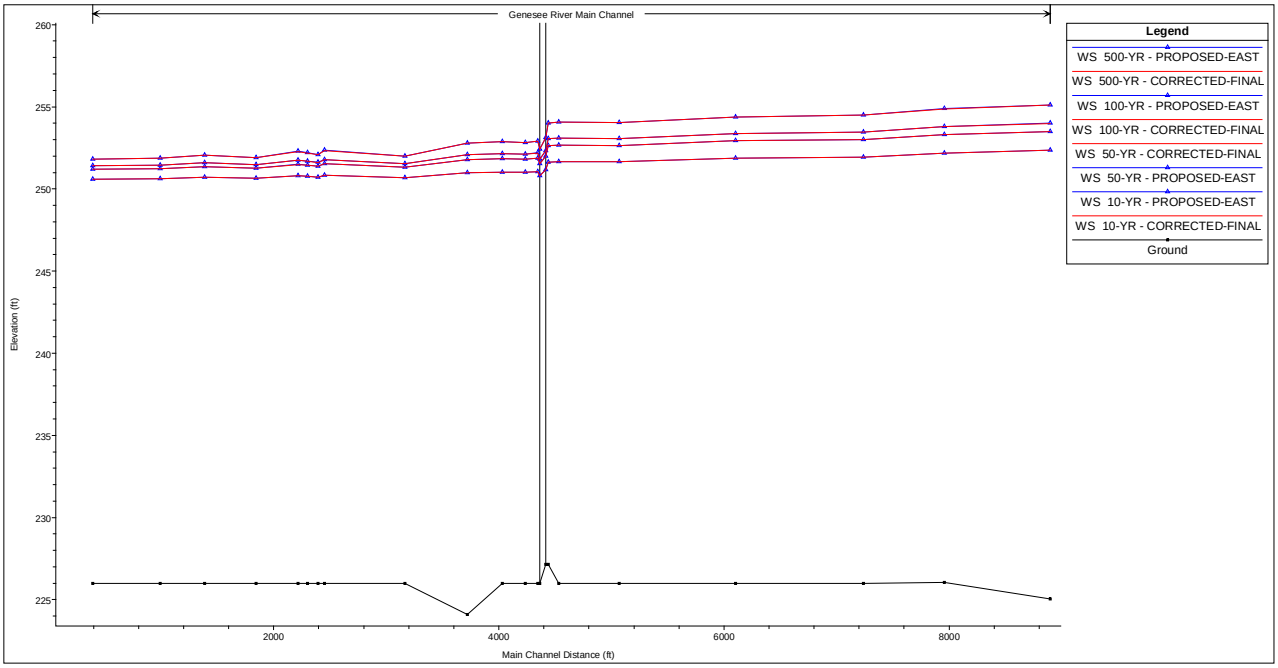


Figure 5. ***Corrected Effective*** and ***Post-Project Models*** WSEL profile plots for 10-, 2-, 1-, and 0.2-percent ACE.

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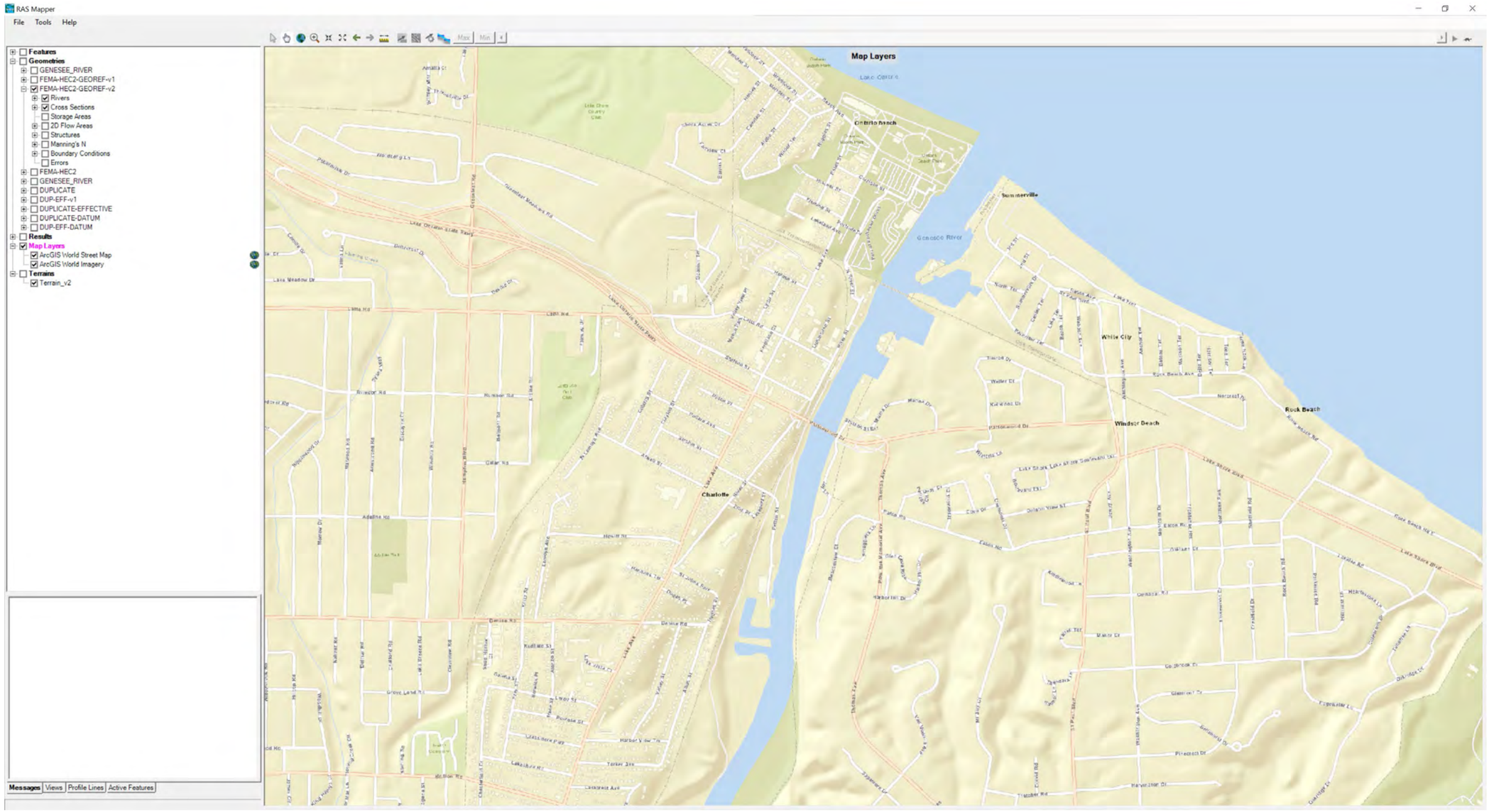
APPENDIX A

H&H Modeling

Street Map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FEMA-HEC2-GEOREF-v2
Rivers
Cross Sections
Storage Areas
2D Flow Areas
Structures
Manning's N
Boundary Conditions
Errors
FEMA-HEC2
GENESEE_RIVER
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DUPLICATE-EFFECTIVE
DUPLICATE-DATUM
DUP-EFF-DATUM
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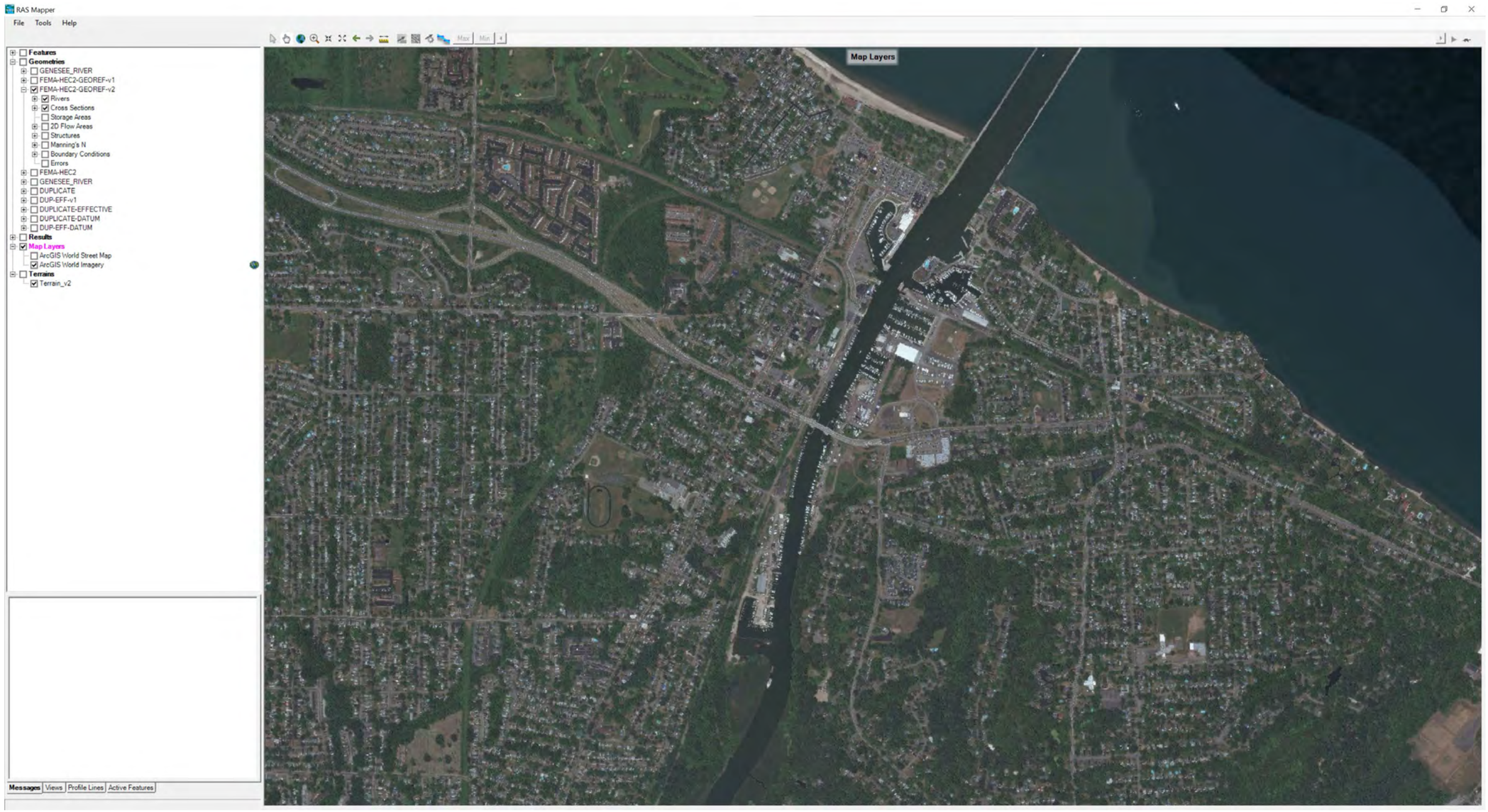
Map Layers
ArcGIS World Street Map
ArcGIS World Imagery
Terrains
Terrain_v2
Messages
Views
Profile Lines
Active Features
Map Layers
Ontario Beach
Summerville
Genesee River
White City
Windsor Beach
Rock Beach
Charlotte

HEC-RAS 1-D H and H Model
Genesee River, Rochester, NY

Orthoimagery



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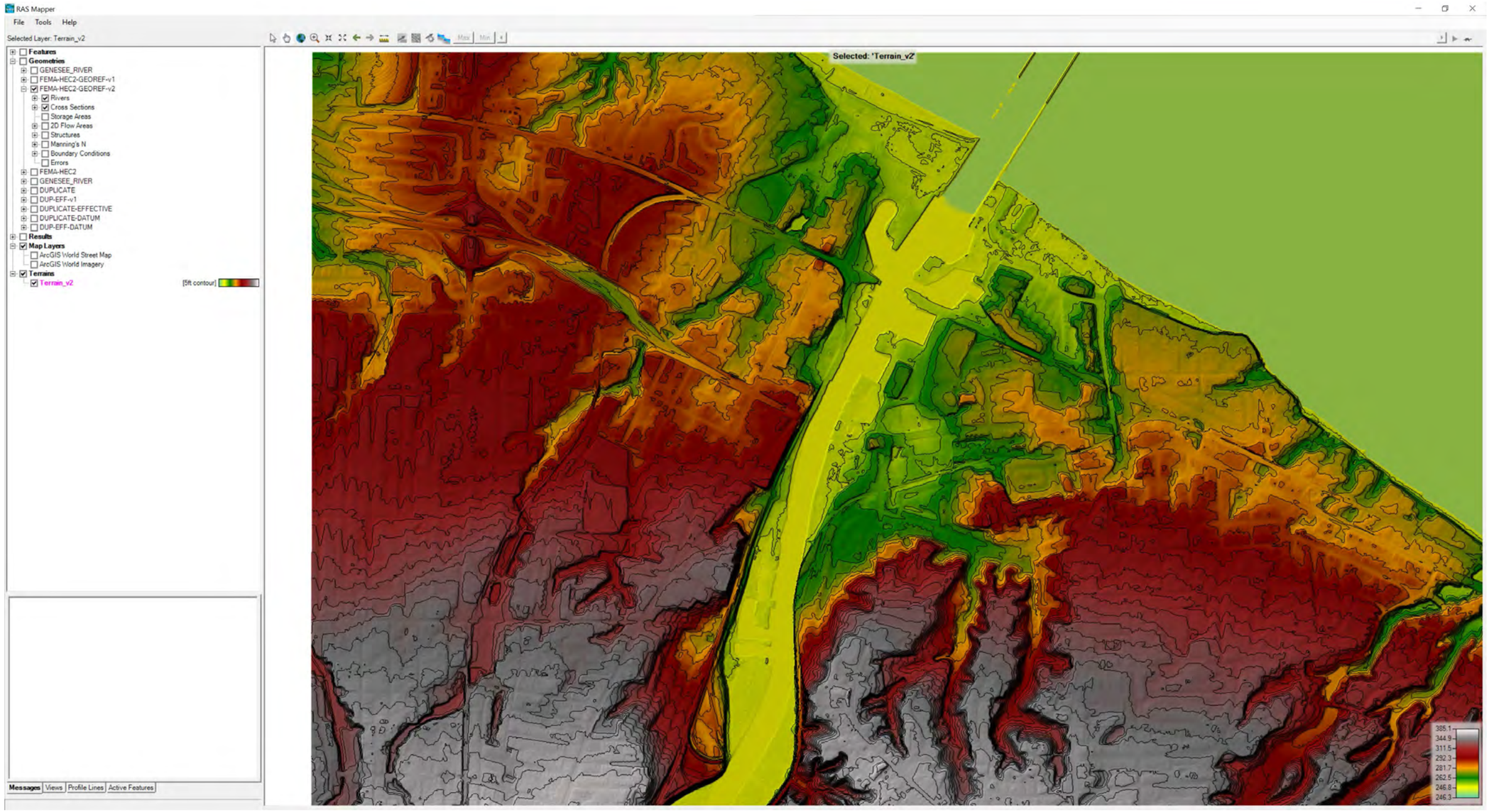
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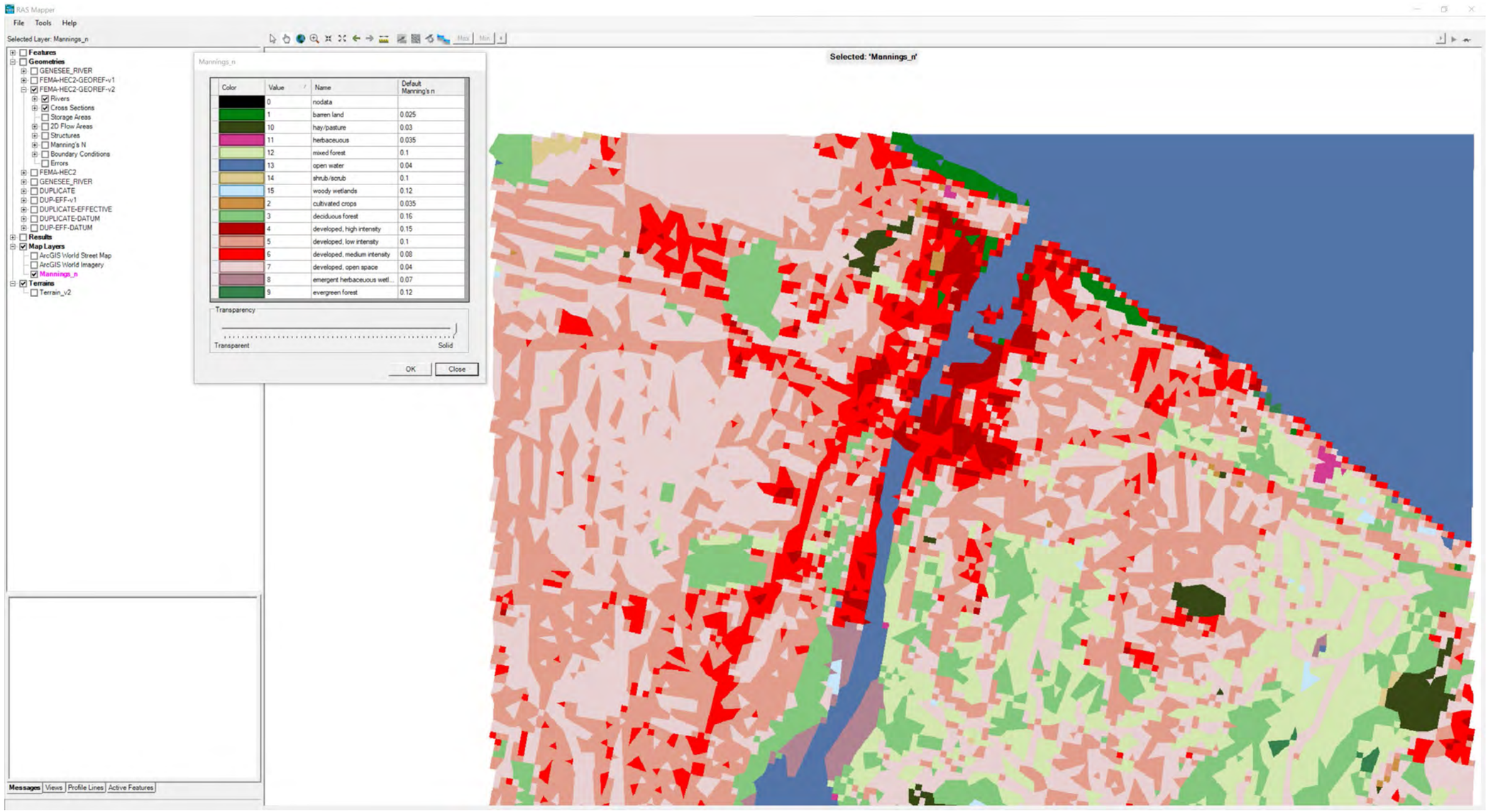
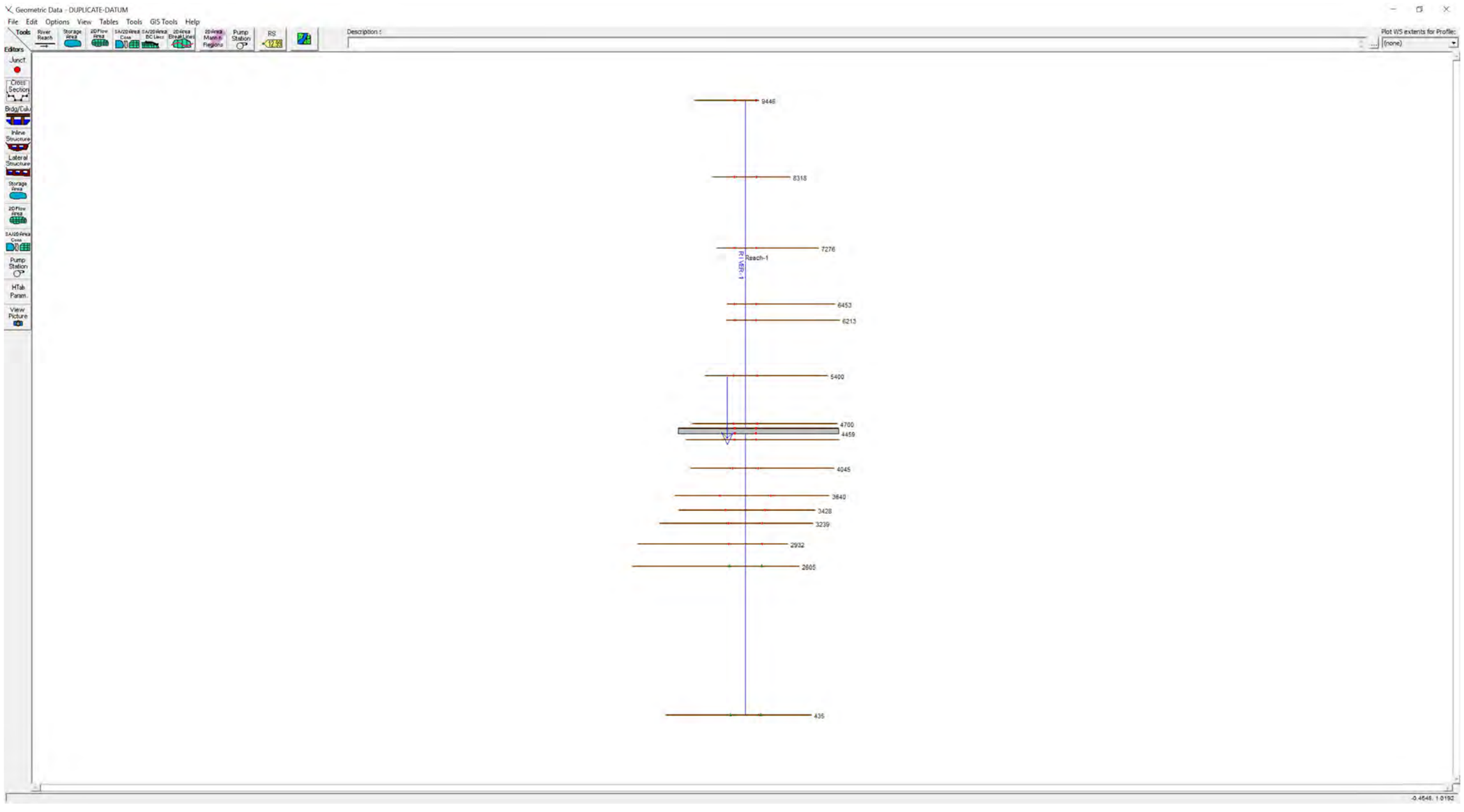
262.5
246.8
246.3

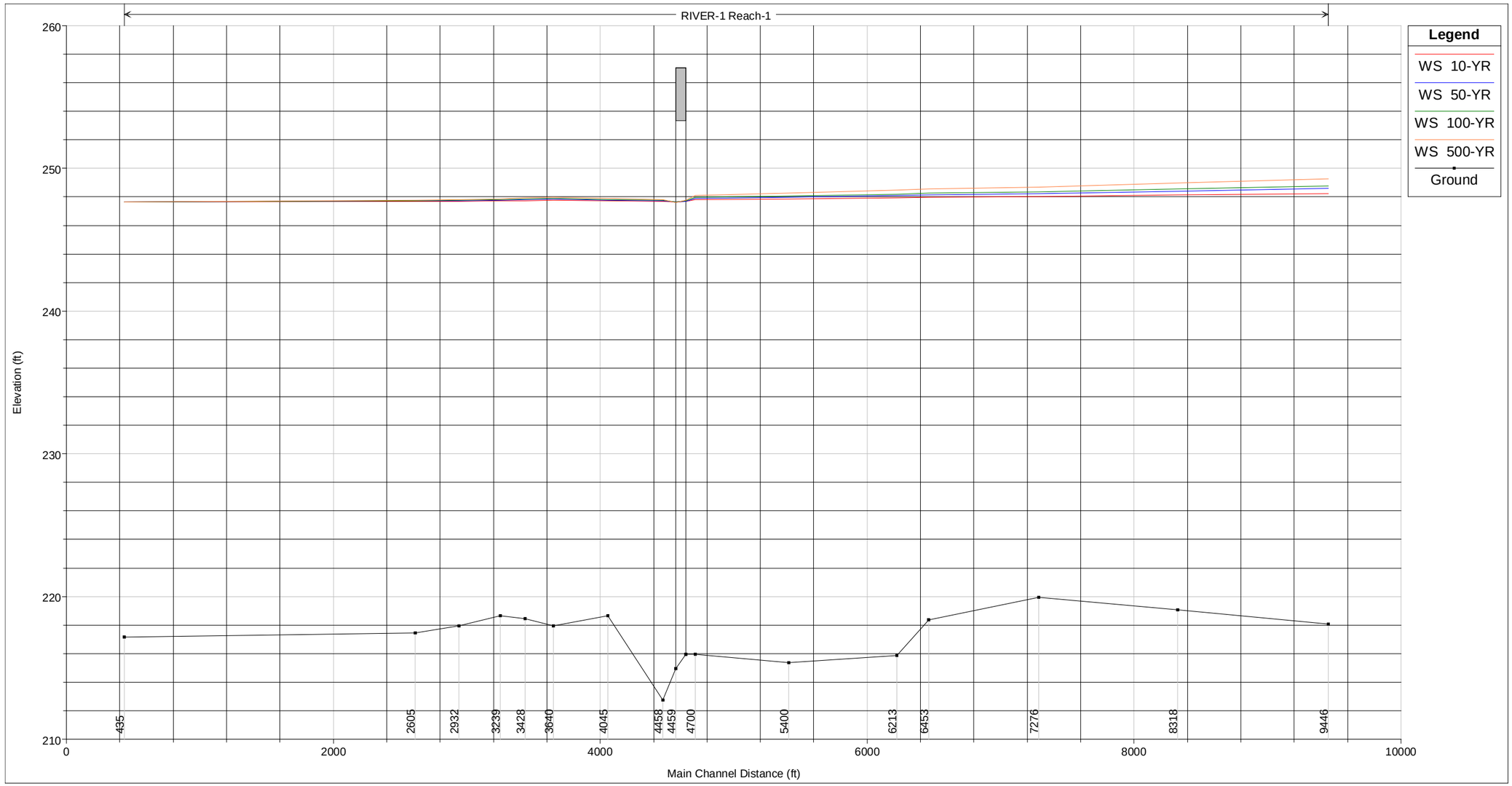
Land Use/Land Cover



Geometry Plot



Profile Plot



Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach-1	435	10-YR	23000	217.15	247	225.53	247.06	0.000021	2.04	11293.85	2098.6	0.07
Reach-1	435	50-YR	29000	217.15	247	226.43	247.1	0.000034	2.57	11293.85	2098.6	0.09
Reach-1	435	100-YR	32000	217.15	247	226.82	247.12	0.000041	2.83	11293.85	2098.6	0.1
Reach-1	435	500-YR	39000	217.15	247	227.73	247.19	0.000061	3.45	11293.85	2098.6	0.12
Reach-1	2605	10-YR	23000	217.45	247.05	226.2	247.12	0.000032	2.24	10249.85	1166.58	0.09
Reach-1	2605	50-YR	29000	217.45	247.07	227.37	247.2	0.000051	2.83	10263.09	1167.18	0.11
Reach-1	2605	100-YR	32000	217.45	247.09	227.89	247.24	0.000062	3.12	10270.86	1167.53	0.12
Reach-1	2605	500-YR	39000	217.45	247.13	229.1	247.36	0.000092	3.79	10292.02	1168.48	0.14
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Reach-1	2932	50-YR	29000	217.95	247.1		247.21	0.000047	2.76	10496.94	488.97	0.11
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Reach-1	2932	500-YR	39000	217.95	247.17		247.39	0.000085	3.7	10535.09	488.98	0.14
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Reach-1	3428	50-YR	29000	218.45	247.17		247.24	0.000025	2.13	13617.18	575.06	0.08
Reach-1	3428	100-YR	32000	218.45	247.2		247.29	0.00003	2.35	13638.19	575.06	0.08
Reach-1	3428	500-YR	39000	218.45	247.3		247.43	0.000044	2.85	13695.21	575.06	0.1
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Reach-1	4045	100-YR	32000	218.65	247.17		247.35	0.000064	3.45	9283.03	385.07	0.12
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Reach-1	4459	50-YR	29000	214.95	246.99		247.49	0.000266	5.7	5086.62	247.31	0.22
Reach-1	4459	100-YR	32000	214.95	246.99		247.6	0.000324	6.29	5085.87	247.3	0.24
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Reach-1	4545.5		Bridge								
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Reach-1	9446	50-YR	29000	218.05	248.03		248.43	0.000192	5.07	5723.4	349.2	0.21
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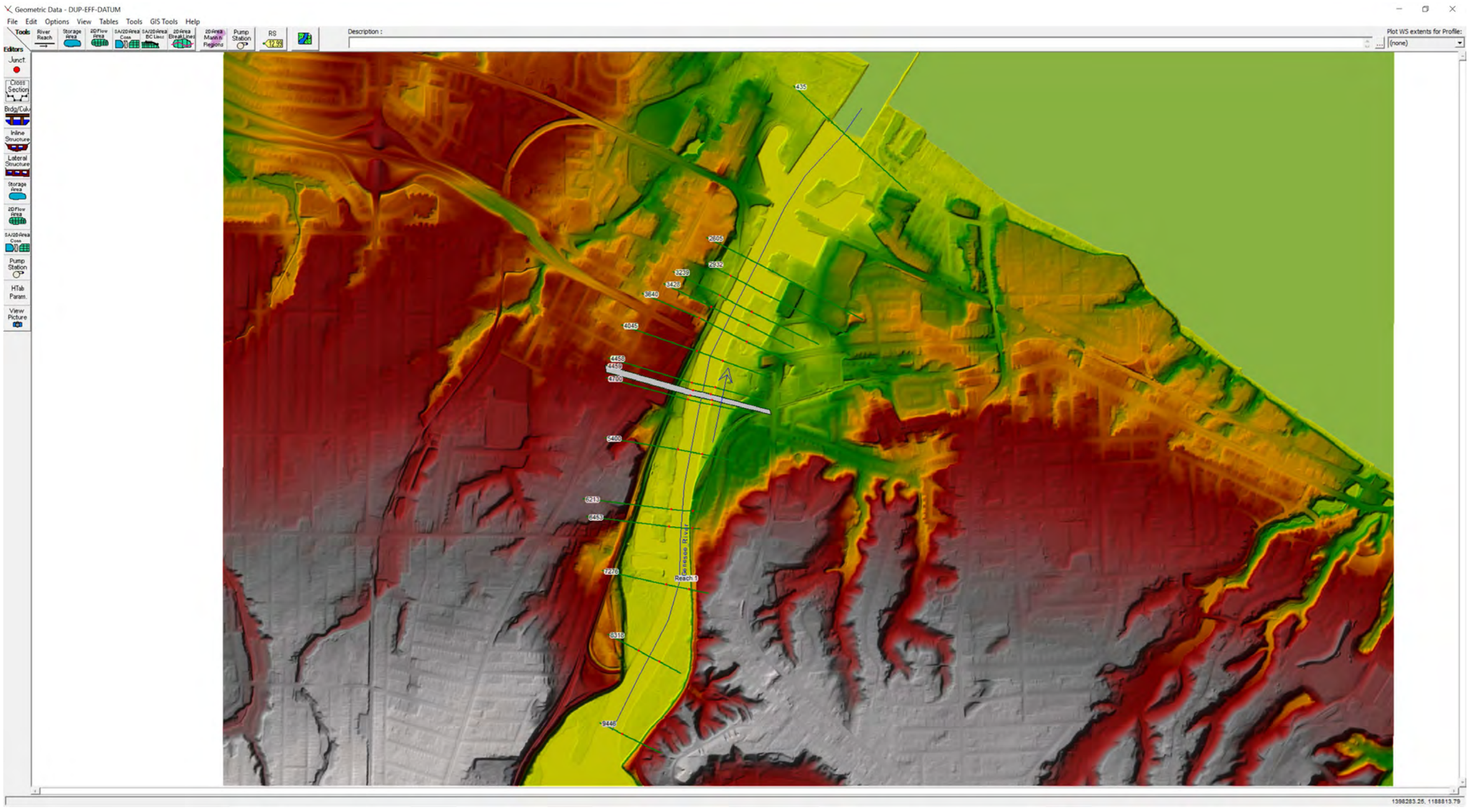
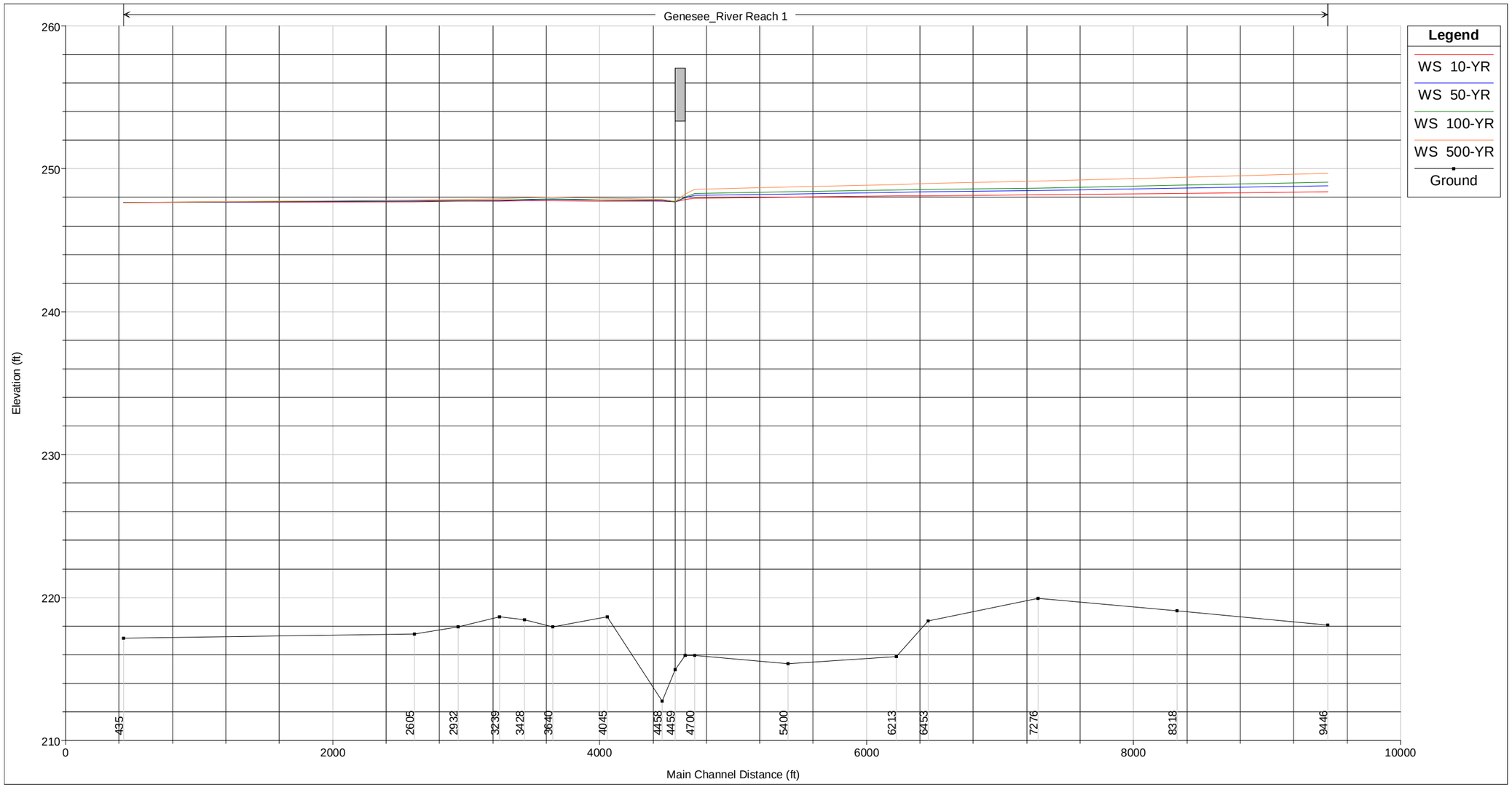
Geometry Plot



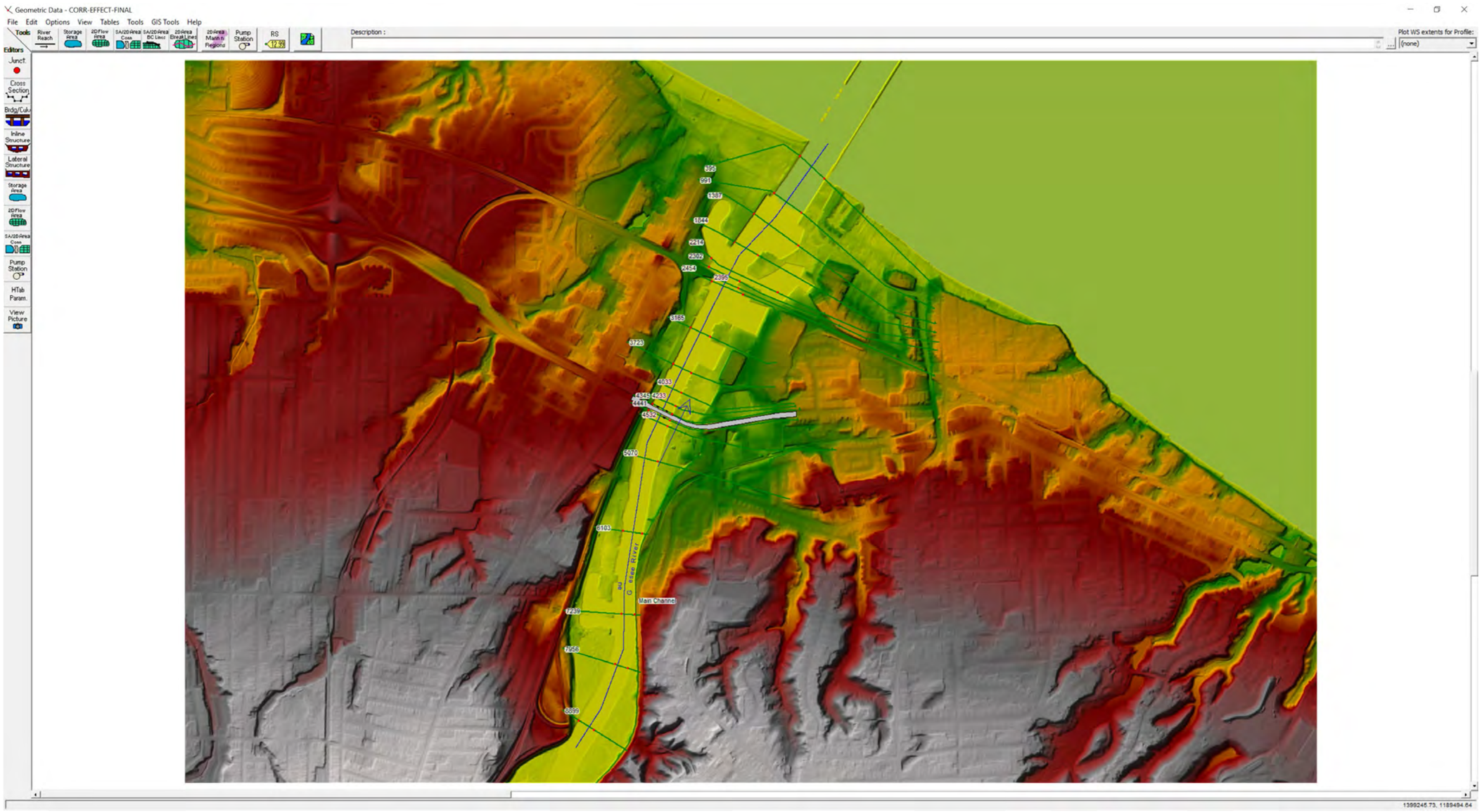
Profile Plot



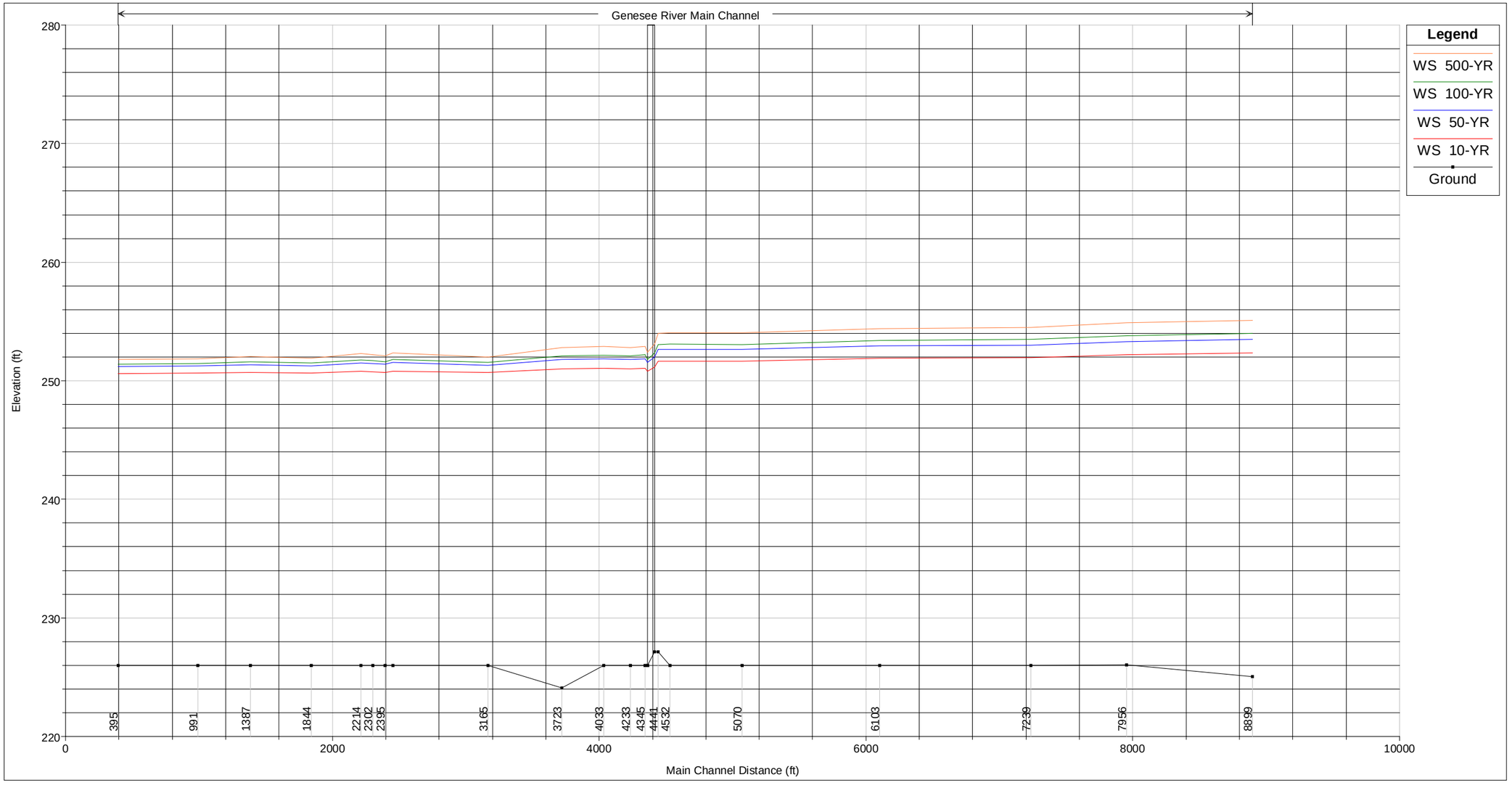
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach 1	435	10-YR	23000	217.15	247	225.52	247.06	0.000035	2.04	11294.55	2097.65	0.07
Reach 1	435	50-YR	29000	217.15	247	226.43	247.1	0.000055	2.57	11294.55	2097.65	0.09
Reach 1	435	100-YR	32000	217.15	247	226.84	247.12	0.000067	2.83	11294.55	2097.65	0.1
Reach 1	435	500-YR	39000	217.15	247	227.73	247.19	0.000099	3.45	11294.55	2097.65	0.12
Reach 1	2605	10-YR	23000	217.45	247.06	226.19	247.14	0.000032	2.24	10257.75	1166.44	0.09
Reach 1	2605	50-YR	29000	217.45	247.1	227.36	247.22	0.000051	2.82	10275.6	1167.25	0.11
Reach 1	2605	100-YR	32000	217.45	247.12	227.92	247.27	0.000062	3.11	10286.07	1167.72	0.12
Reach 1	2605	500-YR	39000	217.45	247.18	229.09	247.4	0.000091	3.78	10314.49	1169	0.14
Reach 1	2932	10-YR	23000	217.95	247.08		247.15	0.00003	2.19	10487.49	488.97	0.08
Reach 1	2932	50-YR	29000	217.95	247.12		247.24	0.000047	2.76	10509.64	488.97	0.1
Reach 1	2932	100-YR	32000	217.95	247.15		247.29	0.000057	3.04	10522.62	488.98	0.12
Reach 1	2932	500-YR	39000	217.95	247.22		247.43	0.000084	3.7	10557.84	488.98	0.14
Reach 1	3239	10-YR	23000	218.65	247.1		247.16	0.000025	2.03	11312.42	500.08	0.08
Reach 1	3239	50-YR	29000	218.65	247.15		247.26	0.000039	2.56	11340.93	500.08	0.09
Reach 1	3239	100-YR	32000	218.65	247.19		247.31	0.000048	2.82	11357.62	500.08	0.1
Reach 1	3239	500-YR	39000	218.65	247.28		247.46	0.00007	3.42	11402.87	500.08	0.13
Reach 1	3428	10-YR	23000	218.45	247.12		247.17	0.000016	1.69	13590.69	575.06	0.06
Reach 1	3428	50-YR	29000	218.45	247.19		247.26	0.000024	2.13	13632	575.06	0.08
Reach 1	3428	100-YR	32000	218.45	247.24		247.32	0.00003	2.34	13656.15	575.06	0.08
Reach 1	3428	500-YR	39000	218.45	247.35		247.48	0.000043	2.84	13721.58	575.06	0.1
Reach 1	3640	10-YR	23000	217.95	247.15		247.17	0.000009	1.29	17785.2	743.07	0.05
Reach 1	3640	50-YR	29000	217.95	247.23		247.27	0.000014	1.62	17848.44	743.07	0.06
Reach 1	3640	100-YR	32000	217.95	247.28		247.33	0.000017	1.79	17885.4	743.07	0.06
Reach 1	3640	500-YR	39000	217.95	247.41		247.49	0.000025	2.17	17985.33	743.07	0.08
Reach 1	4045	10-YR	23000	218.65	247.1		247.2	0.000033	2.48	9258.35	385.07	0.09
Reach 1	4045	50-YR	29000	218.65	247.16		247.31	0.000052	3.12	9281.53	385.07	0.11
Reach 1	4045	100-YR	32000	218.65	247.2		247.38	0.000063	3.44	9295.08	385.07	0.12
Reach 1	4045	500-YR	39000	218.65	247.29		247.56	0.000093	4.18	9331.79	385.07	0.15
Reach 1	4458	10-YR	23000	212.75	247.08		247.24	0.000108	3.15	7300	300.69	0.11
Reach 1	4458	50-YR	29000	212.75	247.13		247.38	0.000171	3.96	7314.83	300.72	0.14
Reach 1	4458	100-YR	32000	212.75	247.16		247.46	0.000207	4.37	7323.5	300.74	0.16
Reach 1	4458	500-YR	39000	212.75	247.24		247.68	0.000305	5.31	7346.93	300.78	0.19
Reach 1	4459	10-YR	23000	214.95	247.03		247.43	0.000347	5.24	5096.87	247.45	0.2
Reach 1	4459	50-YR	29000	214.95	247.05		247.67	0.00055	6.6	5101.09	247.51	0.26
Reach 1	4459	100-YR	32000	214.95	247.06		247.82	0.000668	7.28	5103.53	247.54	0.28
Reach 1	4459	500-YR	39000	214.95	247.08		248.21	0.000989	8.86	5110.03	247.63	0.35

Reach 1	4545.5		Bridge								
Reach 1	4632	10-YR	23000	215.95	247.21	229.62	247.5	0.000224	4.29	5360.82	249.63	0.16
Reach 1	4632	50-YR	29000	215.95	247.35	230.89	247.8	0.000349	5.38	5393.87	250.06	0.2
Reach 1	4632	100-YR	32000	215.95	247.43	231.57	247.97	0.000421	5.91	5413.82	250.31	0.22
Reach 1	4632	500-YR	39000	215.95	247.65	232.91	248.44	0.000607	7.13	5470.24	251.04	0.27
Reach 1	4700	10-YR	23000	215.95	247.33		247.52	0.000148	3.51	6544.29	299.7	0.13
Reach 1	4700	50-YR	29000	215.95	247.53		247.83	0.00023	4.39	6604.4	300.92	0.17
Reach 1	4700	100-YR	32000	215.95	247.65		248.01	0.000276	4.82	6640.34	301.64	0.18
Reach 1	4700	500-YR	39000	215.95	247.98		248.5	0.000393	5.79	6740.65	303.67	0.22
Reach 1	5400	10-YR	23000	215.35	247.41		247.61	0.000103	3.64	6322.18	359.63	0.15
Reach 1	5400	50-YR	29000	215.35	247.65		247.97	0.000157	4.54	6410.01	365.28	0.18
Reach 1	5400	100-YR	32000	215.35	247.79		248.17	0.000187	4.97	6462.55	368.63	0.2
Reach 1	5400	500-YR	39000	215.35	248.18		248.73	0.000259	5.93	6612.8	400.04	0.24
Reach 1	6213	10-YR	23000	215.85	247.48		247.69	0.000092	3.71	6427.47	678.43	0.14
Reach 1	6213	50-YR	29000	215.85	247.76		248.09	0.000139	4.61	6619.08	682.31	0.18
Reach 1	6213	100-YR	32000	215.85	247.93		248.32	0.000165	5.04	6731.76	685.11	0.19
Reach 1	6213	500-YR	39000	215.85	248.37		248.93	0.000228	6.01	7039.37	694.37	0.23
Reach 1	6453	10-YR	23000	218.35	247.51		247.72	0.000094	3.64	6698.37	664.2	0.15
Reach 1	6453	50-YR	29000	218.35	247.81		248.13	0.000143	4.51	6899.15	676.47	0.18
Reach 1	6453	100-YR	32000	218.35	247.99		248.36	0.000169	4.93	7018.14	683.28	0.2
Reach 1	6453	500-YR	39000	218.35	248.46		248.99	0.000231	5.86	7345.21	701.37	0.23
Reach 1	7276	10-YR	23000	219.95	247.58		247.81	0.000118	3.91	6354.74	437.17	0.16
Reach 1	7276	50-YR	29000	219.95	247.91		248.27	0.000177	4.85	6504.16	459.62	0.2
Reach 1	7276	100-YR	32000	219.95	248.1		248.53	0.000208	5.29	6594.06	472.61	0.22
Reach 1	7276	500-YR	39000	219.95	248.62		249.22	0.000282	6.27	6846.34	507.29	0.25
Reach 1	8318	10-YR	23000	219.05	247.7		247.94	0.000118	3.93	5856.9	320.49	0.16
Reach 1	8318	50-YR	29000	219.05	248.09		248.45	0.000175	4.85	5983.56	323.32	0.2
Reach 1	8318	100-YR	32000	219.05	248.31		248.75	0.000206	5.29	6056.52	324.94	0.21
Reach 1	8318	500-YR	39000	219.05	248.91		249.51	0.000277	6.24	6250.16	330.71	0.25
Reach 1	9446	10-YR	23000	218.05	247.82		248.08	0.000125	4.07	5655.97	305.21	0.17
Reach 1	9446	50-YR	29000	218.05	248.28		248.66	0.000184	5	5817.14	409.93	0.2
Reach 1	9446	100-YR	32000	218.05	248.53		248.99	0.000215	5.45	5934.23	510.66	0.22
Reach 1	9446	500-YR	39000	218.05	249.2		249.84	0.000284	6.41	6386.2	768.12	0.25

Geometry Plot



Profile Plot

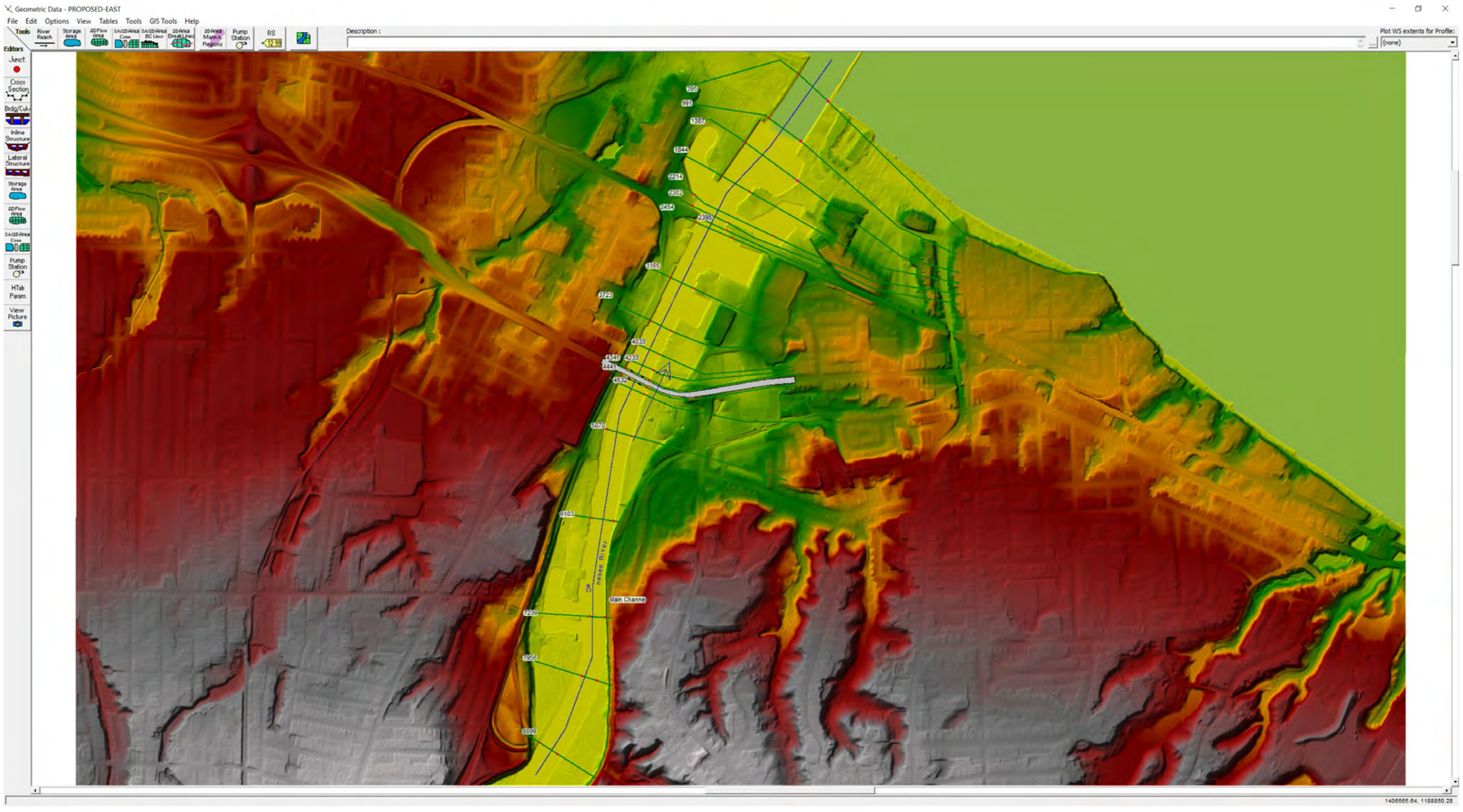


Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Main Channel	395	10-YR	23000	226	250.6	234.38	250.7	0.000051	2.54	10048.57	3110.46	0.1
Main Channel	395	50-YR	29000	226	251.2	235.28	251.35	0.000073	3.09	11063.25	3194.72	0.12
Main Channel	395	100-YR	32000	226	251.4	235.68	251.57	0.000085	3.37	11406.03	3240.51	0.13
Main Channel	395	500-YR	39000	226	251.8	236.58	252.04	0.000118	4	12094.5	3292.83	0.15
Main Channel	991	10-YR	23000	226	250.63	234.38	250.73	0.000051	2.54	10092.02	1736.29	0.1
Main Channel	991	50-YR	29000	226	251.24	235.28	251.39	0.000073	3.09	11350.4	2320.97	0.12
Main Channel	991	100-YR	32000	226	251.45	235.69	251.62	0.000085	3.36	11847.61	2461.04	0.13
Main Channel	991	500-YR	39000	226	251.87	236.58	252.11	0.000117	3.99	12907.73	2606.02	0.15
Main Channel	1387	10-YR	23000	226	250.71	232.99	250.75	0.000021	1.58	15125.11	1074.48	0.06
Main Channel	1387	50-YR	29000	226	251.36	233.8	251.42	0.00003	1.92	15832.35	1170.06	0.08
Main Channel	1387	100-YR	32000	226	251.59	234.16	251.66	0.000035	2.09	16095.64	1235.23	0.08
Main Channel	1387	500-YR	39000	226	252.06	234.93	252.16	0.000048	2.49	16692.53	1526.58	0.1
Main Channel	1844	10-YR	23000	226	250.65	234.88	250.8	0.00007	3.04	7590.3	1527.6	0.12
Main Channel	1844	50-YR	29000	226	251.27	235.83	251.49	0.0001	3.72	7834.49	1617.52	0.14
Main Channel	1844	100-YR	32000	226	251.48	236.27	251.74	0.000118	4.07	7919.34	1654.97	0.16
Main Channel	1844	500-YR	39000	226	251.91	237.26	252.27	0.000164	4.86	8098.31	1750.77	0.19
Main Channel	2214	10-YR	23000	226	250.8	232.41	250.82	0.00001	1.13	21827.7	1308.04	0.05
Main Channel	2214	50-YR	29000	226	251.49	233.14	251.52	0.000014	1.37	22740.2	1336.33	0.05
Main Channel	2214	100-YR	32000	226	251.74	233.47	251.77	0.000016	1.49	23078.96	1347.55	0.06
Main Channel	2214	500-YR	39000	226	252.28	234.17	252.32	0.000022	1.77	23805.84	1391.49	0.07
Main Channel	2302	10-YR	23000	226	250.76	234.37	250.86	0.000047	2.48	9569.26	1079.16	0.1
Main Channel	2302	50-YR	29000	226	251.43	235.27	251.57	0.000066	3	10346.11	1237.97	0.12
Main Channel	2302	100-YR	32000	226	251.68	235.67	251.84	0.000077	3.27	10653.68	1284.45	0.13
Main Channel	2302	500-YR	39000	226	252.19	236.55	252.42	0.000104	3.86	11316.95	1307.75	0.15
Main Channel	2395	10-YR	23000	226	250.72	235.64	250.91	0.00009	3.43	6818.64	472.78	0.14
Main Channel	2395	50-YR	29000	226	251.38	236.67	251.65	0.000128	4.18	7219.11	791.22	0.16
Main Channel	2395	100-YR	32000	226	251.61	237.14	251.93	0.00015	4.55	7412.41	887.52	0.18
Main Channel	2395	500-YR	39000	226	252.09	238.21	252.54	0.000205	5.41	7853.8	945.62	0.21
Main Channel	2454	10-YR	23000	226	250.82		250.92	0.000047	2.48	9614.83	904.03	0.1
Main Channel	2454	50-YR	29000	226	251.53		251.67	0.000066	3.01	10277.2	976.92	0.12
Main Channel	2454	100-YR	32000	226	251.79		251.95	0.000076	3.27	10539.79	1021.13	0.13
Main Channel	2454	500-YR	39000	226	252.34		252.57	0.000103	3.88	11114.69	1046.61	0.15
Main Channel	3165	10-YR	23000	226	250.68	239.04	251.07	0.000276	5.01	4615.57	455.06	0.23
Main Channel	3165	50-YR	29000	226	251.32	240.76	251.89	0.000383	6.06	4841.93	553	0.27
Main Channel	3165	100-YR	32000	226	251.54	241.47	252.21	0.000445	6.59	4928.59	593.36	0.29
Main Channel	3165	500-YR	39000	226	251.99	242.96	252.94	0.000603	7.81	5123.55	673.08	0.34

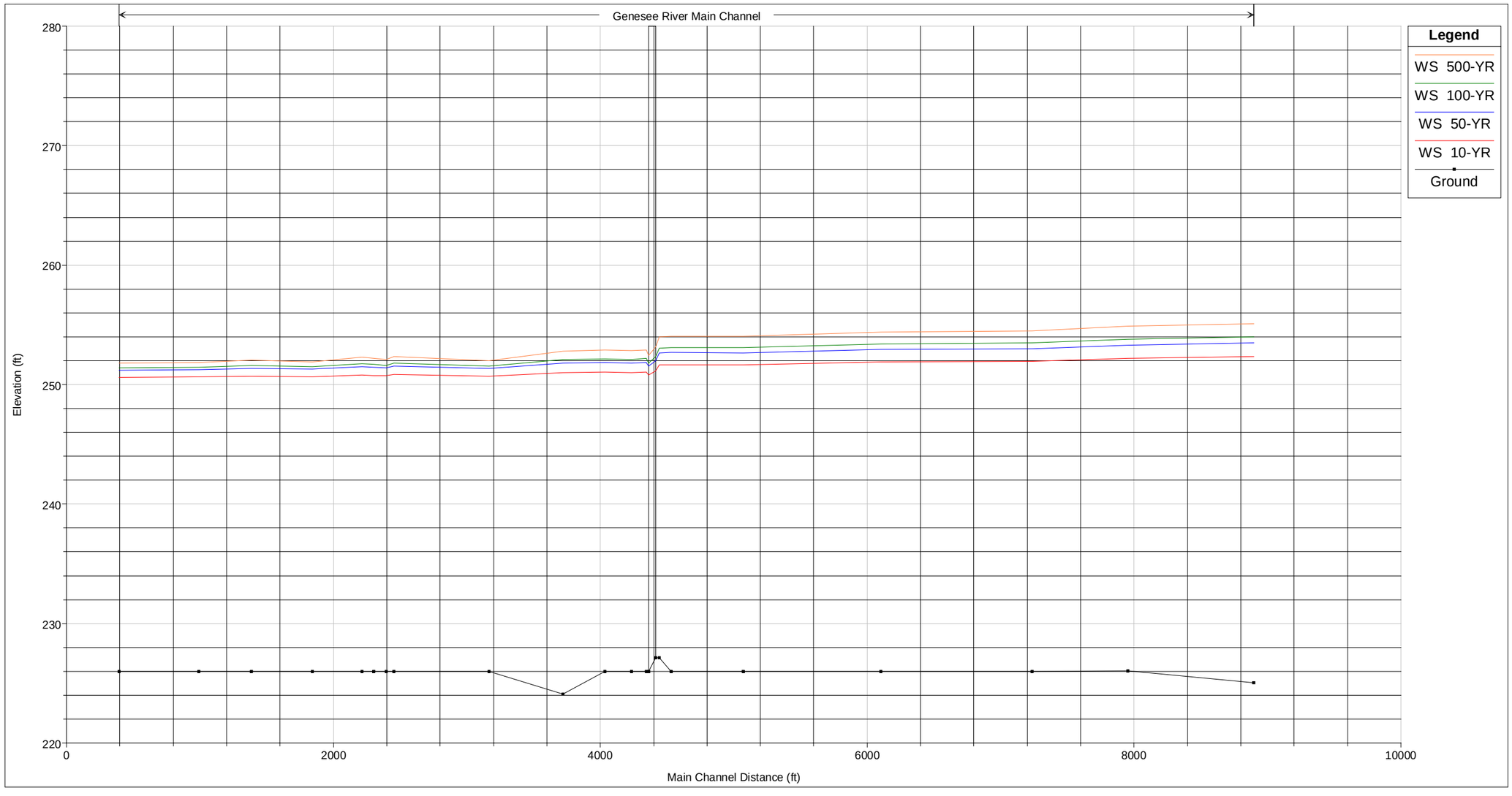
Main Channel	3723	10-YR	22500	224.1	250.99	234.14	251.2	0.000132	3.65	6872.12	645.91	0.14
Main Channel	3723	50-YR	27200	224.1	251.78	235.1	252.06	0.00017	4.23	7402.5	720.43	0.16
Main Channel	3723	100-YR	29500	224.1	252.1	235.53	252.41	0.000189	4.51	7639.88	786.3	0.17
Main Channel	3723	500-YR	34700	224.1	252.8	236.45	253.19	0.000234	5.12	8225.26	873.34	0.19
Main Channel	4033	10-YR	22500	226	251.03	235.64	251.24	0.000143	3.75	7073.23	767.18	0.15
Main Channel	4033	50-YR	27200	226	251.83	236.55	252.11	0.00018	4.31	7674.22	995.43	0.17
Main Channel	4033	100-YR	29500	226	252.15	236.97	252.47	0.000199	4.59	7918.31	1049.62	0.17
Main Channel	4033	500-YR	34700	226	252.87	237.88	253.27	0.000242	5.17	8471.23	1187.84	0.19
Main Channel	4233	10-YR	22500	226	251	239.19	251.3	0.000189	4.37	5677.5	848.74	0.19
Main Channel	4233	50-YR	27200	226	251.8	239.99	252.19	0.000234	5.02	6126.49	1036.83	0.21
Main Channel	4233	100-YR	29500	226	252.12	240.37	252.55	0.000259	5.33	6305.44	1055.73	0.22
Main Channel	4233	500-YR	34700	226	252.82	241.17	253.37	0.000312	6.01	6706.53	1221.21	0.24
Main Channel	4345	10-YR	22500	226	251.06	236.49	251.33	0.0002	4.17	5885.16	665.36	0.16
Main Channel	4345	50-YR	27200	226	251.87	237.36	252.22	0.000256	4.81	6353.05	684.39	0.19
Main Channel	4345	100-YR	29500	226	252.19	237.75	252.59	0.000286	5.12	6540.36	688.73	0.2
Main Channel	4345	500-YR	34700	226	252.91	238.66	253.42	0.000353	5.78	6959.39	939.43	0.22
Main Channel	4400	PATTONWOO Bridge										
Main Channel	4441	10-YR	22500	227.15	251.64	234.2	251.82	0.000132	3.49	6963.31	836.9	0.13
Main Channel	4441	50-YR	27200	227.15	252.63	235.02	252.87	0.000166	4.01	7546.95	934.25	0.15
Main Channel	4441	100-YR	29500	227.15	253.05	235.4	253.33	0.000184	4.26	7796.83	1033.96	0.15
Main Channel	4441	500-YR	34700	227.15	254	236.22	254.35	0.000223	4.78	8367.02	1156.94	0.17
Main Channel	4532	10-YR	22500	226	251.67	236.2	251.84	0.000114	3.31	7357.1	763.1	0.13
Main Channel	4532	50-YR	27200	226	252.67	236.91	252.89	0.00014	3.79	7966.87	881.39	0.14
Main Channel	4532	100-YR	29500	226	253.1	237.25	253.34	0.000153	4.02	8228.84	960.24	0.15
Main Channel	4532	500-YR	34700	226	254.06	237.99	254.37	0.000181	4.5	8831.54	1115.91	0.17
Main Channel	5070	10-YR	22500	226	251.65		251.96	0.000208	4.54	5708.33	727.75	0.2
Main Channel	5070	50-YR	27200	226	252.64		253.04	0.000245	5.12	6437.42	734.26	0.22
Main Channel	5070	100-YR	29500	226	253.07		253.51	0.000263	5.39	6753.68	751.86	0.23
Main Channel	5070	500-YR	34700	226	254.03		254.56	0.0003	5.96	7495.24	788.17	0.24
Main Channel	6103	10-YR	22500	226	251.88		252.12	0.000111	3.95	6545.65	634.95	0.15
Main Channel	6103	50-YR	27200	226	252.93		253.23	0.000136	4.5	7214.12	645.2	0.17
Main Channel	6103	100-YR	29500	226	253.38		253.72	0.000148	4.76	7504.59	646.5	0.18
Main Channel	6103	500-YR	34700	226	254.38		254.8	0.000173	5.3	8157.29	649.66	0.19
Main Channel	7239	10-YR	22500	226	251.94		252.33	0.000193	5.25	6803.82	862.19	0.2
Main Channel	7239	50-YR	27200	226	253.01		253.48	0.000225	5.86	7725.49	865.73	0.22
Main Channel	7239	100-YR	29500	226	253.47		253.98	0.000241	6.14	8125.51	867.07	0.23
Main Channel	7239	500-YR	34700	226	254.51		255.1	0.000271	6.71	9024.59	869.87	0.24

Main Channel	7956	10-YR	22500	226.05	252.18	252.46	0.000144	4.6	7657.25	945.19	0.17
Main Channel	7956	50-YR	27200	226.05	253.3	253.63	0.000165	5.08	8718.18	949.2	0.19
Main Channel	7956	100-YR	29500	226.05	253.79	254.14	0.000175	5.3	9181.83	951.02	0.19
Main Channel	7956	500-YR	34700	226.05	254.88	255.28	0.000194	5.75	10219.4	955.12	0.2
Main Channel	8899	10-YR	22500	225.05	252.36	252.59	0.00012	4.03	7670.89	827.82	0.16
Main Channel	8899	50-YR	27200	225.05	253.5	253.78	0.000138	4.49	8617.02	833.71	0.17
Main Channel	8899	100-YR	29500	225.05	253.99	254.3	0.000148	4.71	9031.66	835.27	0.18
Main Channel	8899	500-YR	34700	225.05	255.1	255.45	0.000165	5.15	9954.91	839.12	0.19

Geometry Plot



Profile Plot



Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl	Levee El Right (ft)
Main Channel	395	10-YR	23000	226	250.6	234.38	250.7	0.000052	2.55	9855.7	1499.18	0.1	253
Main Channel	395	50-YR	29000	226	251.2	235.28	251.35	0.000074	3.1	10765.6	1541.94	0.12	253
Main Channel	395	100-YR	32000	226	251.4	235.68	251.58	0.000086	3.38	11072.65	1573.52	0.13	253
Main Channel	395	500-YR	39000	226	251.8	236.58	252.05	0.000119	4.03	11688.22	1602.92	0.16	253
Main Channel	991	10-YR	23000	226	250.63	234.38	250.73	0.000052	2.55	9434.8	955.15	0.1	253
Main Channel	991	50-YR	29000	226	251.24	235.28	251.39	0.000074	3.11	10060.19	1067	0.12	253
Main Channel	991	100-YR	32000	226	251.45	235.68	251.63	0.000087	3.4	10284.43	1101.67	0.13	253
Main Channel	991	500-YR	39000	226	251.87	236.58	252.12	0.00012	4.05	10748.79	1115.77	0.16	253
Main Channel	1387	10-YR	23000	226	250.71	233	250.75	0.000021	1.58	14570.07	764.12	0.06	253
Main Channel	1387	50-YR	29000	226	251.36	233.8	251.42	0.00003	1.93	15069.73	792.42	0.08	253
Main Channel	1387	100-YR	32000	226	251.59	234.16	251.66	0.000035	2.1	15252.53	801.82	0.08	253
Main Channel	1387	500-YR	39000	226	252.07	234.94	252.17	0.000048	2.5	15669.92	977.73	0.1	253
Main Channel	1844	10-YR	23000	226	250.65	234.88	250.8	0.00007	3.04	7590.83	1527.65	0.12	
Main Channel	1844	50-YR	29000	226	251.27	235.83	251.49	0.0001	3.72	7835.92	1617.74	0.14	
Main Channel	1844	100-YR	32000	226	251.49	236.27	251.74	0.000118	4.07	7921.46	1656.51	0.16	
Main Channel	1844	500-YR	39000	226	251.92	237.26	252.28	0.000163	4.86	8102.49	1751.68	0.19	
Main Channel	2214	10-YR	23000	226	250.8	232.41	250.82	0.00001	1.13	21829.45	1308.07	0.05	
Main Channel	2214	50-YR	29000	226	251.49	233.14	251.52	0.000014	1.37	22744.91	1336.45	0.05	
Main Channel	2214	100-YR	32000	226	251.74	233.47	251.78	0.000016	1.49	23085.68	1347.71	0.06	
Main Channel	2214	500-YR	39000	226	252.28	234.17	252.33	0.000022	1.77	23818.7	1392.26	0.07	
Main Channel	2302	10-YR	23000	226	250.76	234.37	250.86	0.000047	2.48	9570.71	1079.48	0.1	
Main Channel	2302	50-YR	29000	226	251.44	235.27	251.58	0.000066	3	10350.55	1239.18	0.12	
Main Channel	2302	100-YR	32000	226	251.68	235.67	251.85	0.000077	3.27	10660.17	1285.14	0.13	
Main Channel	2302	500-YR	39000	226	252.2	236.55	252.43	0.000103	3.86	11329.43	1308.28	0.15	
Main Channel	2395	10-YR	23000	226	250.73	235.64	250.91	0.00009	3.43	6819.28	473.2	0.14	
Main Channel	2395	50-YR	29000	226	251.38	236.67	251.65	0.000128	4.18	7221.95	791.87	0.16	
Main Channel	2395	100-YR	32000	226	251.61	237.14	251.94	0.00015	4.55	7416.92	888.5	0.18	
Main Channel	2395	500-YR	39000	226	252.1	238.21	252.55	0.000205	5.41	7862.88	946.66	0.21	
Main Channel	2454	10-YR	23000	226	250.82		250.92	0.000047	2.48	9616.04	904.5	0.1	
Main Channel	2454	50-YR	29000	226	251.53		251.67	0.000066	3.01	10280.63	978.16	0.12	
Main Channel	2454	100-YR	32000	226	251.79		251.96	0.000076	3.27	10544.88	1021.96	0.13	
Main Channel	2454	500-YR	39000	226	252.35		252.58	0.000103	3.87	11124.45	1046.94	0.15	
Main Channel	3165	10-YR	23000	226	250.69	239.04	251.07	0.000276	5.01	4616.01	455.15	0.23	
Main Channel	3165	50-YR	29000	226	251.32	240.76	251.89	0.000383	6.06	4843.31	553.3	0.27	
Main Channel	3165	100-YR	32000	226	251.54	241.47	252.22	0.000445	6.59	4930.71	596.96	0.29	
Main Channel	3165	500-YR	39000	226	252	242.96	252.94	0.000602	7.81	5128.06	675.47	0.34	

Main Channel			3723	10-YR	22500	224.1	250.99	234.14	251.2	0.000132	3.64	6872.95	645.93	0.14
Main Channel			3723	50-YR	27200	224.1	251.79	235.1	252.06	0.000169	4.23	7404.89	721.16	0.16
Main Channel			3723	100-YR	29500	224.1	252.1	235.53	252.41	0.000189	4.51	7643.57	787.17	0.17
Main Channel			3723	500-YR	34700	224.1	252.81	236.45	253.2	0.000234	5.11	8232.71	873.8	0.19
Main Channel			4033	10-YR	22500	226	251.03	235.64	251.24	0.000143	3.75	7074.18	767.21	0.15
Main Channel			4033	50-YR	27200	226	251.84	236.54	252.12	0.00018	4.31	7676.73	997.32	0.17
Main Channel			4033	100-YR	29500	226	252.16	236.97	252.47	0.000199	4.59	7921.87	1050.01	0.17
Main Channel			4033	500-YR	34700	226	252.88	237.88	253.28	0.000242	5.17	8477.86	1189.19	0.19
Main Channel			4233	10-YR	22500	226	251.01	239.19	251.3	0.000189	4.37	5678.22	849.28	0.18
Main Channel			4233	50-YR	27200	226	251.8	239.99	252.19	0.000234	5.02	6128.36	1037.04	0.21
Main Channel			4233	100-YR	29500	226	252.12	240.37	252.55	0.000259	5.33	6308.09	1056.62	0.22
Main Channel			4233	500-YR	34700	226	252.83	241.17	253.38	0.000312	6	6711.41	1222.09	0.24
Main Channel			4345	10-YR	22500	226	251.06	236.49	251.33	0.0002	4.17	5885.89	665.4	0.16
Main Channel			4345	50-YR	27200	226	251.87	237.36	252.22	0.000256	4.81	6354.94	684.45	0.18
Main Channel			4345	100-YR	29500	226	252.2	237.75	252.59	0.000286	5.12	6543.04	688.79	0.2
Main Channel			4345	500-YR	34700	226	252.92	238.66	253.42	0.000352	5.78	6964.27	944.72	0.22
Main Channel	4400	PATTONWOOD DR			Bridge									
Main Channel			4441	10-YR	22500	227.15	251.64	234.2	251.82	0.000132	3.49	6964	837.07	0.13
Main Channel			4441	50-YR	27200	227.15	252.63	235.02	252.88	0.000166	4.01	7548.63	934.74	0.15
Main Channel			4441	100-YR	29500	227.15	253.05	235.4	253.33	0.000184	4.26	7799.15	1034.2	0.15
Main Channel			4441	500-YR	34700	227.15	254.01	236.22	254.35	0.000222	4.78	8371.12	1158.37	0.17
Main Channel			4532	10-YR	22500	226	251.67	236.2	251.84	0.000114	3.31	7357.8	763.18	0.13
Main Channel			4532	50-YR	27200	226	252.67	236.91	252.89	0.00014	3.79	7968.59	882.75	0.14
Main Channel			4532	100-YR	29500	226	253.1	237.25	253.35	0.000153	4.02	8231.23	960.7	0.15
Main Channel			4532	500-YR	34700	226	254.07	237.99	254.38	0.000181	4.5	8835.74	1117.45	0.17
Main Channel			5070	10-YR	22500	226	251.65		251.96	0.000208	4.54	5709.16	727.75	0.2
Main Channel			5070	50-YR	27200	226	252.65		253.04	0.000245	5.12	6439.5	734.33	0.22
Main Channel			5070	100-YR	29500	226	253.07		253.51	0.000263	5.39	6756.61	751.96	0.23
Main Channel			5070	500-YR	34700	226	254.04		254.57	0.000299	5.95	7500.51	788.36	0.24
Main Channel			6103	10-YR	22500	226	251.88		252.12	0.000111	3.95	6546.34	634.96	0.15
Main Channel			6103	50-YR	27200	226	252.93		253.24	0.000136	4.5	7215.84	645.21	0.17
Main Channel			6103	100-YR	29500	226	253.38		253.72	0.000148	4.76	7506.96	646.51	0.18
Main Channel			6103	500-YR	34700	226	254.39		254.81	0.000172	5.29	8161.32	649.68	0.19
Main Channel			7239	10-YR	22500	226	251.94		252.33	0.000193	5.25	6804.75	862.19	0.2
Main Channel			7239	50-YR	27200	226	253.01		253.48	0.000225	5.85	7727.8	865.74	0.22
Main Channel			7239	100-YR	29500	226	253.47		253.98	0.000241	6.14	8128.66	867.08	0.23
Main Channel			7239	500-YR	34700	226	254.51		255.1	0.000271	6.7	9029.91	869.89	0.24

Main Channel	7956	10-YR	22500	226.05	252.18	252.46	0.000144	4.6	7658.23	945.19	0.17
Main Channel	7956	50-YR	27200	226.05	253.3	253.63	0.000165	5.08	8720.6	949.21	0.19
Main Channel	7956	100-YR	29500	226.05	253.79	254.14	0.000175	5.3	9185.08	951.03	0.19
Main Channel	7956	500-YR	34700	226.05	254.88	255.28	0.000193	5.75	10224.84	955.15	0.2
Main Channel	8899	10-YR	22500	225.05	252.36	252.59	0.00012	4.03	7671.71	827.82	0.16
Main Channel	8899	50-YR	27200	225.05	253.5	253.78	0.000138	4.49	8619.04	833.72	0.17
Main Channel	8899	100-YR	29500	225.05	254	254.3	0.000147	4.71	9034.37	835.28	0.18
Main Channel	8899	500-YR	34700	225.05	255.1	255.46	0.000165	5.15	9959.43	839.14	0.19

APPENDIX D – SITE MANAGEMENT PLAN

RAMBOLL

ENVIRONMENT
& HEALTH

SITE MANAGEMENT PLAN (DRAFT)
EASTERN SHORELINE

Project name	NYS REDI Grants
Project no.	1940100197
Recipient	Ms. Jane Forbes - City of Rochester Division of Environmental Quality
Document type	Site Management Plan (DRAFT)
Version	Draft
Date	January 20, 2021
Prepared by	[Name]
Checked by	[Name]
Approved by	[Name]
Description	[Text]

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1. Introduction

This Site Management Plan (SMP) was prepared by Ramboll Americas Engineering Solutions, Inc. (Ramboll) for the City of Rochester for the east and west shorelines of an approximately 975-foot stretch of the Genesee River. The areas include the northern end of St. Paul Boulevard on the east shore) and MO-07 West Side Genesee River Businesses (generally from Train Station heading north) and MO-10 City of Rochester Marina extending south from the Train Station to the north boundary of Gibbs Marina (West) (Figure 1-1 below, within text).

1.1 Statement of Purpose

This SMP document is required by the City of Rochester as an element of environmental management during construction. This SMP describes requirements for construction monitoring, on-site management of impacted soil, contingencies for management and characterization of unexpected conditions such as underground storage tanks (USTs) or suspected asbestos-containing debris, abatement or disposal of fill material, waste characterization, and contains the following:

- A description of the known environmental conditions/history of the project zones.
- A depiction of areas of known impacts and other testing locations with no identified impacts.
- A Material Handling Plan, outlining how contaminated subsurface material will be handled, characterized, re-utilized on-site or disposed of off-site, in accordance with all federal, state and local regulations.
- A Waste Characterization and Disposal Plan including details of the specific sampling requirements for reuse/disposal of materials.
- Description of roles and responsibilities of the City, Contractor, and Consultant (Qualified Environmental Professional) during the implementation of the plan.
- Dust minimization requirements during implementation during subsurface work conducted during construction and contingencies for community air monitoring, if warranted.
- A Health and Safety Plan.

This SMP should be implemented when work performed at the Site has the potential to disturb soil/fill and/or encounter groundwater.

1.2 Background

In 2017 and 2019, the Lake Ontario and the St. Lawrence River System experienced high-water levels that resulted in severe flooding and erosion throughout the region. These conditions have caused adverse effects on property, infrastructure, business, and public safety. Given changes to the climatic baseline, New York State recognizes that moving forward requires planning for and responding to a potential new normal set of climate circumstances. For the Lake Ontario Region, learning how to adapt to and plan for a warmer, wetter, and more dynamic regional climate is emerging as a reality. By focusing on proactive resiliency planning that is informed by useful climate information and local input, the Lake Ontario Region has an opportunity to promote shoreline resiliency that allows communities and stakeholders to adapt to climate-related challenges.

A subsurface investigation was performed to acquire site-specific geotechnical properties prior to beginning the design phase, to evaluate subsurface conditions and collect select samples of soil for analysis. The locations of borings completed during this investigation are presented on Figures 1A and 1B.

1.3 Site Description

The project site, St. Paul Terminus is located on a strip of land within the extreme northwestern corner of the Town of Irondequoit in Monroe County, New York. Also known as the Summerville Lakeshore Area, the site is just east of the outlet of the Genesee River and extends approximately 975 feet along the shoreline at the end of St. Paul Boulevard (Figure 1-2). The encompassing area consists of Monroe County Sheriff Marine Headquarters (MC Sheriff Marine HQ), NYS-DEC Fishing Access Area, Silk O'Loughlin's Restaurant, the United States Coast Guard (USCG), Summerville Wastewater Pumping Station (WWPS), Summerville Loop RTS Bus Station and portions of the Westage at the Harbor condominium complex.

Construction improvements for the project include Stormwater improvements to reduce I/I impact on the sanitary collection system and allow for the Summerville WWPS to operate as intended. Minor improvements to the WWPS and collection system are recommended to provide additional resiliency to the system.

A summary report of the current conditions and recommended improvements is included as Appendix C to the Ramboll January 2021 Preliminary Design Report.

Recommended Improvements:

- Interior facility hardening consisting of interior curbing, crack repairs and sealing conduits.
- Exterior facility hardening consisting of protecting wet well access and ventilation
- Collection system manhole improvements to reduce overland inflow into the system

Figure 1-1 (East) Site Location Map

2. Summary of Site Conditions

During the 2019 flood conditions, water approached the exterior of the WWPS isolating access to the pumping station and was close to inundating the wet well. More importantly, pooled water in the area overloaded the pumping system and reduced the ability of the system to maintain elevation of the sanitary sewer system below that of adjacent basements.

The following represents a summary of the borings advanced, analytical samples collected, and purpose of each for the subsurface investigation performed. Locations of the borings are shown on Figure 2.

Boring ID	Purpose	Analytical Sample ID	Analytical Samples
EB1	Excavation – Disposal and Exposure	EB1-Native-10-12-11042020	TCLP SV 8270D, Pest 8081, Herb 8151, Metals 6010C TCLP 8260 Ignitability 1030 Reactivity 9010/Corrosivity 1110 PCB 8082 8260 VOCs + 10 SV 8270D +20, Pest 8081B, PCB 8082, SV 8270+20 SIM TAL Metals 6010B, Hg 7471A, CN 9010B PFAS 537.1
EB1	Excavation – Disposal and Exposure	EB1-Fill-0.5-2-11042020	TCLP SV 8270D, Pest 8081, Herb 8151, Metals 6010C TCLP 8260 Ignitability 1030 Reactivity 9010/Corrosivity 1110 PCB 8082 8260 VOCs + 10 SV 8270D +20, Pest 8081B, PCB 8082, SV 8270+20 SIM TAL Metals 6010B, Hg 7471A, CN 9010B PFAS 537.1
EB2	Potential Grading – Exposure	EB2-0-2-11062020	PCB 8082 8260 VOCs + 10 SV 8270D +20, Pest 8081B, PCB 8082, SV 8270+20 SIM TAL Metals 6010B, Hg 7471A, CN 9010B PFAS 537.1
EB4	No Exposed Soil	-	-
EB5	No Exposed Soil	-	-
EB6	No Exposed Soil	-	-

Boring logs for each location are included as Appendix B.

3. Site Management Plan

3.1 Potentially Impacted Media

Field observations conducted during the drilling completed in conjunction with the project did not identify evidence of impacted materials such as staining or odors. However, given the size of the area and its historic use, it is possible that impacted soil or groundwater may be present that was not identified.

A search of NYSDEC records was completed to identify potential sites in the area of the project that could have resulted in the release of chemicals to the soil or groundwater. Review of the NYSDEC environmental cleanup information on the DECinfo Locator page (https://gisservices.dec.ny.gov/gis/dil/) reveals that several sites being tracked in the NYSDEC Database are located in the general area. The locations and boundaries of each of these sites is illustrated on Figure 2 together with the location of activities associated with the REDI project. A brief description of these sites follows:

- Old Rochester City Landfill Site #C82009 (n site)
  Sites with the N site classification do not require any additional action at this time.
- Lighthouse Pointe Riverfront Site # C828140 (class A) and Lighthouse Pointe Inland Site # C828141 (class A)
  Class A sites are currently active.
  Contamination within the Riverfront Site was identified in the soil and groundwater. Subsurface soil contamination was found across the entire Riverfront Site, including groundwater contamination.

In addition, the NYSDEC Spills data base was reviewed to identify incidents that may have impacted the soil or groundwater within the project area. A search was conducted for incidents that occurred between December 1990 and 2020 along the segment of St. Paul Boulevard in the vicinity of the project areas as well as searching for keywords marina and yacht club. The approximate locations of the spill areas are depicted on Figure 2. The search identified the following:

Spill Number	Date Spill Reported	Spill Name	Address	
9306301	8/23/1993	US COAST GUARD STATION	5500 ST PAUL BOULEVARD	air release of petroleum 8/23/1993
9614080	3/3/1997	DRUM NEAR PORT AUTHORITY	5500 ST PAUL BOULEVARD	drum in water near port authority - 3/3/1997
813061	3/5/2009	US COAST GUARD STATION ROCHESTER	5500 ST PAUL BOULEVARD	diesel to soil/groundwater
1705716	9/6/2017	MONROE COUNTY SHERIFF'S MARINE UNIT	5575 ST PAUL BLVD	gasoline spill/loss

3.1.1 In-Field Identification

As previously discussed, select soil samples were analyzed as part of the pre-design activities to assess the presence of constituents that would need to be considered in addressing potential worker and public exposure or in assessing soil management and disposal options during construction. The table below illustrates boring locations, sampled intervals, sample identification, etc.

Boring ID	Sample Interval (bgs)	Analytical Sample ID	Groundwater Encountered (bgs)
EB1	10 – 12 ft.	EB1-Native-10-12-11042020	~6 ft.
EB1	0.5 – 2 ft.	EB1-Fill-0.5-2-11042020	~6 ft.
EB2	0 - 2 ft.	EB2-0-2-11062020	~14 ft.

Tables 1 through 6 present the analytical results of the soil samples compared to NY Part 375 Restricted Residential SCO and Commercial SCOs (Table 375-6.8(b)), as well as, Maximum Concentration of Contaminants for the Toxicity Characteristic (6 CRR-NY 371.3). An overview of the results follows.

Pesticides:

- One pesticide was detected at a low concentration that was an estimated value and below both the Restricted Residential and Commercial SCOs.

PCBs:

- No PCBs were detected

VOCs and Metals:

- A few low-level concentrations were detected, none were above NY Part 375 Restricted Residential SCO or Commercial SCOs

SVOCs:

- Sample EB2-0-2-11062020 contained a low-level concentration of Indeno(1,2,3-cd)pyrene which was slightly above the Restricted Residential SCO

This sample was collected from the zero to two feet (below ground surface) interval. This exceedance is not indicative of widespread contamination at this sample location/site area.

PFAs:

- There were few low-level detections at the part per billion (ppb) range. Soil cleanup objectives for PFOA and PFOS will be proposed in an upcoming revision to 6 NYCRR Part 375-6, the SCOs utilized are derived from the January 2021 NYSDEC document entitled *Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Guidance*.

Disposal

For disposal purposes, two locations were analyzed for Toxicity Characteristics (EB1-Native and EB1-Fill), Toxicity characteristic leaching procedure (TCLP), a soil sample extraction method for chemical analysis employed as an analytical method to simulate leaching through a landfill.

There were no detections for TCLP Pesticides, TCLP Herbicides, TCLP VOCs, TCLP SVOCs, TCLP Metals/Inorganics, Reactive Sulfide/Cyanide. Therefore, none of the sample locations exceeded criteria for the Maximum Concentration of Contaminants for the Toxicity Characteristics (TCLP), Electronic Code of Federal Regulations, Title 40, Chapter I, Subchapter I, Part 261, subpart C, §261.24 as presented in Table 7.

3.2 Material Handling Plan (Re-Use of Soil or Fill)

This section outlines how material will be managed during construction.
Analytical results of the soil samples collected as part of the predesign study indicate that the soil can be regraded and reused in the area that it originates from. Should grades require that material need to be removed from the area, procedures outlined

3.2.1 Imported Materials

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d) and for emerging contaminants presented in Sampling for Per- and Polyfluoroalkyl Substances (PFAS) Under DEC's Part 375 Remedial Programs (NYSDEC 2020). Concentrations of detected constituents shall meet the Restricted Residential soil cleanup objectives (SCOs) as provided table 375-6.8(b) of 6 NYCRR part 375. Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by the City of Rochester. Solid waste will not be imported onto the Site. Sampling frequencies and analyses shall be in accordance with DER-10.

Trucks entering the Site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

Imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards for imported backfill and cover soils at the Site is the lesser of the SCOs for Commercial Use and Restricted Residential Use as referenced in 6 NYCRR Part 375 Table 375-6.8(b). These SCOs must also be met for imported materials to the Site.

Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the site without prior approval. Solid waste will not be imported onto the Site.

Documentation pertaining to all materials imported to the site shall be maintained and provided with the construction completion report for this project. This information shall include at a minimum, type of material, volume of material, owner and location of source of material, source permits, grain size information and/or analytical data. Copies of bills of lading and other documentation pertaining to the source or provider of the material shall be also be provided.

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Unless immediately being used, imported soil/fill will be covered with and staged on tarps/poly sheeting, separate from excavated materials, to prevent wind and precipitation erosion.

3.2.2 Management of Potentially Impacted Materials

Should odors, staining or sheen be noted during soil moving or excavation the material shall be considered to be potentially contaminated. These materials shall not be reused and shall be segregated

from other materials pending characterization and disposal off-site. Air-monitoring should also be considered for the Site, should odors or staining be encountered.

Depending on volume, the potentially contaminated materials can be placed in drums, roll-offs, or stockpiles. If stockpiles are used, it shall be underlain and covered with plastic sheeting. Soil stockpiles will be continuously encircled with a berm and/or silt fence.

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State and federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded. Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

As necessary, trucks will be decontaminated (i.e., swept, scraped washed off) prior to leaving the site.

3.2.3 Analytical Laboratory Testing

Potentially impacted material that is encountered during construction should be analyzed for one or more of the following:

- PCB via USEPA Method 8082
- VOCs via USEPA Method 8260
- SVOCs USEPA Method 8270D
- Pesticides via USEPA Method 8081B
- 1,4 Dioxane via USEPA Method 8270 SIM
- TAL Metals via USEPA Method 6010B
- Mercury via USEPA Method 7471A,
- Cyanide via USEPA Method 9010B
- PFAS via Method 537.1
- Additional waste characterization parameters, if required by the disposal facility.

The selection of the parameters shall be selected based on the observations made at the time of discovery, information obtained that may provide details pertaining to its origin, and how the material will be managed.

3.2.4 Disposition of Materials

Off-site disposal of material may be warranted based on laboratory test results, or construction requirements.

Select soil samples were analyzed for TCLP as part of the pre-design activities to aid in the evaluation of soil management options associated with the construction activities. The results of these analyses compared to toxicity criteria contained in 6 CRR-NY 371.3 are presented in Table 7. Copies of the analytical reports are included as Appendix A. The results indicate that the material analyzed do not exhibit the characteristics of hazardous waste as defined by 6 CRR-NY 371.3.

All soil/fill/solid waste excavated and removed from the Site will be transported and disposed in accordance with all local, State (including 6 NYCRR Part 360), and Federal regulations.

If soil/fill from the Site is proposed for unregulated off-site disposal (e.g., clean soil removed for development purposes), a formal request with an associated plan will be made to the City of Rochester. Unregulated off-site management of materials from this Site will not occur without formal City of Rochester approval.

Documentation associated with any materials transported off the site shall be maintained and provided to the City of Rochester with as part of the final construction report. This documentation shall include at a minimum, material description, material volume, location of is origin, disposal location, date of disposal and any associated analytical results. Bills of lading, manifests and other associated disposal documentation shall also be provided.

3.3 Health and Safety Plan

A general health and safety plan for this program is included as Appendix C.

The Site owner is responsible for making Site workers involved with intrusive activities aware of the potential harmful exposures that may be present in subsurface media at the Site.
The Site owner will discuss with the Site workers the proper identification, handling, and disposal methods described herein, and will caution the Site workers to avoid or minimize disturbance of impacted material in order to reduce or eliminate exposure to contaminants. Areas that have disturbed (e.g., excavated, graded, etc.) that contain impacted material should be restored (e.g., backfilled/covered with clean soil/fill cover, paved, etc.).

Contractors working on this project will be required to prepare and follow their own Health and Safety Plan that includes potential hazards and personal protective equipment associated with their activities based on the roles and responsibilities in connection with this project.

3.4 Dust Control and Air Monitoring

The generation of dust shall be minimized during execution of construction activities. Trucks carrying fill for off-site disposal or imported for use on site shall be appropriately covered to minimize the generation of dust. In addition, stockpiles of soil and other granular materials shall be covered with plastic sheeting or tarps when not in use. Should nuisance dust generation become evident, dust suppression may be warranted. The following presents methods that may be appropriate in minimizing dust during execution of this project:

- Applying water on haul roads;
- Wetting equipment and excavation faces;
- Spraying water on buckets during excavation and dumping;
- Hauling materials in properly tarped or watertight containers;
- Restricting vehicle speeds to 10 mph;
- Covering excavated areas and material after excavation activity ceases; and
- Reducing the excavation size and/or number of excavations.

When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions and generate runoff.

Should dust minimization techniques fail to reduce dust, a community air monitoring plan (CAMP) shall be developed for use during implementation of subsurface work to monitor dust generated during construction.

4. Site Contacts

Roles and responsibilities of the City, Contractor, and Consultant (Qualified Environmental Professional) during implementation of the plan.
A copy of this SMP has been provided to the City DEQ.

DEQ Contact: Ms. Jane Forbes
City of Rochester
Department of Environmental Services
Division of Environmental Quality
30 Church Street, Room 300B
Rochester, NY 14614
(585) 428-7892

4.1 Emergency Contacts

- Medical, Fire, and Police: 911
- Dig Safely New York: (800) 962-7962 (3-day notice required for utility markout)
- Poison Control Center: (800) 222-1222
- Pollution Toxic Chemical Oil Spills: (800) 424-8802
- NYSDEC Spills Hotline: (800) 457-7362

NYSDEC SPILL LOCATIONS

BORING LOCATIONS

SHORELINE CONSTRUCTION ACTIVITIES

ABOVE GRADE SEAWALL AND STOP LOG BARRIERS

PROPOSED CATCH BASIN INSTALLATION

GRADE TO BE RAISED

0 75 150 Feet

PROPOSED IMPROVEMENT ALTERNATIVES

New York State
Office of General Services
East Side of Genesee River Improvements

FIGURE 02

O'BRIEN & GERE ENGINEERS, INC.
A RAMBOLL COMPANY

RAMBOLL

TABLES

Table 1 - Soil Boring Pesticide Analytical Results
Eastern Shoreline

ANALYTE	CAS NUMBER	METHOD	UNITS	NY Part 375 Restricted Residential SCO	NY Part 375 Commercial SCO	EB1-Native-10-12-11042020 RESULT	EB1-Fill-0.5-2-11042020 RESULT	EB2-0-2-11062020 RESULT
Pesticides								
4,4'-DDD	72-54-8	8081B/Pest OC	ug/Kg-dr	13,000	92,000	1.1 U	1.1 U	6.1 U
4,4'-DDE	72-55-9	8081B/Pest OC	ug/Kg-dr	8,900	62,000	1.1 U	1.1 U	6.1 U
4,4'-DDT	50-29-3	8081B/Pest OC	ug/Kg-dr	7,900	47,000	1.1 U	1.1 U	8.6 J
Aldrin	309-00-2	8081B/Pest OC	ug/Kg-dr	97	680	1.1 U	1.1 U	6.1 U
Dieldrin	60-57-1	8081B/Pest OC	ug/Kg-dr	200	NC	1.1 U	1.1 U	6.1 U
Endosulfan I	959-98-8	8081B/Pest OC	ug/Kg-dr	24,000	200000	1.1 U	1.1 U	6.1 U
Endosulfan II	33213-65-9	8081B/Pest OC	ug/Kg-dr	24,000	NC	1.1 U	1.1 U	6.1 U
Endosulfan Sulfate	1031-07-8	8081B/Pest OC	ug/Kg-dr	24,000	200000	1.1 U	1.1 U	6.1 U
Endrin	72-20-8	8081B/Pest OC	ug/Kg-dr	11,000	NC	1.1 U	1.1 U	6.1 U
Endrin Aldehyde	7421-93-4	8081B/Pest OC	ug/Kg-dr	NC	NC	1.1 U	1.1 U	6.1 U
Endrin Ketone	53494-70-5	8081B/Pest OC	ug/Kg-dr	NC	NC	1.1 U	1.1 U	6.1 U
Heptachlor	76-44-8	8081B/Pest OC	ug/Kg-dr	2,100	15000	1.1 U	1.1 U	6.1 U
Heptachlor Epoxide	1024-57-3	8081B/Pest OC	ug/Kg-dr	NC	NC	1.1 U	1.1 U	6.1 U
Methoxychlor	72-43-5	8081B/Pest OC	ug/Kg-dr	NC	NC	1.1 U	1.1 U	6.1 U
Toxaphene	8001-35-2	8081B/Pest OC	ug/Kg-dr	NC	NC	25 U	23 U	140 U
alpha-BHC	319-84-6	8081B/Pest OC	ug/Kg-dr	480	3,400	1.1 U	1.1 U	6.1 U
alpha-Chlordane	5103-71-9	8081B/Pest OC	ug/Kg-dr	4,200	24,000	1.1 U	1.1 U	6.1 U
beta-BHC	319-85-7	8081B/Pest OC	ug/Kg-dr	360	3,000	1.1 U	1.1 U	6.1 U
delta-BHC	319-86-8	8081B/Pest OC	ug/Kg-dr	100,000	NC	1.1 U	1.1 U	6.1 U
gamma-BHC (Lindane)	58-89-9	8081B/Pest OC	ug/Kg-dr	1,300	9,200	1.1 U	1.1 U	6.1 U
gamma-Chlordane	5566-34-7	8081B/Pest OC	ug/Kg-dr	NC	NC	1.1 U	1.1 U	6.1 U

Notes:
NC - No criteria exists, NA - Not Available
U - Not detected at the detection limit shown
J - Estimated value

Table 2 - Soil Boring PCB Analytical Results
Eastern Shoreline

ANALYTE	CAS NUMBER	METHOD	UNITS	NY Part375-Restricted Residential SCO	NY Part 375 Commercial SCO	EB1-Native-10-12-11042020 R2010360-002	EB1-Fill-0.5-2-11042020 R2010360-003
PCB							
Aroclor 1016	12674-11-2	8082A/PCB	ug/Kg-dry	NC	NC	43 U	40 U
Aroclor 1221	11104-28-2	8082A/PCB	ug/Kg-dry	NC	NC	87 U	80 U
Aroclor 1232	11141-16-5	8082A/PCB	ug/Kg-dry	NC	NC	43 U	40 U
Aroclor 1242	53469-21-9	8082A/PCB	ug/Kg-dry	NC	NC	43 U	40 U
Aroclor 1248	12672-29-6	8082A/PCB	ug/Kg-dry	NC	NC	43 U	40 U
Aroclor 1254	11097-69-1	8082A/PCB	ug/Kg-dry	NC	NC	43 U	40 U
Aroclor 1260	11096-82-5	8082A/PCB	ug/Kg-dry	NC	NC	43 U	40 U
Total PCBs	NA	---	---	1,000	1,000	43	40

Notes:

NC - No criteria exists, NA - Not Available

U - Not detected at the detection limit shown

J - Estimated value

Table 3 - Soil Boring VOCs Analytical Results
Eastern Shoreline

ANALYTE	CAS NUMBER	METHOD	UNITS	NY Part 375 Restricted Residential SCO	NY Part 375 Commercial SCO	EB1-Native-10-12-11042020 RESULT	EB1-Fill-0.5-2-11042020 RESULT	EB2-0-2-11062020 RESULT
VOCs								
1,1,1-Trichloroethane (TCA)	71-55-6	8260C/VOC F	ug/Kg-dr	100,000	500,000	0.28 U	0.19 U	0.28 U
1,1,2,2-Tetrachloroethane	79-34-5	8260C/VOC F	ug/Kg-dr	NC	NC	0.61 U	0.42 U	0.61 U
1,1,2-Trichloro-1,2,2-trifluoroethar	76-13-1	8260C/VOC F	ug/Kg-dr	NC	NC	0.28 U	0.19 U	0.28 U
1,1,2-Trichloroethane	79-00-5	8260C/VOC F	ug/Kg-dr	NC	NC	0.28 U	0.19 U	0.28 U
1,1-Dichloroethane (1,1-DCA)	75-34-3	8260C/VOC F	ug/Kg-dr	26,000	240,000	0.28 U	0.19 U	0.28 U
1,1-Dichloroethene (1,1-DCE)	75-35-4	8260C/VOC F	ug/Kg-dr	100,000	500,000	0.40 U	0.28 U	0.40 U
1,2,3-Trichlorobenzene	87-61-6	8260C/VOC F	ug/Kg-dr	NC	NC	0.72 U	0.49 U	0.72 U
1,2,4-Trichlorobenzene	120-82-1	8260C/VOC F	ug/Kg-dr	NC	NC	0.58 U	0.40 U	0.58 U
1,2-Dibromo-3-chloropropane (DBC	96-12-8	8260C/VOC F	ug/Kg-dr	NC	NC	1.1 U	0.71 U	1.1 U
1,2-Dibromoethane	106-93-4	8260C/VOC F	ug/Kg-dr	NC	NC	0.28 U	0.19 U	0.28 U
1,2-Dichlorobenzene	95-50-1	8260C/VOC F	ug/Kg-dr	100,000	500,000	0.28 U	0.19 U	0.28 U
1,2-Dichloroethane	107-06-2	8260C/VOC F	ug/Kg-dr	3,100	30,000	0.28 U	0.19 U	0.28 U
1,2-Dichloropropane	78-87-5	8260C/VOC F	ug/Kg-dr	NC	NC	0.28 U	0.19 U	0.28 U
1,3-Dichlorobenzene	541-73-1	8260C/VOC F	ug/Kg-dr	49,000	280,000	0.28 U	0.19 U	0.28 U
1,4-Dichlorobenzene	106-46-7	8260C/VOC F	ug/Kg-dr	13,000	130,000	0.31 U	0.21 U	0.31 U
1,4-Dioxane	123-91-1	8260C/VOC F	ug/Kg-dr	13,000	130,000	28 U	19 U	28 U
2-Butanone (MEK)	78-93-3	8260C/VOC F	ug/Kg-dr	100,000	500,000	2.8 U	1.9 U	2.8 U
2-Hexanone	591-78-6	8260C/VOC F	ug/Kg-dr	NC	NC	0.50 U	0.34 U	0.50 U
4-Methyl-2-pentanone	108-10-1	8260C/VOC F	ug/Kg-dr	NC	NC	0.32 U	0.22 U	0.32 U
Acetone	67-64-1	8260C/VOC F	ug/Kg-dr	100,000	500,000	21	6.4	6.5 U
Benzene	71-43-2	8260C/VOC F	ug/Kg-dr	4,800	44,000	0.28 U	0.19 U	0.28 U
Bromochloromethane	74-97-5	8260C/VOC F	ug/Kg-dr	NC	NC	0.28 U	0.19 U	0.28 U
Bromodichloromethane	75-27-4	8260C/VOC F	ug/Kg-dr	NC	NC	0.28 U	0.19 U	0.28 U
Bromoform	75-25-2	8260C/VOC F	ug/Kg-dr	NC	NC	0.69 U	0.47 U	0.69 U
Bromomethane	74-83-9	8260C/VOC F	ug/Kg-dr	NC	NC	2.9 U	2.0 U	2.9 U
Carbon Disulfide	75-15-0	8260C/VOC F	ug/Kg-dr	NC	NC	0.40 J	0.28 U	0.40 U
Carbon Tetrachloride	56-23-5	8260C/VOC F	ug/Kg-dr	2,400	22,000	0.36 U	0.25 U	0.36 U
Chlorobenzene	108-90-7	8260C/VOC F	ug/Kg-dr	100,000	500,000	0.28 U	0.19 U	0.28 U
Chloroethane	75-00-3	8260C/VOC F	ug/Kg-dr	NC	NC	0.57 U	0.39 U	0.57 U
Chloroform	67-66-3	8260C/VOC F	ug/Kg-dr	49,000	350,000	0.28 U	0.19 U	0.28 U
Chloromethane	74-87-3	8260C/VOC F	ug/Kg-dr	NC	NC	2.0 U	1.4 U	2.0 U
Cyclohexane	110-82-7	8260C/VOC F	ug/Kg-dr	NC	NC	0.36 U	0.25 U	0.36 U
Dibromochloromethane	124-48-1	8260C/VOC F	ug/Kg-dr	NC	NC	0.28 U	0.19 U	0.28 U
Dichlorodifluoromethane (CFC 12)	75-71-8	8260C/VOC F	ug/Kg-dr	NC	NC	0.46 U	0.31 U	0.46 U
Dichloromethane	75-09-2	8260C/VOC F	ug/Kg-dr	100,000	500,000	3.9 U	2.7 U	3.9 U
Ethylbenzene	100-41-4	8260C/VOC F	ug/Kg-dr	41,000	390,000	0.28 U	0.19 U	0.28 U
Isopropylbenzene (Cumene)	98-82-8	8260C/VOC F	ug/Kg-dr	NC	NC	0.28 U	0.19 U	0.28 U
Methyl Acetate	79-20-9	8260C/VOC F	ug/Kg-dr	NC	NC	1.2 U	0.79 U	1.2 U
Methyl tert-Butyl Ether	1634-04-4	8260C/VOC F	ug/Kg-dr	100,000	500,000	0.28 U	0.19 U	0.28 U
Methylcyclohexane	108-87-2	8260C/VOC F	ug/Kg-dr	NC	NC	0.43 U	0.29 U	0.43 U
Styrene	100-42-5	8260C/VOC F	ug/Kg-dr	NC	NC	0.28 U	0.19 U	0.28 U
Tetrachloroethene (PCE)	127-18-4	8260C/VOC F	ug/Kg-dr	19,000	150,000	0.32 U	0.22 U	0.32 U
Toluene	108-88-3	8260C/VOC F	ug/Kg-dr	100,000	500,000	0.28 U	0.19 U	0.28 U
Trichloroethene (TCE)	79-01-6	8260C/VOC F	ug/Kg-dr	21,000	200,000	0.31 U	0.21 U	0.31 U
Trichlorofluoromethane (CFC 11)	75-69-4	8260C/VOC F	ug/Kg-dr	NC	NC	0.36 U	0.25 U	0.36 U
Vinyl Chloride	75-01-4	8260C/VOC F	ug/Kg-dr	900	13,000	0.63 U	0.44 U	0.63 U
cis-1,2-Dichloroethene	156-59-2	8260C/VOC F	ug/Kg-dr	100,000	500,000	0.28 U	0.19 U	0.28 U
cis-1,3-Dichloropropene	10061-01	8260C/VOC F	ug/Kg-dr	NC	NC	0.28 U	0.19 U	0.28 U
m,p-Xylenes	179601-2	8260C/VOC F	ug/Kg-dr	NC	NC	0.51 U	0.35 U	0.51 U
o-Xylene	95-47-6	8260C/VOC F	ug/Kg-dr	NC	NC	0.28 U	0.19 U	0.28 U
trans-1,2-Dichloroethene	156-60-5	8260C/VOC F	ug/Kg-dr	100,000	500,000	0.28 U	0.19 U	0.28 U
trans-1,3-Dichloropropene	10061-02	8260C/VOC F	ug/Kg-dr	NC	NC	0.28 U	0.19 U	0.28 U

Notes:
NC - No criteria exists, NA - Not Available
U - Not detected at the detection limit shown
J - Estimated value

Table 4 - Soil Boring SVOCs Analytical Results
Eastern Shoreline

ANALYTE	CAS NUMBER	METHOD	UNITS	NY Part 375 Restricted Residential SCO	NY Part 375 Commercial SCO	EB1-Native-10-12-11042020 RESULT	EB1-Fill-0.5-2-11042020 RESULT	EB2-0-2-11062020 RESULT
SVOCs								
1,2,4,5-Tetrachlorobenzene	95-94-3	8270D/SVO LL	ug/Kg-dr	NC	NC	18 U	18 U	98 U
1,4-Dioxane	123-91-1	8270D/SVO LL	ug/Kg-dr	NC	NC	43 U	42 U	240 U
2,2'-Oxybis(1-chloropropane)	108-60-1	8270D/SVO LL	ug/Kg-dr	NC	NC	18 U	18 U	100 U
2,3,4,6-Tetrachlorophenol	58-90-2	8270D/SVO LL	ug/Kg-dr	NC	NC	15 U	15 U	83 U
2,4,5-Trichlorophenol	95-95-4	8270D/SVO LL	ug/Kg-dr	NC	NC	9.5 U	9.4 U	54 U
2,4,6-Trichlorophenol	88-06-2	8270D/SVO LL	ug/Kg-dr	NC	NC	9.2 U	9.2 U	53 U
2,4-Dichlorophenol	120-83-2	8270D/SVO LL	ug/Kg-dr	NC	NC	9.7 U	9.7 U	56 U
2,4-Dimethylphenol	105-67-9	8270D/SVO LL	ug/Kg-dr	NC	NC	17 U	17 U	97 U
2,4-Dinitrophenol	51-28-5	8270D/SVO LL	ug/Kg-dr	NC	NC	13 U	12 U	69 U
2,4-Dinitrotoluene	121-14-2	8270D/SVO LL	ug/Kg-dr	NC	NC	19 U	19 U	110 U
2,6-Dinitrotoluene	606-20-2	8270D/SVO LL	ug/Kg-dr	NC	NC	20 U	20 U	120 U
2-Chloronaphthalene	91-58-7	8270D/SVO LL	ug/Kg-dr	NC	NC	16 U	16 U	91 U
2-Chlorophenol	95-57-8	8270D/SVO LL	ug/Kg-dr	NC	NC	10 U	9.9 U	57 U
2-Methylnaphthalene	91-57-6	8270D/SVO LL	ug/Kg-dr	NC	NC	2.4 U	3.4 J	52
2-Methylphenol	95-48-7	8270D/SVO LL	ug/Kg-dr	100,000	500,000	9.4 U	9.3 U	53 U
2-Nitroaniline	88-74-4	8270D/SVO LL	ug/Kg-dr	NC	NC	21 U	21 U	120 U
2-Nitrophenol	88-75-5	8270D/SVO LL	ug/Kg-dr	NC	NC	9.7 U	9.7 U	56 U
3,3'-Dichlorobenzidine	91-94-1	8270D/SVO LL	ug/Kg-dr	NC	NC	24 U	24 U	140 U
3- and 4-Methylphenol Coelution	CASID3030	8270D/SVO LL	ug/Kg-dr	NC	500,000	11 U	11 U	58 U
3-Nitroaniline	99-09-2	8270D/SVO LL	ug/Kg-dr	NC	NC	9.4 U	9.3 U	53 U
4,6-Dinitro-2-methylphenol	534-52-1	8270D/SVO LL	ug/Kg-dr	NC	NC	15 U	15 U	85 U
4-Bromophenyl Phenyl Ether	101-55-3	8270D/SVO LL	ug/Kg-dr	NC	NC	18 U	18 U	98 U
4-Chloro-3-methylphenol	59-50-7	8270D/SVO LL	ug/Kg-dr	NC	NC	19 U	19 U	110 U
4-Chloroaniline	106-47-8	8270D/SVO LL	ug/Kg-dr	NC	NC	12 U	12 U	68 U
4-Chlorophenyl Phenyl Ether	7005-72-3	8270D/SVO LL	ug/Kg-dr	NC	NC	17 U	17 U	94 U
4-Nitroaniline	100-01-6	8270D/SVO LL	ug/Kg-dr	NC	NC	22 U	21 U	120 U
4-Nitrophenol	100-02-7	8270D/SVO LL	ug/Kg-dr	NC	NC	32 U	31 U	180 U
Acenaphthene	83-32-9	8270D/SVO LL	ug/Kg-dr	100,000	500,000	2.1 U	2.1 U	51
Acenaphthylene	208-96-8	8270D/SVO LL	ug/Kg-dr	100,000	500,000	5.3 J	4.9 J	320
Acetophenone	98-86-2	8270D/SVO LL	ug/Kg-dr	NC	NC	14 U	14 U	78 U
Anthracene	120-12-7	8270D/SVO LL	ug/Kg-dr	100,000	500,000	5.0 U	5.0 U	220
Atrazine	1912-24-9	8270D/SVO LL	ug/Kg-dr	NC	NC	11 U	11 U	62 U
Benz(a)anthracene	56-55-3	8270D/SVO LL	ug/Kg-dr	1,000	5,600	6.3 U	15	380
Benzaldehyde	100-52-7	8270D/SVO LL	ug/Kg-dr	NC	NC	19 U	19 U	110 U
Benzo(a)pyrene	50-32-8	8270D/SVO LL	ug/Kg-dr	1,000	1,000	5.2 J	19	840
Benzo(b)fluoranthene	205-99-2	8270D/SVO LL	ug/Kg-dr	1,000	5,600	6.1 J	23	810
Benzo(g,h,i)perylene	191-24-2	8270D/SVO LL	ug/Kg-dr	100,000	500,000	5.4 J	15	800
Benzo(k)fluoranthene	207-08-9	8270D/SVO LL	ug/Kg-dr	3,900	56,000	4.7 U	7.6 J	240
Biphenyl	92-52-4	8270D/SVO LL	ug/Kg-dr	NC	NC	11 U	11 U	58 U
Bis(2-chloroethoxy)methane	111-91-1	8270D/SVO LL	ug/Kg-dr	NC	NC	17 U	17 U	93 U
Bis(2-chloroethyl) Ether	111-44-4	8270D/SVO LL	ug/Kg-dr	NC	NC	17 U	17 U	93 U
Bis(2-ethylhexyl) Phthalate	117-81-7	8270D/SVO LL	ug/Kg-dr	NC	NC	38 U	38 U	220 U
Butyl Benzyl Phthalate	85-68-7	8270D/SVO LL	ug/Kg-dr	NC	NC	21 U	21 U	120 U
Caprolactam	105-60-2	8270D/SVO LL	ug/Kg-dr	NC	NC	32 U	31 U	180 U
Carbazole	86-74-8	8270D/SVO LL	ug/Kg-dr	NC	NC	18 U	18 U	99 U
Chrysene	218-01-9	8270D/SVO LL	ug/Kg-dr	3,900	56,000	3.6 J	19	450
Di-n-butyl Phthalate	84-74-2	8270D/SVO LL	ug/Kg-dr	NC	NC	20 U	20 U	120 U
Di-n-octyl Phthalate	117-84-0	8270D/SVO LL	ug/Kg-dr	NC	NC	36 U	36 U	210 U
Dibenz(a,h)anthracene	53-70-3	8270D/SVO LL	ug/Kg-dr	330	560	3.4 U	3.4 U	130
Dibenzofuran	132-64-9	8270D/SVO LL	ug/Kg-dr	59,000	350,000	3.7 U	3.7 U	42 J
Diethyl Phthalate	84-66-2	8270D/SVO LL	ug/Kg-dr	NC	NC	23 U	23 U	130 U
Dimethyl Phthalate	131-11-3	8270D/SVO LL	ug/Kg-dr	NC	NC	18 U	18 U	110 U
Fluoranthene	206-44-0	8270D/SVO LL	ug/Kg-dr	100,000	500,000	8.4	32	740
Fluorene	86-73-7	8270D/SVO LL	ug/Kg-dr	100,000	500,000	2.2 U	2.1 U	99
Hexachlorobenzene	118-74-1	8270D/SVO LL	ug/Kg-dr	1,200	6,000	3.0 U	3.0 U	17 U
Hexachlorobutadiene	87-68-3	8270D/SVO LL	ug/Kg-dr	NC	NC	17 U	17 U	92 U
Hexachlorocyclopentadiene	77-47-4	8270D/SVO LL	ug/Kg-dr	NC	NC	29 U	29 U	170 U
Hexachloroethane	67-72-1	8270D/SVO LL	ug/Kg-dr	NC	NC	15 U	15 U	82 U
Indeno(1,2,3-cd)pyrene	193-39-5	8270D/SVO LL	ug/Kg-dr	500	5,600	3.7 U	14	640
Isophorone	78-59-1	8270D/SVO LL	ug/Kg-dr	NC	NC	18 U	18 U	110 U
N-Nitrosodi-n-propylamine	621-64-7	8270D/SVO LL	ug/Kg-dr	NC	NC	15 U	15 U	85 U
N-Nitrosodiphenylamine	86-30-6	8270D/SVO LL	ug/Kg-dr	NC	NC	13 U	13 U	74 U
Naphthalene	91-20-3	8270D/SVO LL	ug/Kg-dr	100,000	500,000	26	24	69 B
Nitrobenzene	98-95-3	8270D/SVO LL	ug/Kg-dr	NC	NC	3.4 U	3.4 U	20 U
Pentachlorophenol (PCP)	87-86-5	8270D/SVO LL	ug/Kg-dr	6,700	6,700	36 U	36 U	210 U
Phenanthrene	85-01-8	8270D/SVO LL	ug/Kg-dr	100,000	500,000	7.6 J	14	410
Phenol	108-95-2	8270D/SVO LL	ug/Kg-dr	100,000	500,000	11 U	11 U	63 U
Pyrene	129-00-0	8270D/SVO LL	ug/Kg-dr	100,000	500,000	7.1 J	27	630

Notes:

NC - No criteria exists, NA - Not Available

U - Not detected at the detection limit shown

E = Inorganics- Concentration is estimated due to the serial dilution was outside control limits.

J - Estimated value

Gray shading indicates exceedance of NY Part 375 Restricted Residential SCO

Table 5 - Soil Boring PFAs Analytical Results
Eastern Shoreline

ANALYTE	CAS NUMBER	METHOD	UNITS	NY Part 375 Restricted Residential SCO*	NY Part 375 Commercial SCO*	EB1-Native-10-12-1104202(RESULT	EB1-Fill-0.5-2-11042020 RESULT	EB2-0-2-11062020 RESULT
PFAs								
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	PFC/537M/PFA	ng/g-dry	NC	NC	0.18 U	0.18 U	0.21 U
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	PFC/537M/PFA	ng/g-dry	NC	NC	0.034 U	0.035 U	0.041 U
N-Ethyl perfluorooctane sulfonamidoacetic ac	2991-50-6	PFC/537M/PFA	ng/g-dry	NC	NC	0.23 U	0.24 U	0.28 U
N-Methyl perfluorooctane sulfonamidoacetic a	2355-31-9	PFC/537M/PFA	ng/g-dry	NC	NC	0.31 U	0.33 U	0.38 U
Perfluorobutane sulfonic acid (PFBS)	375-73-5	PFC/537M/PFA	ng/g-dry	NC	NC	0.26 U	0.27 U	0.31 U
Perfluorobutanoic acid (PFBA)	375-22-4	PFC/537M/PFA	ng/g-dry	NC	NC	0.45 U	0.47 U	0.55 U
Perfluorodecane sulfonic acid (PFDS)	335-77-3	PFC/537M/PFA	ng/g-dry	NC	NC	0.20 U	0.21 U	0.24 U
Perfluorodecanoic acid (PFDA)	335-76-2	PFC/537M/PFA	ng/g-dry	NC	NC	0.30 U	0.32 U	0.37 U
Perfluorododecanoic acid (PFDoDA)	307-55-1	PFC/537M/PFA	ng/g-dry	NC	NC	0.31 U	0.33 U	0.38 U
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	PFC/537M/PFA	ng/g-dry	NC	NC	0.071 U	0.074 U	0.087 U
Perfluoroheptanoic acid (PFHpA)	375-85-9	PFC/537M/PFA	ng/g-dry	NC	NC	0.22 U	0.23 U	0.27 U
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	PFC/537M/PFA	ng/g-dry	NC	NC	0.35 U	0.36 U	0.42 U
Perfluorohexanoic acid (PFHxA)	307-24-4	PFC/537M/PFA	ng/g-dry	NC	NC	0.36 U	0.37 U	0.44 U
Perfluorononanoic acid (PFNA)	375-95-1	PFC/537M/PFA	ng/g-dry	NC	NC	0.38 U	0.40 U	0.47 U
Perfluorooctane sulfonamide (FOSA)	754-91-6	PFC/537M/PFA	ng/g-dry	NC	NC	0.077 U	0.080 U	0.094 U
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	PFC/537M/PFA	ng/g-dry	NC	NC	0.15 U	0.16 U	1.7
Perfluorooctanoic acid (PFOA)	335-67-1	PFC/537M/PFA	ng/g-dry	NC	NC	0.15 U	0.16 U	0.27 J
Perfluoropentanoic acid (PFPeA)	2706-90-3	PFC/537M/PFA	ng/g-dry	NC	NC	0.24 U	0.26 U	0.30 U
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	PFC/537M/PFA	ng/g-dry	NC	NC	0.21 U	0.22 U	0.26 U
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	PFC/537M/PFA	ng/g-dry	NC	NC	0.24 U	0.26 U	0.30 U
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	PFC/537M/PFA	ng/g-dry	NC	NC	0.21 U	0.22 U	0.26 U
Total PFOA	--	--	ppb	33	500	0.15 U	0.16 U	0.27 J
Total PFOS	--	--	ppb	44	440	0.15 U	0.16 U	1.7

Notes:
NC - No criteria exists, NA - Not Available
U - Not detected at the detection limit shown
J - Estimated value

* - Soil cleanup objectives for PFOA and PFOS will be proposed in an upcoming revision to 6 NYCRR Part 375-6
January 2021 Sampling, Analysis, and Assessment of Per-and Polyfluoroalkyl Substances (PFAS) Guidance

Table 6 - Soil Boring Inorganics Analytical Results
Eastern Shoreline

ANALYTE	CAS NUMBER	METHOD	UNITS	NY Part 375 Restricted Residential SCO	NY Part 375 Commercial SCO	EB1-Native-10-12-1104202(RESULT	EB1-Fill-0.5-2-11042020 RESULT	EB2-0-2-11062020 RESULT
Metals / Inorganics								
Silver, Total	7440-22-	6010C/Ag T	mg/Kg-dr	180	1,500	0.2 U	0.2 U	0.2 U
Aluminum, Total	7429-90-	6010C/Al T	mg/Kg-dr	NC	NC	2670	8350	6510
Arsenic, Total	7440-38-	6010C/As T	mg/Kg-dr	16	16	2.6	5.9	8.1
Barium, Total	7440-39-	6010C/Ba T	mg/Kg-dr	400	400	11.1	49.2	113
Beryllium, Total	7440-41-	6010C/Be T	mg/Kg-dr	72	590	0.15 J	0.40	1.06
Calcium, Total	7440-70-	6010C/Ca T	mg/Kg-dr	NC	NC	6260	39100	18100
Cadmium, Total	7440-43-	6010C/Cd T	mg/Kg-dr	4.3	9.3	0.30 U	0.29 U	0.33 U
Cobalt, Total	7440-48-	6010C/Co T	mg/Kg-dr	NC	NC	3.1 J	7.0	4.5 J
Chromium, Total	7440-47-	6010C/Cr T	mg/Kg-dr	110*	NC	4.4	12.7	6.9
Copper, Total	7440-50-	6010C/Cu T	mg/Kg-dr	270	270	3.2	21.0	22.7
Iron, Total	7439-89-	6010C/Fe T	mg/Kg-dr	NC	NC	6300	18900	15600
Potassium, Total	2023695	6010C/K T	mg/Kg-dr	NC	NC	450	1350	680
Magnesium, Total	7439-95-	6010C/Mg T	mg/Kg-dr	NC	NC	3020	13700	5680
Manganese, Total	7439-96-	6010C/Mn T	mg/Kg-dr	2,000	10,000	94.1	374	262
Sodium, Total	7440-23-	6010C/Na T	mg/Kg-dr	NC	NC	140	130	460
Nickel, Total	7440-02-	6010C/Ni T	mg/Kg-dr	310	310	5.9	17.4	10.1
Lead, Total	7439-92-	6010C/Pb T	mg/Kg-dr	400	1,000	3.9 J	20.8	43.7
Antimony, Total	7440-36-	6010C/Sb T	mg/Kg-dr	NC	NC	0.7 U	0.7 U	0.8 U
Selenium, Total	7782-49-	6010C/Se T	mg/Kg-dr	180	1,500	0.7 U	0.7 U	0.8 U
Thallium, Total	7440-28-	6010C/Tl T	mg/Kg-dr	NC	NC	0.8 U	0.8 U	0.9 U
Vanadium, Total	7440-62-	6010C/V T	mg/Kg-dr	NC	NC	6.0 J	17.9	12.5
Zinc, Total	7440-66-	6010C/Zn T	mg/Kg-dr	10,000	10,000	18.3	61.4	45.3
Mercury, Total	7439-97-	7471B/Hg	mg/Kg-dr	0.81	2.8	0.017 U	0.026 J	0.057
Cyanide, Total	57-12-5	9012B/CN T	mg/Kg-dr	27	27	0.33 U	0.27 U	0.79

Notes:
NC - No criteria exists, NA - Not Available
U - Not detected at the detection limit shown
J - Estimated value
* - Hexavalent Chromium values used for conservative comparison. Results are Total Chromium.

Table 7 - Soil Boring TCLP Analytical Results
Eastern Shoreline

ANALYTE	CAS NUMBER	METHOD	UNITS	Maximum Concentration of Contaminants for the Toxicity Characteristic	EB1-Native-10-12-1104202 RESULT	B1-Fill-0.5-2-1104202 RESULT
TCLP Pesticides						
Chlordane	57-74-9	8081 TCLP	ug/L	30	10.0 U	10.0 U
Endrin	72-20-8	8081 TCLP	ug/L	20	0.40 U	0.40 U
gamma-BHC	58-89-9	8081 TCLP	ug/L	400	0.40 U	0.40 U
Heptachlor Epoxide	1024-57-3	8081 TCLP	ug/L	8	0.40 U	0.40 U
Heptachlor	76-44-8	8081 TCLP	ug/L	8	0.40 U	0.40 U
Methoxychlor	72-43-5	8081 TCLP	ug/L	10,000	0.40 U	0.40 U
Toxaphene	8001-35-2	8081 TCLP	ug/L	500	20.0 U	20.0 U
TCLP Herbicides						
2,4,5-TP	93-72-1	8151 TCLP	ug/L	1,000	4.0 U	4.0 U
2,4-D	94-75-7	8151 TCLP	ug/L	10,000	20.0 U	20.0 U
TCLP VOCs						
1,1-Dichloroethene	75-35-4	8260 TCLP	ug/L	700	20.0 U	20.0 U
1,2-Dichloroethane	107-06-2	8260 TCLP	ug/L	500	20.0 U	20.0 U
2-Butanone	78-93-3	8260 TCLP	ug/L	200,000	200 U	200 U
Benzene	71-43-2	8260 TCLP	ug/L	500	20.0 U	20.0 U
Carbon Tetrachloride	56-23-5	8260 TCLP	ug/L	500	20.0 U	20.0 U
Chlorobenzene	108-90-7	8260 TCLP	ug/L	100,000	20.0 U	20.0 U
Chloroform	67-66-3	8260 TCLP	ug/L	6,000	20.0 U	20.0 U
Tetrachloroethene	127-18-4	8260 TCLP	ug/L	700	20.0 U	20.0 U
Trichloroethene	79-01-6	8260 TCLP	ug/L	500	20.0 U	20.0 U
Vinyl Chloride	75-01-4	8260 TCLP	ug/L	200	20.0 U	20.0 U
TCLP SVOCs						
1,4-Dichlorobenzene	106-46-7	8270 TCLP	ug/L	7,500	60.0 U	60.0 U
2,4,5-Trichlorophenol	95-95-4	8270 TCLP	ug/L	400,000	60.0 U	60.0 U
2,4,6-Trichlorophenol	88-06-2	8270 TCLP	ug/L	2,000	60.0 U	60.0 U
2,4-Dinitrotoluene	99749-33-4	8270 TCLP	ug/L	130	60.0 U	60.0 U
Hexachlorobenzene	118-74-1	8270 TCLP	ug/L	130	60.0 U	60.0 U
Hexachlorobutadiene	87-68-3	8270 TCLP	ug/L	500	60.0 U	60.0 U
Hexachloroethane	67-72-1	8270 TCLP	ug/L	3,000	60.0 U	60.0 U
m,p-Cresols	15831-10-4	8270 TCLP	ug/L	200,000	60.0 U	60.0 U
Nitrobenzene	98-95-3	8270 TCLP	ug/L	2,000	60.0 U	60.0 U
o-Cresol	95-48-7	8270 TCLP	ug/L	200,000	60.0 U	60.0 U
Pentachlorophenol	87-86-5	8270 TCLP	ug/L	100,000	120 U	120 U
Pyridine	110-86-1	8270 TCLP	ug/L	5,000	60.0 U	60.0 U
CLP Metals/Inorganics						
Arsenic, Total	7440-38-2	6010 TCLP	mg/L	5	0.14 U	0.14 U
Barium, Total	7440-39-3	6010 TCLP	mg/L	100	2.8 U	2.8 U
Cadmium, Total	7440-43-9	6010 TCLP	mg/L	1	0.011 U	0.011 U
Chromium, Total	7440-47-3	6010 TCLP	mg/L	5	0.028 U	0.028 U
Lead, Total	7439-92-1	6010 TCLP	mg/L	5	0.033 U	0.033 U
Selenium, Total	7782-49-2	6010 TCLP	mg/L	1	0.11 U	0.11 U
Silver, Total	7440-22-4	6010 TCLP	mg/L	5	0.022 U	0.022 U
Mercury, Total	7439-97-6	Mercury on TCLP	mg/L	0.2	0.0020 U	0.0020 U
Sulfide/Cyanide						
Sulfide, Reactive	18496-25-8		mg/kg	500	6.2 U	6.2 U
Cyanide, Reactive	57-12-5		mg/kg	250	10 U	10 U
Ignitability						
Flashpoint/Ignitability	--		--	< 140°F	> 199°F	> 199°F

Notes:
NC - No criteria exists, NA - Not Available
U - Not detected at the detection limit shown
J - Estimated value

APPENDIX A
ANALYTICAL LABORATORY REPORTS

December 11, 2020 Service Request No:R2010360

Ms. Deborah Wright
O'Brien & Gere Engineers, Incorporated
333 West Washington Street
Syracuse, NY 13221

Laboratory Results for: Rochester REDI

Dear Ms.Wright,

Enclosed are the results of the sample(s) submitted to our laboratory November 06, 2020
For your reference, these analyses have been assigned our service request number **R2010360.**

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: Amanda Young

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

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI
Sample Matrix: Soil

Service Request: R2010360
Date Received: 11/03/2020 - 11/06/2020

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:

Five soil samples were received for analysis at ALS Environmental on 11/03/2020 - 11/06/2020. 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.

Semivoa GC:

No significant anomalies were noted with this analysis.

General Chemistry:

No significant anomalies were noted with this analysis.

Subcontracted Analytical Parameters:

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

Approved by _____ Date 12/11/2020

SAMPLE DETECTION SUMMARY

CLIENT ID: WGB-8-2-4-11032020			Lab ID: R2010360-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
pH	8.55				pH Units	9045D
Total Solids	85.8				Percent	ALS SOP

CLIENT ID: EB1-Native-10-12-11042020			Lab ID: R2010360-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
pH	8.23				pH Units	9045D
Total Solids	84.8				Percent	ALS SOP

CLIENT ID: EB1-Fill-0.5-2-11042020			Lab ID: R2010360-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
pH	8.30				pH Units	9045D
Total Solids	83.9				Percent	ALS SOP

CLIENT ID: WAB1-0-2-11062020			Lab ID: R2010360-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
pH	8.50				pH Units	9045D
Total Solids	87.3				Percent	ALS SOP

CLIENT ID: WCB2-0-2-11062020			Lab ID: R2010360-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
pH	7.65				pH Units	9045D
Total Solids	86.9				Percent	ALS SOP

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: Ramboll US Corp (Syracuse) **Service Request:**R2010360
Project: Rochester REDI/1940100197

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2010360-001	WGB-8-2-4-11032020	11/3/2020	0945
R2010360-002	EB1-Native-10-12-11042020	11/4/2020	
R2010360-003	EB1-Fill-0.5-2-11042020	11/4/2020	
R2010360-004	WAB1-0-2-11062020	11/6/2020	1145
R2010360-005	WCB2-0-2-11062020	11/6/2020	1225

CHAIN OF CUSTODY

ALS Environmental

1565 Jefferson Rd, Bldg 300 Ste 360, Rochester, NY 14623

CLIENT: Ramboll	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☒ Standard TAT (List due date): Standard TAT ☐ Non Standard or urgent TAT (List due date):
OFFICE: Rochester, NY		
PROJECT: Rochester REDI - 1940100197	ALS QUOTE NO.: Rochester REDI Quote	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7
ORDER NUMBER:		
PROJECT MANAGER: Deb Wright/Rick Duff	CONTACT PH: 315-646-4541	
SAMPLER: Veronica Davies	SAMPLER MOBILE: 856-470-0072	
COC emailed to ALS? (NO)	EDD FORMAT (or default):	
Email Reports to (will default to PM if no other addresses are listed): deborah.wright@ramboll.com/ amanda.young@ramboll.com		
Email Invoice to (will default to PM if no other addresses are listed): AccountspayableUS@Ramboll.com		

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comment:			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Veronica Davies			
DATE/TIME:11/3/20. 17:00	DATE/TIME:	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED Including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).												Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	TCLP SV 8270D, Pest 8081, Herb 8151, Metals 6010C	TCLP 8260C	Ignitability 1030	Reactivity 9010/ Corrosivity 1110	TCN 9014	PCB 8082			8260 VOCs + 10	SV 8270D +20, Pest 8081B, PCB 8082, SV 8270+20 SIM	TAL Metals 6010B, Hg 7471A, CN 9010B	PFAS 537.1		
	WGB-8-2-4-11032020	11/3/2020 9:45	S	Soil	12	x	x	x	x	x	x			x	x	x	x		Terra core 1 kit (4 conteiners)
				TOTAL															

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plas... Glass; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sul... Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Cooler Receipt and Preservation Check Form

R2010360 5
O'Brien & Gere Engineers, Incorporated
Rochester REDI

Project/Client Ramboll Folder Number

Cooler received on 11/13/2020 by: JH

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y N	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/ROC 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: 11/13/20 Time: 1700 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	5.8°						
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: R-002 by JH on 11/13/20 at 1700
5035 samples placed in storage location: R-F09 by J on 1 at J within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 11/14/2020 Time: 1700 by: JH

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		HNO_3								
≤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: 083120-ITW; 081020-ISR
Explain all Discrepancies/ Other Comments:
*No C.O.C provided.

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: JH
PC Secondary Review: MM 11/16/20 *significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

CHAIN OF CUSTODY

ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com

BRISBANE: 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

GOLDCOAST/NE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com

MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com

MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com

NEWCASTLE 5/585 Maitland Rd Mayfield West NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com

ORANGE 3/13 Quarry Place North Nowra NSW 2541 Ph: 02 4423 2063 E: nowra@alsglobal.com

PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com

WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

ALS Environmental

CLIENT: Ramboll	TURNAROUND REQUIREMENTS: ☒ Standard TAT (List due date): Standard TAT	FOR LABORATORY USE ONLY (Circle):
OFFICE: Rochester, NY	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes / No / N/A
PROJECT: Rochester REDI	ALS QUOTE NO.: Rochester REDI Quote	Free ice / frozen ice bricks present upon receipt? Yes / No / N/A
ORDER NUMBER:	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: Deb Wright/Rick Duff	CONTACT PH: 315-546-4541 OF: 1 2 3 4 5 6 7	Other comments:
SAMPLER: Veronica Davies	SAMPLER MOBILE: 8566700672	
COC emailed to ALS? (NO)	EDD FORMAT (or default):	
Email Reports to (will default to PM if no other addresses are listed): deborah.wright@ramboll.com/ amanda.young@ramboll.com		
Email Invoice to (will default to PM if no other addresses are listed): AccountspayableUS@Ramboll.com		

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Veronica Davies			
DATE/TIME: 11/04/2020 5:30 pm	DATE/TIME: 11/4/2020 1730	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).												Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	TCLP SV 8270D, Pest 8081, Herb 8151, Metals 6010C	TCLP 8260C	Ignitability 1030	Reactivity 9010/ Corrosivity 1110	TCN 9014	PCB 8082			8260 VOCs + 10	SV 8270D +20, Pest 8081B, PCB 8082, SV 8270+20 SIM	TAL Metals 6010B, Hg 7471A, , CN 9010B	PFAS 537.1	Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	EBI-Native-10-12-11042020		S	Soil	12	X	X	X	X	X	X			X	X	X	X	Terra core 1 kit (4 containers)
	EBI-Fill-05-2-11042020		S	Soil	12	X	X	X	X	X	X			X	X	X	X	Terra core 1 kit (4 containers)
				TOTAL														

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric [illegible] Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Cooler Receipt and Preservation Check Form

R2010360 5
O'Brien & Gere Engineers, Incorporated
Rochester REDI

Project/Client Rambol Folder Number

Cooler received on 11/4/2020 by: DW

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y (NP)	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/ROC 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: 11/4/2020 Time: 1740 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	7.90						
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: Rack by DW on 11/4/20 at 1740
5035 samples placed in storage location: Rack by J on 11/5 at 1410 within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 11/5/2020 Time: 1410 by: DW

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		HNO_3								
≤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	-	-						
		HCl	**	**						

**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: 081020-ISR, 081720-ITW

Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
(SUB)	HGFB
ALS	LL3541

Labels secondary reviewed by: DW

PC Secondary Review: JMS 11/11/20 *significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

ALS Environmental

CHAIN OF CUSTODY

ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com
BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com
MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
NEWCASTLE 5/585 Maitland Rd Mayfield West NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com
NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com
PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: [illegible]
WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: Ramboll	TURNAROUND REQUIREMENTS: ☒ Standard TAT (List due date): Standard TAT
OFFICE: Rochester, NY	(Standard TAT may be longer for some tests e.g.. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):
PROJECT: Rochester REDI	ALS QUOTE NO.: Rochester REDI Quote
ORDER NUMBER:	
PROJECT MANAGER: Deb Wright/Rick Duff	CONTACT PH: 315-546-4541
SAMPLER: Veronica Davies	SAMPLER MOBILE: 856 470 0172
COC emailed to ALS? (NO)	EDD FORMAT (or default):
Email Reports to (will default to PM if no other addresses are listed): deborah.wright@ramboll.com/ amanda.young@ramboll.com	
Email Invoice to (will default to PM if no other addresses are listed): AccountspayableUS@Ramboll.com	

COC SEQUENCE NUMBER (Circle)

COC: 8 2 3 4 5 6 7

OF: 8 2 3 4 5 6 7

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comment:			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Veronica Davies	[signature]		
DATE/TIME: 11/6/2020 3:00 PM	DATE/TIME: 11/6/2020 1515	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).													Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	TCLP SV 8270D, Pest 8081, Herb 8151, Metals 6010C	TCLP 8260C	Ignitability 1030	Reactivity 9010/ Corrosivity 1110	TCN 9014	PCB 8082			8260 VOCs + 10	SV 8270D +20, Pest 8081B, PCB 8082, SV 8270+20 SIM	TAL Metals 6010B, Hg 7471A, , CN 9010B	PFAS 537.1		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	EB2-0-2-11062020	11/06/2020 9:15am	S	Soil	7									X	X	X	X		Terra Kit 1 (4 containers)
	WAB1-0-2-11062020	11/06/2020 11:45	S	soil	12	X	X	X	X					X	X	X	X		Terra Kit 1 (4 containers)
	WCB2-0-2-11062020	11/06/2020 12:25	S	soil	12	X	X	X	X					X	X	X	X		Terra Kit 1 (4 containers)
				TOTAL															

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

R2010360 5

O'Brien & Gere Engineers, Incorporated

Rochester REDI

R2010360 5
O'Brien & Gere Engineers, Incorporated
Rochester REDI

Cooler Receipt and Preservation Check Form

Project/Client Barnhill Folder Number

Cooler received on 11/6/2020 by: @ **COURIER:** ALS UPS FEDEX VELOCITY (CLIENT)

1	Were **Custody seals** on outside of cooler?	Y (N)	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/ROC) 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: 11/6/2020 Time: 1520 ID: IR#7 (IR#10) From: (Temp Blank) Sample Bottle

Observed Temp (°C)	3.3						
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: R-002 by @ on 11/6/2020 at 1529
5035 samples placed in storage location: F-09 by @ on 11/6/2020 at 1530 within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 11/9/2020 Time: 1416 by: @

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		HNO_3								
≤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: 090720-ISR 081720-ITW

Explain all Discrepancies/ Other Comments:

COC filled out in pencil

All 5035 kit labels are blank

HPROD	BULK
HTR	FLDT
(SUB)	HGFB
ALS	LL3541

Labels secondary reviewed by: @

PC Secondary Review: STW 11/11/20 *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 Method Reporting Limit. Also known as:
LOQ Limit of Quantitation (LOQ)
The lowest concentration at which the method analyte may be reliably quantified under the method conditions.

MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).

LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.

ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State 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: Ramboll US Corp (Syracuse) **Service Request:** R2010360
Project: Rochester REDI/1940100197

Non-Certified Analytes

Certifying Agency: New York Department of Health

Method	Matrix	Analyte
ALS SOP	Soil	Total Solids

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010360
Project: Rochester REDI/1940100197

Sample Name: WGB-8-2-4-11032020 **Date Collected:** 11/3/20
Lab Code: R2010360-001 **Date Received:** 11/3/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
8082A	KSERCU	BALLGEIER
9012B	MROGERSON	MROGERSON
9045D		STALARICO
ALS SOP		KAWONG

Sample Name: EB1-Native-10-12-11042020 **Date Collected:** 11/4/20
Lab Code: R2010360-002 **Date Received:** 11/4/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
8082A	KSERCU	BALLGEIER
9012B	MROGERSON	MROGERSON
9045D		STALARICO
ALS SOP		KAWONG

Sample Name: EB1-Fill-0.5-2-11042020 **Date Collected:** 11/4/20
Lab Code: R2010360-003 **Date Received:** 11/4/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
8082A	KSERCU	BALLGEIER
9012B	MROGERSON	MROGERSON
9045D		STALARICO
ALS SOP		KAWONG

Sample Name: WAB1-0-2-11062020 **Date Collected:** 11/6/20
Lab Code: R2010360-004 **Date Received:** 11/6/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
9045D		STALARICO

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010360
Project:	Rochester REDI/1940100197		

Sample Name:	WAB1-0-2-11062020	**Date Collected:**	11/6/20
Lab Code:	R2010360-004	**Date Received:**	11/6/20
Sample Matrix:	Soil		

Analysis Method	Extracted/Digested By	Analyzed By
ALS SOP		KAWONG

Sample Name:	WCB2-0-2-11062020	**Date Collected:**	11/6/20
Lab Code:	R2010360-005	**Date Received:**	11/6/20
Sample Matrix:	Soil		

Analysis Method	Extracted/Digested By	Analyzed By
9045D		STALARICO
ALS SOP		KAWONG

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

Semivolatile Organic Compounds by GC

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

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010360
Project:	Rochester REDI/1940100197	**Date Collected:**	11/03/20 09:45
Sample Matrix:	Soil	**Date Received:**	11/03/20 17:00
Sample Name:	WGB-8-2-4-11032020	**Units:**	ug/Kg
Lab Code:	R2010360-001	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	38 U	38	1	11/11/20 00:43	11/6/20	
Aroclor 1221	77 U	77	1	11/11/20 00:43	11/6/20	
Aroclor 1232	38 U	38	1	11/11/20 00:43	11/6/20	
Aroclor 1242	38 U	38	1	11/11/20 00:43	11/6/20	
Aroclor 1248	38 U	38	1	11/11/20 00:43	11/6/20	
Aroclor 1254	38 U	38	1	11/11/20 00:43	11/6/20	
Aroclor 1260	38 U	38	1	11/11/20 00:43	11/6/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	63	22 - 128	11/11/20 00:43	
Tetrachloro-m-xylene	63	14 - 119	11/11/20 00:43	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010360
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Native-10-12-11042020	**Units:**	ug/Kg
Lab Code:	R2010360-002	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	38 U	38	1	11/11/20 01:03	11/6/20	
Aroclor 1221	77 U	77	1	11/11/20 01:03	11/6/20	
Aroclor 1232	38 U	38	1	11/11/20 01:03	11/6/20	
Aroclor 1242	38 U	38	1	11/11/20 01:03	11/6/20	
Aroclor 1248	38 U	38	1	11/11/20 01:03	11/6/20	
Aroclor 1254	38 U	38	1	11/11/20 01:03	11/6/20	
Aroclor 1260	38 U	38	1	11/11/20 01:03	11/6/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	62	22 - 128	11/11/20 01:03	
Tetrachloro-m-xylene	70	14 - 119	11/11/20 01:03	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010360
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Fill-0.5-2-11042020	**Units:**	ug/Kg
Lab Code:	R2010360-003	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	40 U	40	1	11/11/20 01:22	11/6/20	
Aroclor 1221	82 U	82	1	11/11/20 01:22	11/6/20	
Aroclor 1232	40 U	40	1	11/11/20 01:22	11/6/20	
Aroclor 1242	40 U	40	1	11/11/20 01:22	11/6/20	
Aroclor 1248	40 U	40	1	11/11/20 01:22	11/6/20	
Aroclor 1254	40 U	40	1	11/11/20 01:22	11/6/20	
Aroclor 1260	40 U	40	1	11/11/20 01:22	11/6/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	65	22 - 128	11/11/20 01:22	
Tetrachloro-m-xylene	67	14 - 119	11/11/20 01:22	

General Chemistry

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Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010360
Project:	Rochester REDI/1940100197	**Date Collected:**	11/03/20 09:45
Sample Matrix:	Soil	**Date Received:**	11/03/20 17:00
Sample Name:	WGB-8-2-4-11032020	**Basis:**	Dry
Lab Code:	R2010360-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	0.23 U	mg/Kg	0.23	1	11/12/20 12:03	11/11/20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010360
Project:	Rochester REDI/1940100197	**Date Collected:**	11/03/20 09:45
Sample Matrix:	Soil	**Date Received:**	11/03/20 17:00
Sample Name:	WGB-8-2-4-11032020	**Basis:**	As Received
Lab Code:	R2010360-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
pH	9045D	**8.55**	pH Units	-	1	11/09/20 12:00	NA	H
Total Solids	ALS SOP	**85.8**	Percent	-	1	11/13/20 14:00	NA	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010360
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Native-10-12-11042020	**Basis:**	Dry
Lab Code:	R2010360-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	0.33 U	mg/Kg	0.33	1	11/12/20 12:04	11/11/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010360
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Native-10-12-11042020	**Basis:**	As Received
Lab Code:	R2010360-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
pH	9045D	**8.23**	pH Units	-	1	11/09/20 12:00	NA	
Total Solids	ALS SOP	**84.8**	Percent	-	1	11/13/20 14:00	NA	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010360
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Fill-0.5-2-11042020	**Basis:**	Dry
Lab Code:	R2010360-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	0.27 U	mg/Kg	0.27	1	11/12/20 12:05	11/11/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010360
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Fill-0.5-2-11042020	**Basis:**	As Received
Lab Code:	R2010360-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
pH	9045D	**8.30**	pH Units	-	1	11/09/20 12:00	NA	
Total Solids	ALS SOP	**83.9**	Percent	-	1	11/13/20 14:00	NA	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010360
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 11:45
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WAB1-0-2-11062020	**Basis:**	As Received
Lab Code:	R2010360-004		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
pH	9045D	**8.50**	pH Units	-	1	11/12/20 14:45	H
Total Solids	ALS SOP	**87.3**	Percent	-	1	11/13/20 14:00	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010360
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 12:25
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WCB2-0-2-11062020	**Basis:**	As Received
Lab Code:	R2010360-005		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
pH	9045D	**7.65**	pH Units	-	1	11/12/20 14:45	H
Total Solids	ALS SOP	**86.9**	Percent	-	1	11/13/20 14:00	

QC Summary Forms

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Semivolatile Organic Compounds by GC

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Client: Ramboll US Corp (Syracuse) **Service Request:** R2010360
Project: Rochester REDI/1940100197
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Extraction Method: EPA 3541

Sample Name	Lab Code	Decachlorobiphenyl 22-128	Tetrachloro-m-xylene 14-119
WGB-8-2-4-11032020	R2010360-001	63	63
EB1-Native-10-12-11042020	R2010360-002	62	70
EB1-Fill-0.5-2-11042020	R2010360-003	65	67
Method Blank	RQ2013587-01	79	68
Lab Control Sample	RQ2013587-02	75	69
Duplicate Lab Control Sample	RQ2013587-03	72	79

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010360
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2013587-01	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	34 U	34	1	11/10/20 19:29	11/6/20	
Aroclor 1221	69 U	69	1	11/10/20 19:29	11/6/20	
Aroclor 1232	34 U	34	1	11/10/20 19:29	11/6/20	
Aroclor 1242	34 U	34	1	11/10/20 19:29	11/6/20	
Aroclor 1248	34 U	34	1	11/10/20 19:29	11/6/20	
Aroclor 1254	34 U	34	1	11/10/20 19:29	11/6/20	
Aroclor 1260	34 U	34	1	11/10/20 19:29	11/6/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	79	22 - 128	11/10/20 19:29	
Tetrachloro-m-xylene	68	14 - 119	11/10/20 19:29	

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010360
Date Analyzed: 11/10/20

Duplicate Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs) by GC

Units:ug/Kg
Basis: Dry

			Lab Control Sample			Duplicate Lab Control Sample				
			RQ2013587-02			RQ2013587-03				
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1016	8082A	114	164	69	137	170	80	41-127	19	30
Aroclor 1260	8082A	133	164	81	145	170	85	37-127	9	30

General Chemistry

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Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010360
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	Dry
Lab Code:	R2010360-MB		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	0.30 U	mg/Kg	0.30	1	11/12/20 11:51	11/11/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010360
Project	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20
		Date Analyzed:	11/09/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	EB1-Fill-0.5-2-11042020	**Units:**	pH Units
Lab Code:	R2010360-003	**Basis:**	As Received

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample R2010360-003DUP Result	Average	RPD	RPD Limit
pH	9045D	-	8.30	8.30	8.30	<1	0.10

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.

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010360
Date Analyzed: 11/12/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/Kg
Basis: Dry

Lab Control Sample
R2010360-LCS1

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Cyanide, Total	9012B	2.87	3.00	96	85-115

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010360
Date Analyzed: 11/12/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/Kg
Basis: Dry

Lab Control Sample
R2010360-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Cyanide, Total	9012B	16.9	18.0	94	85-115

Subcontracted Analytical Parameters

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

November 23, 2020

Reports and Invoices
ALS Environmental
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Building 300, Suite 360
Rochester, NY 14623

Certificate of Analysis

Project Name:	**Custom EDD & QC, No MDL**	Workorder:	**3140795**
Purchase Order:	**58-R2010360**	Workorder ID:	**AER528|R2010360**

Dear Reports Invoices:

Enclosed are the analytical results for samples received by the laboratory on Friday, November 13, 2020.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Sarah S Leung (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. Michael Chevalier , Mr. Brady Kalkman , Ms. Janice Jaeger

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Ms. Sarah S Leung
Project Coordinator

SAMPLE SUMMARY

Workorder: 3140795 AER528|R2010360

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3140795001	WGC-8-2-4-11032020	Solid	11/3/2020 09:45	11/13/2020 08:50	Collected by Client
3140795002	EB1-Native-10-12-11042020	Solid	11/4/2020 09:45	11/13/2020 08:50	Collected by Client
3140795003	EB1-Fill-0.5-2-11042020	Solid	11/4/2020 00:00	11/13/2020 08:50	Collected by Client
3140795004	WAB1-0-2-11062020	Solid	11/6/2020 11:45	11/13/2020 08:50	Collected by Client
3140795005	WCB2-0-2-11062020	Solid	11/6/2020 12:25	11/13/2020 08:50	Collected by Client

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

SAMPLE SUMMARY

Workorder: 3140795 AER528|R2010360

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
-- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

PROJECT SUMMARY

Workorder: 3140795 AER528|R2010360

Sample Comments

Lab ID: 3140795001 **Sample ID:** WGC-8-2-4-11032020 **Sample Type:** SAMPLE

The analysis for ignitability is performed using a modified method 1010A that provides a flashpoint temperature for a solid sample.

Lab ID: 3140795002 **Sample ID:** EB1-Native-10-12-11042020 **Sample Type:** SAMPLE

The analysis for ignitability is performed using a modified method 1010A that provides a flashpoint temperature for a solid sample.

Lab ID: 3140795003 **Sample ID:** EB1-Fill-0.5-2-11042020 **Sample Type:** SAMPLE

The analysis for ignitability is performed using a modified method 1010A that provides a flashpoint temperature for a solid sample.

Lab ID: 3140795004 **Sample ID:** WAB1-0-2-11062020 **Sample Type:** SAMPLE

The analysis for ignitability is performed using a modified method 1010A that provides a flashpoint temperature for a solid sample.

Lab ID: 3140795005 **Sample ID:** WCB2-0-2-11062020 **Sample Type:** SAMPLE

The analysis for ignitability is performed using a modified method 1010A that provides a flashpoint temperature for a solid sample.

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3140795 AER528|R2010360

Lab ID: **3140795001** Date Collected: 11/3/2020 09:45 Matrix: Solid

Sample ID: **WGC-8-2-4-11032020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 VOLATILE ORGANIC										
Benzene	ND		ug/L	20.0	SW846 8260C			11/19/20 11:47	DPC	C
2-Butanone	ND		ug/L	200	SW846 8260C			11/19/20 11:47	DPC	C
Carbon Tetrachloride	ND		ug/L	20.0	SW846 8260C			11/19/20 11:47	DPC	C
Chlorobenzene	ND		ug/L	20.0	SW846 8260C			11/19/20 11:47	DPC	C
Chloroform	ND		ug/L	20.0	SW846 8260C			11/19/20 11:47	DPC	C
1,2-Dichloroethane	ND		ug/L	20.0	SW846 8260C			11/19/20 11:47	DPC	C
1,1-Dichloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 11:47	DPC	C
Tetrachloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 11:47	DPC	C
Trichloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 11:47	DPC	C
Vinyl Chloride	ND		ug/L	20.0	SW846 8260C			11/19/20 11:47	DPC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	94.9		%	62 - 133	SW846 8260C			11/19/20 11:47	DPC	C
4-Bromofluorobenzene (S)	104		%	79 - 114	SW846 8260C			11/19/20 11:47	DPC	C
Dibromofluoromethane (S)	92.2		%	78 - 116	SW846 8260C			11/19/20 11:47	DPC	C
Toluene-d8 (S)	93		%	76 - 127	SW846 8260C			11/19/20 11:47	DPC	C
TCLP EPA 1311 PESTICIDES										
gamma-BHC	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 15:55	KJH	A
Chlordane	ND		ug/L	10.0	SW846 8081B	11/19/20 13:10	LEH	11/20/20 15:55	KJH	A
Endrin	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 15:55	KJH	A
Heptachlor	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 15:55	KJH	A
Heptachlor Epoxide	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 15:55	KJH	A
Methoxychlor	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 15:55	KJH	A
Toxaphene	ND		ug/L	20.0	SW846 8081B	11/19/20 13:10	LEH	11/20/20 15:55	KJH	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	107		%	30 - 140	SW846 8081B	11/19/20 13:10	LEH	11/20/20 15:55	KJH	A
Decachlorobiphenyl. (S)	104		%	30 - 140	SW846 8081B	11/19/20 13:10	LEH	11/20/20 15:55	KJH	A
Tetrachloro-m-xylene (S)	27.6	5	%	30 - 123	SW846 8081B	11/19/20 13:10	LEH	11/20/20 15:55	KJH	A
Tetrachloro-m-xylene. (S)	24.2	6	%	30 - 123	SW846 8081B	11/19/20 13:10	LEH	11/20/20 15:55	KJH	A
WET CHEMISTRY										
Cyanide, Reactive	ND		mg/kg	10	SW-846 7.3CN	11/15/20 14:45	VXF	11/16/20 14:15	CTD	A
Ignitability	See Comment	1,2, 3	Deg. F		SW-846 1010AM			11/20/20 07:30	II	C
Moisture	13.7		%	0.1	S2540G-11			11/14/20 06:15	AXD	
Sulfide, Reactive	ND		mg/kg	6.2	SW846 7.3	11/15/20 14:45	VXF	11/16/20 00:12	VXF	A
Total Solids	86.3	4	%	0.1	S2540G-11			11/14/20 06:15	AXD	

ANALYTICAL RESULTS

Workorder: 3140795 AER528|R2010360

Lab ID: **3140795001** Date Collected: 11/3/2020 09:45 Matrix: Solid

Sample ID: **WGC-8-2-4-11032020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 METALS										
Arsenic, Total	ND		mg/L	0.14	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:10	SRT	A
Barium, Total	ND		mg/L	2.8	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:10	SRT	A
Cadmium, Total	ND		mg/L	0.011	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:10	SRT	A
Chromium, Total	ND		mg/L	0.028	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:10	SRT	A
Lead, Total	ND		mg/L	0.033	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:10	SRT	A
Mercury, Total	ND		mg/L	0.0020	SW846 7470A	11/19/20 05:54	MSA	11/19/20 16:34	MSA	A
Selenium, Total	ND		mg/L	0.11	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:10	SRT	A
Silver, Total	ND		mg/L	0.022	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:10	SRT	A
TCLP EPA 1311 SEMI-VOLATILES										
mp-Cresol	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:10	GEC	C
o-Cresol	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:10	GEC	C
1,4-Dichlorobenzene	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:10	GEC	C
2,4-Dinitrotoluene	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:10	GEC	C
Hexachlorobenzene	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:10	GEC	C
Hexachlorobutadiene	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:10	GEC	C
Hexachloroethane	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:10	GEC	C
Nitrobenzene	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:10	GEC	C
Pentachlorophenol	ND		ug/L	120	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:10	GEC	C
Pyridine	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:10	GEC	C
2,4,5-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:10	GEC	C
2,4,6-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:10	GEC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	89.3		%	47 - 128	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:10	GEC	C
2-Fluorobiphenyl (S)	70.6		%	52 - 118	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:10	GEC	C
2-Fluorophenol (S)	61		%	20 - 87	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:10	GEC	C
Nitrobenzene-d5 (S)	83.3		%	27 - 139	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:10	GEC	C
Phenol-d5 (S)	41.1		%	10 - 81	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:10	GEC	C
Terphenyl-d14 (S)	104		%	46 - 133	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:10	GEC	C
TCLP EPA 1311 HERBICIDES										
2,4-D	ND		ug/L	20.0	SW846 8151A	11/19/20 16:25	DXL	11/20/20 15:45	AK	A
2,4,5-TP	ND		ug/L	4.0	SW846 8151A	11/19/20 16:25	DXL	11/20/20 15:45	AK	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4-Dichlorophenylacetic acid (S)	83.3		%	14 - 172	SW846 8151A	11/19/20 16:25	DXL	11/20/20 15:45	AK	A

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3140795 AER528|R2010360

Lab ID: **3140795001** Date Collected: 11/3/2020 09:45 Matrix: Solid

Sample ID: **WGC-8-2-4-11032020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*

Ms. Sarah S Leung
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3140795 AER528|R2010360

Lab ID: **3140795002** Date Collected: 11/4/2020 09:45 Matrix: Solid

Sample ID: **EB1-Native-10-12-11042020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 VOLATILE ORGANIC										
Benzene	ND		ug/L	20.0	SW846 8260C			11/19/20 12:10	DPC	C
2-Butanone	ND		ug/L	200	SW846 8260C			11/19/20 12:10	DPC	C
Carbon Tetrachloride	ND		ug/L	20.0	SW846 8260C			11/19/20 12:10	DPC	C
Chlorobenzene	ND		ug/L	20.0	SW846 8260C			11/19/20 12:10	DPC	C
Chloroform	ND		ug/L	20.0	SW846 8260C			11/19/20 12:10	DPC	C
1,2-Dichloroethane	ND		ug/L	20.0	SW846 8260C			11/19/20 12:10	DPC	C
1,1-Dichloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 12:10	DPC	C
Tetrachloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 12:10	DPC	C
Trichloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 12:10	DPC	C
Vinyl Chloride	ND		ug/L	20.0	SW846 8260C			11/19/20 12:10	DPC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	96		%	62 - 133	SW846 8260C			11/19/20 12:10	DPC	C
4-Bromofluorobenzene (S)	102		%	79 - 114	SW846 8260C			11/19/20 12:10	DPC	C
Dibromofluoromethane (S)	91.8		%	78 - 116	SW846 8260C			11/19/20 12:10	DPC	C
Toluene-d8 (S)	91.7		%	76 - 127	SW846 8260C			11/19/20 12:10	DPC	C
TCLP EPA 1311 PESTICIDES										
gamma-BHC	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:16	KJH	A
Chlordane	ND		ug/L	10.0	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:16	KJH	A
Endrin	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:16	KJH	A
Heptachlor	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:16	KJH	A
Heptachlor Epoxide	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:16	KJH	A
Methoxychlor	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:16	KJH	A
Toxaphene	ND		ug/L	20.0	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:16	KJH	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	119		%	30 - 140	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:16	KJH	A
Decachlorobiphenyl. (S)	115		%	30 - 140	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:16	KJH	A
Tetrachloro-m-xylene (S)	26.2	5	%	30 - 123	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:16	KJH	A
Tetrachloro-m-xylene. (S)	25.7	6	%	30 - 123	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:16	KJH	A
WET CHEMISTRY										
Cyanide, Reactive	ND		mg/kg	10	SW-846 7.3CN	11/15/20 14:45	VXF	11/16/20 14:15	CTD	A
Ignitability	See Comment	1,2, 3	Deg. F		SW-846 1010AM			11/20/20 07:30	II	C
Moisture	15.7		%	0.1	S2540G-11			11/14/20 06:15	AXD	
Sulfide, Reactive	ND		mg/kg	6.2	SW846 7.3	11/15/20 14:45	VXF	11/16/20 00:12	VXF	A
Total Solids	84.3	4	%	0.1	S2540G-11			11/14/20 06:15	AXD	

ANALYTICAL RESULTS

Workorder: 3140795 AER528|R2010360

Lab ID: **3140795002** Date Collected: 11/4/2020 09:45 Matrix: Solid

Sample ID: **EB1-Native-10-12-11042020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 METALS										
Arsenic, Total	ND		mg/L	0.14	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:13	SRT	A
Barium, Total	ND		mg/L	2.8	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:13	SRT	A
Cadmium, Total	ND		mg/L	0.011	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:13	SRT	A
Chromium, Total	ND		mg/L	0.028	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:13	SRT	A
Lead, Total	ND		mg/L	0.033	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:13	SRT	A
Mercury, Total	ND		mg/L	0.0020	SW846 7470A	11/19/20 05:54	MSA	11/19/20 16:35	MSA	A
Selenium, Total	ND		mg/L	0.11	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:13	SRT	A
Silver, Total	ND		mg/L	0.022	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:13	SRT	A
TCLP EPA 1311 SEMI-VOLATILES										
mp-Cresol	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:37	GEC	C
o-Cresol	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:37	GEC	C
1,4-Dichlorobenzene	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:37	GEC	C
2,4-Dinitrotoluene	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:37	GEC	C
Hexachlorobenzene	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:37	GEC	C
Hexachlorobutadiene	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:37	GEC	C
Hexachloroethane	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:37	GEC	C
Nitrobenzene	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:37	GEC	C
Pentachlorophenol	ND		ug/L	120	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:37	GEC	C
Pyridine	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:37	GEC	C
2,4,5-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:37	GEC	C
2,4,6-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:37	GEC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	89.9		%	47 - 128	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:37	GEC	C
2-Fluorobiphenyl (S)	70.2		%	52 - 118	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:37	GEC	C
2-Fluorophenol (S)	58.4		%	20 - 87	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:37	GEC	C
Nitrobenzene-d5 (S)	84.5		%	27 - 139	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:37	GEC	C
Phenol-d5 (S)	38.7		%	10 - 81	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:37	GEC	C
Terphenyl-d14 (S)	96.7		%	46 - 133	SW846 8270D	11/18/20 13:50	MXL	11/20/20 07:37	GEC	C
TCLP EPA 1311 HERBICIDES										
2,4-D	ND		ug/L	20.0	SW846 8151A	11/19/20 16:25	DXL	11/20/20 16:11	AK	A
2,4,5-TP	ND		ug/L	4.0	SW846 8151A	11/19/20 16:25	DXL	11/20/20 16:11	AK	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4-Dichlorophenylacetic acid (S)	83.7		%	14 - 172	SW846 8151A	11/19/20 16:25	DXL	11/20/20 16:11	AK	A

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3140795 AER528|R2010360

Lab ID: **3140795002** Date Collected: 11/4/2020 09:45 Matrix: Solid

Sample ID: **EB1-Native-10-12-11042020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*

Ms. Sarah S Leung
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3140795 AER528|R2010360

Lab ID: **3140795003** Date Collected: 11/4/2020 00:00 Matrix: Solid

Sample ID: **EB1-Fill-0.5-2-11042020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 VOLATILE ORGANIC										
Benzene	ND		ug/L	20.0	SW846 8260C			11/19/20 12:32	DPC	C
2-Butanone	ND		ug/L	200	SW846 8260C			11/19/20 12:32	DPC	C
Carbon Tetrachloride	ND		ug/L	20.0	SW846 8260C			11/19/20 12:32	DPC	C
Chlorobenzene	ND		ug/L	20.0	SW846 8260C			11/19/20 12:32	DPC	C
Chloroform	ND		ug/L	20.0	SW846 8260C			11/19/20 12:32	DPC	C
1,2-Dichloroethane	ND		ug/L	20.0	SW846 8260C			11/19/20 12:32	DPC	C
1,1-Dichloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 12:32	DPC	C
Tetrachloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 12:32	DPC	C
Trichloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 12:32	DPC	C
Vinyl Chloride	ND		ug/L	20.0	SW846 8260C			11/19/20 12:32	DPC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	93.5		%	62 - 133	SW846 8260C			11/19/20 12:32	DPC	C
4-Bromofluorobenzene (S)	101		%	79 - 114	SW846 8260C			11/19/20 12:32	DPC	C
Dibromofluoromethane (S)	90.4		%	78 - 116	SW846 8260C			11/19/20 12:32	DPC	C
Toluene-d8 (S)	91.6		%	76 - 127	SW846 8260C			11/19/20 12:32	DPC	C
TCLP EPA 1311 PESTICIDES										
gamma-BHC	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:06	KJH	A
Chlordane	ND		ug/L	10.0	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:06	KJH	A
Endrin	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:06	KJH	A
Heptachlor	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:06	KJH	A
Heptachlor Epoxide	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:06	KJH	A
Methoxychlor	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:06	KJH	A
Toxaphene	ND		ug/L	20.0	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:06	KJH	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	149	5	%	30 - 140	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:06	KJH	A
Decachlorobiphenyl. (S)	146	6	%	30 - 140	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:06	KJH	A
Tetrachloro-m-xylene (S)	44		%	30 - 123	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:06	KJH	A
Tetrachloro-m-xylene. (S)	43.6		%	30 - 123	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:06	KJH	A
WET CHEMISTRY										
Cyanide, Reactive	ND		mg/kg	10	SW-846 7.3CN	11/15/20 14:45	VXF	11/16/20 14:15	CTD	A
Ignitability	See Comment	1,2, 3	Deg. F		SW-846 1010AM			11/20/20 07:30	II	C
Moisture	16.7		%	0.1	S2540G-11			11/14/20 06:15	AXD	
Sulfide, Reactive	ND		mg/kg	6.2	SW846 7.3	11/15/20 14:45	VXF	11/16/20 00:12	VXF	A
Total Solids	83.3	4	%	0.1	S2540G-11			11/14/20 06:15	AXD	

ANALYTICAL RESULTS

Workorder: 3140795 AER528|R2010360

Lab ID: **3140795003** Date Collected: 11/4/2020 00:00 Matrix: Solid

Sample ID: **EB1-Fill-0.5-2-11042020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 METALS										
Arsenic, Total	ND		mg/L	0.14	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:24	SRT	A
Barium, Total	ND		mg/L	2.8	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:24	SRT	A
Cadmium, Total	ND		mg/L	0.011	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:24	SRT	A
Chromium, Total	ND		mg/L	0.028	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:24	SRT	A
Lead, Total	ND		mg/L	0.033	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:24	SRT	A
Mercury, Total	ND		mg/L	0.0020	SW846 7470A	11/19/20 05:54	MSA	11/19/20 16:36	MSA	A
Selenium, Total	ND		mg/L	0.11	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:24	SRT	A
Silver, Total	ND		mg/L	0.022	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:24	SRT	A
TCLP EPA 1311 SEMI-VOLATILES										
mp-Cresol	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 08:03	GEC	C
o-Cresol	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 08:03	GEC	C
1,4-Dichlorobenzene	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 08:03	GEC	C
2,4-Dinitrotoluene	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 08:03	GEC	C
Hexachlorobenzene	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 08:03	GEC	C
Hexachlorobutadiene	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 08:03	GEC	C
Hexachloroethane	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 08:03	GEC	C
Nitrobenzene	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 08:03	GEC	C
Pentachlorophenol	ND		ug/L	120	SW846 8270D	11/18/20 13:50	MXL	11/20/20 08:03	GEC	C
Pyridine	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 08:03	GEC	C
2,4,5-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 08:03	GEC	C
2,4,6-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	11/18/20 13:50	MXL	11/20/20 08:03	GEC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	92.5		%	47 - 128	SW846 8270D	11/18/20 13:50	MXL	11/20/20 08:03	GEC	C
2-Fluorobiphenyl (S)	71		%	52 - 118	SW846 8270D	11/18/20 13:50	MXL	11/20/20 08:03	GEC	C
2-Fluorophenol (S)	55.8		%	20 - 87	SW846 8270D	11/18/20 13:50	MXL	11/20/20 08:03	GEC	C
Nitrobenzene-d5 (S)	84.4		%	27 - 139	SW846 8270D	11/18/20 13:50	MXL	11/20/20 08:03	GEC	C
Phenol-d5 (S)	37		%	10 - 81	SW846 8270D	11/18/20 13:50	MXL	11/20/20 08:03	GEC	C
Terphenyl-d14 (S)	104		%	46 - 133	SW846 8270D	11/18/20 13:50	MXL	11/20/20 08:03	GEC	C
TCLP EPA 1311 HERBICIDES										
2,4-D	ND		ug/L	20.0	SW846 8151A	11/19/20 16:25	DXL	11/20/20 16:37	AK	A
2,4,5-TP	ND		ug/L	4.0	SW846 8151A	11/19/20 16:25	DXL	11/20/20 16:37	AK	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4-Dichlorophenylacetic acid (S)	87.6		%	14 - 172	SW846 8151A	11/19/20 16:25	DXL	11/20/20 16:37	AK	A

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3140795 AER528|R2010360

Lab ID: **3140795003** Date Collected: 11/4/2020 00:00 Matrix: Solid

Sample ID: **EB1-Fill-0.5-2-11042020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*

Ms. Sarah S Leung
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3140795 AER528|R2010360

Lab ID: **3140795004** Date Collected: 11/6/2020 11:45 Matrix: Solid

Sample ID: **WAB1-0-2-11062020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 VOLATILE ORGANIC										
Benzene	ND		ug/L	20.0	SW846 8260C			11/19/20 12:55	DPC	C
2-Butanone	ND		ug/L	200	SW846 8260C			11/19/20 12:55	DPC	C
Carbon Tetrachloride	ND		ug/L	20.0	SW846 8260C			11/19/20 12:55	DPC	C
Chlorobenzene	ND		ug/L	20.0	SW846 8260C			11/19/20 12:55	DPC	C
Chloroform	ND		ug/L	20.0	SW846 8260C			11/19/20 12:55	DPC	C
1,2-Dichloroethane	ND		ug/L	20.0	SW846 8260C			11/19/20 12:55	DPC	C
1,1-Dichloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 12:55	DPC	C
Tetrachloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 12:55	DPC	C
Trichloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 12:55	DPC	C
Vinyl Chloride	ND		ug/L	20.0	SW846 8260C			11/19/20 12:55	DPC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	93.9		%	62 - 133	SW846 8260C			11/19/20 12:55	DPC	C
4-Bromofluorobenzene (S)	103		%	79 - 114	SW846 8260C			11/19/20 12:55	DPC	C
Dibromofluoromethane (S)	92.4		%	78 - 116	SW846 8260C			11/19/20 12:55	DPC	C
Toluene-d8 (S)	90.6		%	76 - 127	SW846 8260C			11/19/20 12:55	DPC	C
TCLP EPA 1311 PESTICIDES										
gamma-BHC	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:27	KJH	A
Chlordane	ND		ug/L	10.0	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:27	KJH	A
Endrin	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:27	KJH	A
Heptachlor	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:27	KJH	A
Heptachlor Epoxide	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:27	KJH	A
Methoxychlor	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:27	KJH	A
Toxaphene	ND		ug/L	20.0	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:27	KJH	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	114		%	30 - 140	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:27	KJH	A
Decachlorobiphenyl. (S)	111		%	30 - 140	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:27	KJH	A
Tetrachloro-m-xylene (S)	28.3	7	%	30 - 123	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:27	KJH	A
Tetrachloro-m-xylene. (S)	26.6	8	%	30 - 123	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:27	KJH	A
WET CHEMISTRY										
Cyanide, Reactive	ND		mg/kg	10	SW-846 7.3CN	11/15/20 14:45	VXF	11/16/20 14:15	CTD	A
Ignitability	See Comment	1,2	Deg. F		SW-846 1010AM			11/20/20 07:30	II	C
Moisture	10.5		%	0.1	S2540G-11			11/14/20 06:15	AXD	
Sulfide, Reactive	ND		mg/kg	6.2	SW846 7.3	11/15/20 14:45	VXF	11/16/20 00:12	VXF	A
Total Solids	89.5	6	%	0.1	S2540G-11			11/14/20 06:15	AXD	

ANALYTICAL RESULTS

Workorder: 3140795 AER528|R2010360

Lab ID: **3140795004** Date Collected: 11/6/2020 11:45 Matrix: Solid

Sample ID: **WAB1-0-2-11062020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 METALS										
Arsenic, Total	ND		mg/L	0.14	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:28	SRT	A
Barium, Total	ND		mg/L	2.8	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:28	SRT	A
Cadmium, Total	ND		mg/L	0.011	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:28	SRT	A
Chromium, Total	ND		mg/L	0.028	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:28	SRT	A
Lead, Total	ND		mg/L	0.033	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:28	SRT	A
Mercury, Total	ND		mg/L	0.0020	SW846 7470A	11/19/20 05:54	MSA	11/19/20 16:37	MSA	A
Selenium, Total	ND		mg/L	0.11	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:28	SRT	A
Silver, Total	ND		mg/L	0.022	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:28	SRT	A
TCLP EPA 1311 SEMI-VOLATILES										
mp-Cresol	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:15	DHF	C
o-Cresol	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:15	DHF	C
1,4-Dichlorobenzene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:15	DHF	C
2,4-Dinitrotoluene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:15	DHF	C
Hexachlorobenzene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:15	DHF	C
Hexachlorobutadiene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:15	DHF	C
Hexachloroethane	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:15	DHF	C
Nitrobenzene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:15	DHF	C
Pentachlorophenol	ND		ug/L	120	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:15	DHF	C
Pyridine	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:15	DHF	C
2,4,5-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:15	DHF	C
2,4,6-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:15	DHF	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	73.1		%	47 - 128	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:15	DHF	C
2-Fluorobiphenyl (S)	36.5	3,4,5	%	52 - 118	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:15	DHF	C
2-Fluorophenol (S)	41.2		%	20 - 87	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:15	DHF	C
Nitrobenzene-d5 (S)	72.3		%	27 - 139	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:15	DHF	C
Phenol-d5 (S)	28.6		%	10 - 81	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:15	DHF	C
Terphenyl-d14 (S)	95.4		%	46 - 133	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:15	DHF	C
TCLP EPA 1311 HERBICIDES										
2,4-D	ND		ug/L	20.0	SW846 8151A	11/19/20 16:25	DXL	11/20/20 17:04	AK	A
2,4,5-TP	ND		ug/L	4.0	SW846 8151A	11/19/20 16:25	DXL	11/20/20 17:04	AK	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4-Dichlorophenylacetic acid (S)	77.7		%	14 - 172	SW846 8151A	11/19/20 16:25	DXL	11/20/20 17:04	AK	A

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ANALYTICAL RESULTS

Workorder: 3140795 AER528|R2010360

Lab ID: **3140795004** Date Collected: 11/6/2020 11:45 Matrix: Solid

Sample ID: **WAB1-0-2-11062020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*

Ms. Sarah S Leung
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3140795 AER528|R2010360

Lab ID: **3140795005** Date Collected: 11/6/2020 12:25 Matrix: Solid

Sample ID: **WCB2-0-2-11062020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 VOLATILE ORGANIC										
Benzene	ND		ug/L	20.0	SW846 8260C			11/19/20 13:17	DPC	C
2-Butanone	ND		ug/L	200	SW846 8260C			11/19/20 13:17	DPC	C
Carbon Tetrachloride	ND		ug/L	20.0	SW846 8260C			11/19/20 13:17	DPC	C
Chlorobenzene	ND		ug/L	20.0	SW846 8260C			11/19/20 13:17	DPC	C
Chloroform	ND		ug/L	20.0	SW846 8260C			11/19/20 13:17	DPC	C
1,2-Dichloroethane	ND		ug/L	20.0	SW846 8260C			11/19/20 13:17	DPC	C
1,1-Dichloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 13:17	DPC	C
Tetrachloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 13:17	DPC	C
Trichloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 13:17	DPC	C
Vinyl Chloride	ND		ug/L	20.0	SW846 8260C			11/19/20 13:17	DPC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	95.1		%	62 - 133	SW846 8260C			11/19/20 13:17	DPC	C
4-Bromofluorobenzene (S)	102		%	79 - 114	SW846 8260C			11/19/20 13:17	DPC	C
Dibromofluoromethane (S)	92.2		%	78 - 116	SW846 8260C			11/19/20 13:17	DPC	C
Toluene-d8 (S)	90.6		%	76 - 127	SW846 8260C			11/19/20 13:17	DPC	C
TCLP EPA 1311 PESTICIDES										
gamma-BHC	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:37	KJH	A
Chlordane	ND		ug/L	10.0	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:37	KJH	A
Endrin	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:37	KJH	A
Heptachlor	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:37	KJH	A
Heptachlor Epoxide	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:37	KJH	A
Methoxychlor	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:37	KJH	A
Toxaphene	ND		ug/L	20.0	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:37	KJH	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	125		%	30 - 140	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:37	KJH	A
Decachlorobiphenyl. (S)	123		%	30 - 140	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:37	KJH	A
Tetrachloro-m-xylene (S)	32.7		%	30 - 123	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:37	KJH	A
Tetrachloro-m-xylene. (S)	33.2		%	30 - 123	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:37	KJH	A
WET CHEMISTRY										
Cyanide, Reactive	ND		mg/kg	10	SW-846 7.3CN	11/15/20 14:45	VXF	11/16/20 14:15	CTD	A
Ignitability	See Comment	1,2	Deg. F		SW-846 1010AM			11/20/20 07:30	II	C
Moisture	13.5		%	0.1	S2540G-11			11/14/20 06:15	AXD	
Sulfide, Reactive	ND		mg/kg	6.2	SW846 7.3	11/15/20 14:45	VXF	11/16/20 00:12	VXF	A
Total Solids	86.5	6	%	0.1	S2540G-11			11/14/20 06:15	AXD	

ANALYTICAL RESULTS

Workorder: 3140795 AER528|R2010360

Lab ID: **3140795005** Date Collected: 11/6/2020 12:25 Matrix: Solid

Sample ID: **WCB2-0-2-11062020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 METALS										
Arsenic, Total	ND		mg/L	0.14	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:32	SRT	A
Barium, Total	ND		mg/L	2.8	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:32	SRT	A
Cadmium, Total	ND		mg/L	0.011	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:32	SRT	A
Chromium, Total	ND		mg/L	0.028	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:32	SRT	A
Lead, Total	0.23		mg/L	0.033	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:32	SRT	A
Mercury, Total	ND		mg/L	0.0020	SW846 7470A	11/19/20 05:54	MSA	11/19/20 16:42	MSA	A
Selenium, Total	ND		mg/L	0.11	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:32	SRT	A
Silver, Total	ND		mg/L	0.022	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:32	SRT	A
TCLP EPA 1311 SEMI-VOLATILES										
mp-Cresol	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:42	DHF	C
o-Cresol	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:42	DHF	C
1,4-Dichlorobenzene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:42	DHF	C
2,4-Dinitrotoluene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:42	DHF	C
Hexachlorobenzene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:42	DHF	C
Hexachlorobutadiene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:42	DHF	C
Hexachloroethane	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:42	DHF	C
Nitrobenzene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:42	DHF	C
Pentachlorophenol	ND		ug/L	120	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:42	DHF	C
Pyridine	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:42	DHF	C
2,4,5-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:42	DHF	C
2,4,6-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:42	DHF	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	69.3		%	47 - 128	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:42	DHF	C
2-Fluorobiphenyl (S)	38.4	3,4, 5	%	52 - 118	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:42	DHF	C
2-Fluorophenol (S)	48.5		%	20 - 87	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:42	DHF	C
Nitrobenzene-d5 (S)	77.7		%	27 - 139	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:42	DHF	C
Phenol-d5 (S)	37		%	10 - 81	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:42	DHF	C
Terphenyl-d14 (S)	102		%	46 - 133	SW846 8270D	11/19/20 10:35	MXL	11/21/20 10:42	DHF	C
TCLP EPA 1311 HERBICIDES										
2,4-D	ND		ug/L	20.0	SW846 8151A	11/19/20 16:25	DXL	11/20/20 17:30	AK	A
2,4,5-TP	ND		ug/L	4.0	SW846 8151A	11/19/20 16:25	DXL	11/20/20 17:30	AK	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4-Dichlorophenylacetic acid (S)	98		%	14 - 172	SW846 8151A	11/19/20 16:25	DXL	11/20/20 17:30	AK	A

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3140795 AER528|R2010360

Lab ID: **3140795005** Date Collected: 11/6/2020 12:25 Matrix: Solid

Sample ID: **WCB2-0-2-11062020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*

Ms. Sarah S Leung
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3140795 AER528|R2010360

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3140795001	1	WGC-8-2-4-11032020	SW-846 1010AM	Ignitability
Analyte was analyzed past the 14 day holding time.				
3140795001	2	WGC-8-2-4-11032020	SW-846 1010AM	Ignitability
According to Pa/USEPA regulations, this sample is not considered to be ignitable. (Ref 40 CFR 261.21)				
3140795001	3	WGC-8-2-4-11032020	SW-846 1010AM	Ignitability
Sample did not flash up to 199°F				
3140795001	4	WGC-8-2-4-11032020	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				
3140795001	5	WGC-8-2-4-11032020	SW846 8081B	Tetrachloro-m-xylene
The surrogate Tetrachloro-m-xylene for method SW846 8081B was outside of control limits. The % Recovery was reported as 27.6 and the control limits were 30 to 123. This result was reported at a dilution of 1.				
3140795001	6	WGC-8-2-4-11032020	SW846 8081B	Tetrachloro-m-xylene.
The surrogate Tetrachloro-m-xylene. for method SW846 8081B was outside of control limits. The % Recovery was reported as 24.2 and the control limits were 30 to 123. This result was reported at a dilution of 1.				
3140795002	1	EB1-Native-10-12-11042020	SW-846 1010AM	Ignitability
Analyte was analyzed past the 14 day holding time.				
3140795002	2	EB1-Native-10-12-11042020	SW-846 1010AM	Ignitability
According to Pa/USEPA regulations, this sample is not considered to be ignitable. (Ref 40 CFR 261.21)				
3140795002	3	EB1-Native-10-12-11042020	SW-846 1010AM	Ignitability
Sample did not flash up to 199°F				
3140795002	4	EB1-Native-10-12-11042020	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				
3140795002	5	EB1-Native-10-12-11042020	SW846 8081B	Tetrachloro-m-xylene
The surrogate Tetrachloro-m-xylene for method SW846 8081B was outside of control limits. The % Recovery was reported as 26.2 and the control limits were 30 to 123. This result was reported at a dilution of 1.				
3140795002	6	EB1-Native-10-12-11042020	SW846 8081B	Tetrachloro-m-xylene.
The surrogate Tetrachloro-m-xylene. for method SW846 8081B was outside of control limits. The % Recovery was reported as 25.7 and the control limits were 30 to 123. This result was reported at a dilution of 1.				
3140795003	1	EB1-Fill-0.5-2-11042020	SW-846 1010AM	Ignitability
Analyte was analyzed past the 14 day holding time.				
3140795003	2	EB1-Fill-0.5-2-11042020	SW-846 1010AM	Ignitability
According to Pa/USEPA regulations, this sample is not considered to be ignitable. (Ref 40 CFR 261.21)				
3140795003	3	EB1-Fill-0.5-2-11042020	SW-846 1010AM	Ignitability
Sample did not flash up to 199°F				
3140795003	4	EB1-Fill-0.5-2-11042020	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				
3140795003	5	EB1-Fill-0.5-2-11042020	SW846 8081B	Decachlorobiphenyl
The surrogate Decachlorobiphenyl for method SW846 8081B was outside of control limits. The % Recovery was reported as 149 and the control limits were 30 to 140. This result was reported at a dilution of 1.				

ANALYTICAL RESULTS

Workorder: 3140795 AER528|R2010360

3140795003	6	EB1-Fill-0.5-2-11042020	SW846 8081B	Decachlorobiphenyl.
The surrogate Decachlorobiphenyl. for method SW846 8081B was outside of control limits. The % Recovery was reported as 146 and the control limits were 30 to 140. This result was reported at a dilution of 1.				
3140795004	1	WAB1-0-2-11062020	SW-846 1010AM	Ignitability
According to Pa/USEPA regulations, this sample is not considered to be ignitable. (Ref 40 CFR 261.21)				
3140795004	2	WAB1-0-2-11062020	SW-846 1010AM	Ignitability
Sample did not flash up to 199°F				
3140795004	3	WAB1-0-2-11062020	SW846 8270D	2-Fluorobiphenyl
The surrogate 2-Fluorobiphenyl for method SW846 8270D was outside of control limits in the batch method blank. The % Recovery was reported as 37.8 and the control limits were 52 to 118. This result was reported at a dilution of 1.				
3140795004	4	WAB1-0-2-11062020	SW846 8270D	2-Fluorobiphenyl
The surrogate 2-Fluorobiphenyl for method EPA 625.1 was outside of control limits in the batch laboratory control spike. The % Recovery was reported as 51.4 and the control limits were 52 to 118. This result was reported at a dilution of 1.				
3140795004	5	WAB1-0-2-11062020	SW846 8270D	2-Fluorobiphenyl
The surrogate 2-Fluorobiphenyl for method SW846 8270D was outside of control limits. The % Recovery was reported as 36.5 and the control limits were 52 to 118. This result was reported at a dilution of 1.				
3140795004	6	WAB1-0-2-11062020	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				
3140795004	7	WAB1-0-2-11062020	SW846 8081B	Tetrachloro-m-xylene
The surrogate Tetrachloro-m-xylene for method SW846 8081B was outside of control limits. The % Recovery was reported as 28.3 and the control limits were 30 to 123. This result was reported at a dilution of 1.				
3140795004	8	WAB1-0-2-11062020	SW846 8081B	Tetrachloro-m-xylene.
The surrogate Tetrachloro-m-xylene. for method SW846 8081B was outside of control limits. The % Recovery was reported as 26.6 and the control limits were 30 to 123. This result was reported at a dilution of 1.				
3140795005	1	WCB2-0-2-11062020	SW-846 1010AM	Ignitability
According to Pa/USEPA regulations, this sample is not considered to be ignitable. (Ref 40 CFR 261.21)				
3140795005	2	WCB2-0-2-11062020	SW-846 1010AM	Ignitability
Sample did not flash up to 199°F				
3140795005	3	WCB2-0-2-11062020	SW846 8270D	2-Fluorobiphenyl
The surrogate 2-Fluorobiphenyl for method SW846 8270D was outside of control limits in the batch method blank. The % Recovery was reported as 37.8 and the control limits were 52 to 118. This result was reported at a dilution of 1.				
3140795005	4	WCB2-0-2-11062020	SW846 8270D	2-Fluorobiphenyl
The surrogate 2-Fluorobiphenyl for method EPA 625.1 was outside of control limits in the batch laboratory control spike. The % Recovery was reported as 51.4 and the control limits were 52 to 118. This result was reported at a dilution of 1.				
3140795005	5	WCB2-0-2-11062020	SW846 8270D	2-Fluorobiphenyl
The surrogate 2-Fluorobiphenyl for method SW846 8270D was outside of control limits. The % Recovery was reported as 38.4 and the control limits were 52 to 118. This result was reported at a dilution of 1.				
3140795005	6	WCB2-0-2-11062020	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3140795 AER528|R2010360

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3140795001	WGC-8-2-4-11032020	S2540G-11		
3140795001	WGC-8-2-4-11032020	SW-846 1010AM		
3140795001	WGC-8-2-4-11032020	SW-846 7.3CN	SW-846 7.3CN	
3140795001	WGC-8-2-4-11032020	SW846 6010C	SW846 3015	SW846 1311
3140795001	WGC-8-2-4-11032020	SW846 7.3	SW846 7.3	
3140795001	WGC-8-2-4-11032020	SW846 7470A	SW846 7470A	SW846 1311
3140795001	WGC-8-2-4-11032020	SW846 8081B	SW846 3511	SW846 1311
3140795001	WGC-8-2-4-11032020	SW846 8151A	SW846 8151A	SW846 1311
3140795001	WGC-8-2-4-11032020	SW846 8260C		SW846 1311
3140795001	WGC-8-2-4-11032020	SW846 8270D	SW846 3510C	SW846 1311
3140795002	EB1-Native-10-12-11042020	S2540G-11		
3140795002	EB1-Native-10-12-11042020	SW-846 1010AM		
3140795002	EB1-Native-10-12-11042020	SW-846 7.3CN	SW-846 7.3CN	
3140795002	EB1-Native-10-12-11042020	SW846 6010C	SW846 3015	SW846 1311
3140795002	EB1-Native-10-12-11042020	SW846 7.3	SW846 7.3	
3140795002	EB1-Native-10-12-11042020	SW846 7470A	SW846 7470A	SW846 1311
3140795002	EB1-Native-10-12-11042020	SW846 8081B	SW846 3511	SW846 1311
3140795002	EB1-Native-10-12-11042020	SW846 8151A	SW846 8151A	SW846 1311
3140795002	EB1-Native-10-12-11042020	SW846 8260C		SW846 1311
3140795002	EB1-Native-10-12-11042020	SW846 8270D	SW846 3510C	SW846 1311
3140795003	EB1-Fill-0.5-2-11042020	S2540G-11		
3140795003	EB1-Fill-0.5-2-11042020	SW-846 1010AM		
3140795003	EB1-Fill-0.5-2-11042020	SW-846 7.3CN	SW-846 7.3CN	
3140795003	EB1-Fill-0.5-2-11042020	SW846 6010C	SW846 3015	SW846 1311
3140795003	EB1-Fill-0.5-2-11042020	SW846 7.3	SW846 7.3	
3140795003	EB1-Fill-0.5-2-11042020	SW846 7470A	SW846 7470A	SW846 1311
3140795003	EB1-Fill-0.5-2-11042020	SW846 8081B	SW846 3511	SW846 1311
3140795003	EB1-Fill-0.5-2-11042020	SW846 8151A	SW846 8151A	SW846 1311
3140795003	EB1-Fill-0.5-2-11042020	SW846 8260C		SW846 1311
3140795003	EB1-Fill-0.5-2-11042020	SW846 8270D	SW846 3510C	SW846 1311
3140795004	WAB1-0-2-11062020	S2540G-11		
3140795004	WAB1-0-2-11062020	SW-846 1010AM		
3140795004	WAB1-0-2-11062020	SW-846 7.3CN	SW-846 7.3CN	
3140795004	WAB1-0-2-11062020	SW846 6010C	SW846 3015	SW846 1311
3140795004	WAB1-0-2-11062020	SW846 7.3	SW846 7.3	
3140795004	WAB1-0-2-11062020	SW846 7470A	SW846 7470A	SW846 1311
3140795004	WAB1-0-2-11062020	SW846 8081B	SW846 3511	SW846 1311
3140795004	WAB1-0-2-11062020	SW846 8151A	SW846 8151A	SW846 1311
3140795004	WAB1-0-2-11062020	SW846 8260C		SW846 1311
3140795004	WAB1-0-2-11062020	SW846 8270D	SW846 3510C	SW846 1311
3140795005	WCB2-0-2-11062020	S2540G-11		
3140795005	WCB2-0-2-11062020	SW-846 1010AM		
3140795005	WCB2-0-2-11062020	SW-846 7.3CN	SW-846 7.3CN	
3140795005	WCB2-0-2-11062020	SW846 6010C	SW846 3015	SW846 1311
3140795005	WCB2-0-2-11062020	SW846 7.3	SW846 7.3	
3140795005	WCB2-0-2-11062020	SW846 7470A	SW846 7470A	SW846 1311

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3140795 AER528|R2010360

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3140795005	WCB2-0-2-11062020	SW846 8081B	SW846 3511	SW846 1311
3140795005	WCB2-0-2-11062020	SW846 8151A	SW846 8151A	SW846 1311
3140795005	WCB2-0-2-11062020	SW846 8260C		SW846 1311
3140795005	WCB2-0-2-11062020	SW846 8270D	SW846 3510C	SW846 1311

QUALITY CONTROL DATA

Workorder: 3140795 AER528|R2010360

QC Batch: EXTR/62699 **Analysis Method:** SW846 8270D

QC Batch Method: SW846 3510C

Associated Lab Samples: 3140795001, 3140795002, 3140795003

METHOD BLANK: 3235516

Parameter	Blank Result	Units	Reporting Limit
mp-Cresol	ND	ug/L	3.0
o-Cresol	ND	ug/L	3.0
1,4-Dichlorobenzene	ND	ug/L	3.0
2,4-Dinitrotoluene	ND	ug/L	3.0
Hexachlorobenzene	ND	ug/L	3.0
Hexachlorobutadiene	ND	ug/L	3.0
Hexachloroethane	ND	ug/L	3.0
Nitrobenzene	ND	ug/L	3.0
Pentachlorophenol	ND	ug/L	6.0
Pyridine	ND	ug/L	3.0
2,4,5-Trichlorophenol	ND	ug/L	3.0
2,4,6-Trichlorophenol	ND	ug/L	3.0
2,4,6-Tribromophenol (S)	85.3	%	47 - 128
2-Fluorobiphenyl (S)	72.2	%	52 - 118
2-Fluorophenol (S)	55.4	%	20 - 87
Nitrobenzene-d5 (S)	82.7	%	27 - 139
Phenol-d5 (S)	36.4	%	10 - 81
Terphenyl-d14 (S)	102	%	46 - 133

LABORATORY CONTROL SAMPLE: 3235517

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
mp-Cresol	84.4	ug/L	100	84.4	28 - 128
o-Cresol	90.7	ug/L	100	90.7	34 - 136
1,4-Dichlorobenzene	63.3	ug/L	50	31.7	5 - 116
2,4-Dinitrotoluene	101	ug/L	50	50.3	49 - 138
Hexachlorobenzene	99.1	ug/L	50	49.6	59 - 109
Hexachlorobutadiene	70.2	ug/L	50	35.1	5 - 126
Hexachloroethane	58.8	ug/L	50	29.4	5 - 111
Nitrobenzene	93	ug/L	50	46.5	41 - 128
Pentachlorophenol	110	ug/L	100	110	41 - 149
Pyridine	54.6	ug/L	50	27.3	5 - 115
2,4,5-Trichlorophenol	99.7	ug/L	100	99.7	44 - 148
2,4,6-Trichlorophenol	97.2	ug/L	100	97.2	41 - 148
2,4,6-Tribromophenol (S)	110	%			47 - 128

QUALITY CONTROL DATA

Workorder: 3140795 AER528|R2010360

2-Fluorobiphenyl (S)	72.9	%	52 - 118
2-Fluorophenol (S)	65.6	%	20 - 87
Nitrobenzene-d5 (S)	93.6	%	27 - 139
Phenol-d5 (S)	45	%	10 - 81
Terphenyl-d14 (S)	107	%	46 - 133

QUALITY CONTROL DATA

Workorder: 3140795 AER528|R2010360

QC Batch: EXTR/62710 **Analysis Method:** SW846 8270D

QC Batch Method: SW846 3510C

Associated Lab Samples: 3140795004, 3140795005

METHOD BLANK: 3235991

Parameter	Blank Result	Units	Reporting Limit
mp-Cresol	ND	ug/L	3.0
o-Cresol	ND	ug/L	3.0
1,4-Dichlorobenzene	ND	ug/L	3.0
2,4-Dinitrotoluene	ND	ug/L	3.0
Hexachlorobenzene	ND	ug/L	3.0
Hexachlorobutadiene	ND	ug/L	3.0
Hexachloroethane	ND	ug/L	3.0
Nitrobenzene	ND	ug/L	3.0
Pentachlorophenol	ND	ug/L	6.0
Pyridine	ND	ug/L	3.0
2,4,5-Trichlorophenol	ND	ug/L	3.0
2,4,6-Trichlorophenol	ND	ug/L	3.0
2,4,6-Tribromophenol (S)	78.6	%	47 - 128
2-Fluorobiphenyl (S)	37.8	%	52 - 118
2-Fluorophenol (S)	42.3	%	20 - 87
Nitrobenzene-d5 (S)	65.5	%	27 - 139
Phenol-d5 (S)	27.2	%	10 - 81
Terphenyl-d14 (S)	89.5	%	46 - 133

LABORATORY CONTROL SAMPLE: 3235992

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
mp-Cresol	77.2	ug/L	100	77.2	28 - 128
o-Cresol	83.9	ug/L	100	83.9	34 - 136
1,4-Dichlorobenzene	55.2	ug/L	50	27.6	5 - 116
2,4-Dinitrotoluene	93.3	ug/L	50	46.7	49 - 138
Hexachlorobenzene	80.7	ug/L	50	40.4	59 - 109
Hexachlorobutadiene	57.4	ug/L	50	28.7	5 - 126
Hexachloroethane	49	ug/L	50	24.5	5 - 111
Nitrobenzene	84.9	ug/L	50	42.4	41 - 128
Pentachlorophenol	98.3	ug/L	100	98.3	41 - 149
Pyridine	58.3	ug/L	50	29.2	5 - 115
2,4,5-Trichlorophenol	96.6	ug/L	100	96.6	44 - 148
2,4,6-Trichlorophenol	90.9	ug/L	100	90.9	41 - 148
2,4,6-Tribromophenol (S)	92.7	%			47 - 128

QUALITY CONTROL DATA

Workorder: 3140795 AER528|R2010360

2-Fluorobiphenyl (S)	51.4*	%	52 - 118
2-Fluorophenol (S)	59.4	%	20 - 87
Nitrobenzene-d5 (S)	83.2	%	27 - 139
Phenol-d5 (S)	40.7	%	10 - 81
Terphenyl-d14 (S)	99.4	%	46 - 133

QUALITY CONTROL DATA

Workorder: 3140795 AER528|R2010360

QC Batch: EXTR/62721 **Analysis Method:** SW846 8081B

QC Batch Method: SW846 3511

Associated Lab Samples: 3140795001, 3140795002, 3140795003, 3140795004, 3140795005

METHOD BLANK: 3236314

Parameter	Blank Result	Units	Reporting Limit
gamma-BHC	ND	ug/L	0.020
Chlordane	ND	ug/L	0.50
Endrin	ND	ug/L	0.020
Heptachlor	ND	ug/L	0.020
Heptachlor Epoxide	ND	ug/L	0.020
Methoxychlor	ND	ug/L	0.020
Toxaphene	ND	ug/L	1.0
Decachlorobiphenyl (S)	134	%	30 - 140
Decachlorobiphenyl. (S)	130	%	30 - 140
Tetrachloro-m-xylene (S)	37.1	%	30 - 123
Tetrachloro-m-xylene. (S)	37.2	%	30 - 123

LABORATORY CONTROL SAMPLE: 3236315

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
gamma-BHC	96.5	ug/L	.5	0.48	58 - 138
Chlordane		ug/L		ND	
Endrin	95.9	ug/L	.5	0.48	58 - 143
Heptachlor	77.2	ug/L	.5	0.39	41 - 124
Heptachlor Epoxide	105	ug/L	.5	0.52	62 - 131
Methoxychlor	118	ug/L	.5	0.59	56 - 140
Toxaphene		ug/L		ND	
Decachlorobiphenyl (S)	113	%			30 - 140
Decachlorobiphenyl. (S)	110	%			30 - 140
Tetrachloro-m-xylene (S)	32.4	%			30 - 123
Tetrachloro-m-xylene. (S)	32.8	%			30 - 123

MATRIX SPIKE: 3236316 DUPLICATE: 3236317 ORIGINAL: 3140621002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
gamma-BHC	0	ug/L	10	11.5116	9.9086	115	99.1	58 - 138	15	30

QUALITY CONTROL DATA

Workorder: 3140795 AER528|R2010360

Endrin	0	ug/L	10	10.8384	9.4517	108	94.5	58 - 143	13.7	28
Heptachlor	0	ug/L	10	9.5101	8.0663	95.1	80.7	41 - 124	16.4	28
Heptachlor Epoxide	0	ug/L	10	12.2207	10.6958	122	107	62 - 131	13.3	27
Methoxychlor	0	ug/L	10	12.6252	11.4411	126	114	56 - 140	9.84	21
Decachlorobiphenyl (S)	72.9	%				72.9	87.6	30 - 140		
Decachlorobiphenyl. (S)	72.6	%				72.6	86.1	30 - 140		
Tetrachloro-m-xylene (S)	50.8	%				50.8	37.9	30 - 123		
Tetrachloro-m-xylene. (S)	51.6	%				51.6	38.4	30 - 123		

MATRIX SPIKE: 3236318 DUPLICATE: 3236319 ORIGINAL: 3140621001

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
gamma-BHC	0	ug/L	10	9.3912	9.2194	93.9	92.2	58 - 138	1.85	30
Endrin	0	ug/L	10	8.9511	8.7367	89.5	87.4	58 - 143	2.42	28
Heptachlor	0	ug/L	10	8.0732	7.3255	80.7	73.3	41 - 124	9.71	28
Heptachlor Epoxide	0	ug/L	10	10.0617	10.3537	101	104	62 - 131	2.86	27
Methoxychlor	0	ug/L	10	11.1297	10.3433	111	103	56 - 140	7.32	21
Decachlorobiphenyl (S)	127	%				127	120	30 - 140		
Decachlorobiphenyl. (S)	125	%				125	117	30 - 140		
Tetrachloro-m-xylene (S)	65.2	%				65.2	47.8	30 - 123		
Tetrachloro-m-xylene. (S)	63.3	%				63.3	46.9	30 - 123		

QUALITY CONTROL DATA

Workorder: 3140795 AER528|R2010360

QC Batch: EXTR/62722 **Analysis Method:** SW846 8151A

QC Batch Method: SW846 8151A

Associated Lab Samples: 3140795001, 3140795002, 3140795003, 3140795004, 3140795005

METHOD BLANK: 3236346

Parameter	Blank Result	Units	Reporting Limit
2,4-D	ND	ug/L	1.0
2,4,5-TP	ND	ug/L	0.20
2,4-Dichlorophenylacetic acid (S)	85.7	%	14 - 172

LABORATORY CONTROL SAMPLE: 3236347

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
2,4-D	95.6	ug/L	2	1.9	56 - 156
2,4,5-TP	104	ug/L	2	2.1	58 - 123
2,4-Dichlorophenylacetic acid (S)	96.4	%			14 - 172

MATRIX SPIKE: 3236348 DUPLICATE: 3236349 ORIGINAL: 3140621002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
2,4-D	0	ug/L	40	34.6263	33.306	86.6	83.3	56 - 156	3.89	17
2,4,5-TP	0	ug/L	40	39.8398	35.4263	99.6	88.6	58 - 123	11.7	16
2,4-Dichlorophenylacetic acid (S)	101	%				101	107	14 - 172		

MATRIX SPIKE: 3236350 DUPLICATE: 3236351 ORIGINAL: 3140621001

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
2,4-D	2.0072	ug/L	40	32.145	37.4734	75.3	88.7	56 - 156	15.3	17
2,4,5-TP	0	ug/L	40	41.8559	36.8034	105	92	58 - 123	12.8	16
2,4-Dichlorophenylacetic acid (S)	265	%				265*	164	14 - 172		

QUALITY CONTROL DATA

Workorder: 3140795 AER528|R2010360

QUALITY CONTROL DATA

Workorder: 3140795 AER528|R2010360

QC Batch: MDIG/86916 **Analysis Method:** SW846 6010C

QC Batch Method: SW846 3015

Associated Lab Samples: 3140795001, 3140795002, 3140795003, 3140795004, 3140795005

METHOD BLANK: 3235535

Parameter	Blank Result	Units	Reporting Limit
Arsenic, Total	ND	mg/L	0.028
Barium, Total	ND	mg/L	0.56
Cadmium, Total	ND	mg/L	0.0022
Chromium, Total	ND	mg/L	0.0056
Lead, Total	ND	mg/L	0.0067
Selenium, Total	ND	mg/L	0.022
Silver, Total	ND	mg/L	0.0044

LABORATORY CONTROL SAMPLE: 3235536

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Arsenic, Total	104	mg/L	.11	0.12	80 - 120
Barium, Total	105	mg/L	1.1	1.2	80 - 120
Cadmium, Total	103	mg/L	.11	0.11	80 - 120
Chromium, Total	103	mg/L	.11	0.11	80 - 120
Lead, Total	104	mg/L	.11	0.12	80 - 120
Selenium, Total	102	mg/L	1.1	1.1	80 - 120
Silver, Total	87.2	mg/L	.11	0.097	80 - 120

MATRIX SPIKE: 3235539 DUPLICATE: 3235540 ORIGINAL: 3140621002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Arsenic, Total	.02222	mg/L	.11	.14222	.13389	108	100	50 - 150	6.04	20
Barium, Total	.13055	mg/L	1.1	1.30888	1.28665	106	104	50 - 150	1.71	20
Cadmium, Total	.00889	mg/L	.11	.12778	.12667	107	106	50 - 150	.87	20
Chromium, Total	.04389	mg/L	.11	.15944	.15833	104	103	50 - 150	.7	20
Lead, Total	.06833	mg/L	.11	.19055	.18611	110	106	50 - 150	2.36	20
Selenium, Total	0	mg/L	1.1	1.15054	1.13443	104	102	50 - 150	1.41	20
Silver, Total	.00389	mg/L	.11	.03889	.05111	31.5*	42.5*	50 - 150	27.2	20

ALS Environmental

301 Fulling Mill Road - Middletown, PA 17057 - Phone: 717-944-5541 - Fax: 717-944-1430 - www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

QUALITY CONTROL DATA

Workorder: 3140795 AER528|R2010360

QC Batch: MDIG/86937 **Analysis Method:** SW846 7470A

QC Batch Method: SW846 7470A

Associated Lab Samples: 3140795001, 3140795002, 3140795003, 3140795004, 3140795005

METHOD BLANK: 3235965

Parameter	Blank Result	Units	Reporting Limit
Mercury, Total	ND	mg/L	0.0020

LABORATORY CONTROL SAMPLE: 3235966

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Mercury, Total	111	mg/L	.002	0.0022	85 - 115

MATRIX SPIKE: 3235967 DUPLICATE: 3235968 ORIGINAL: 3140621001

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Mercury, Total	0	mg/L	.005	.00559	.00543	112	109	70 - 130	2.9	20

MATRIX SPIKE: 3235969 DUPLICATE: 3235970 ORIGINAL: 3140621002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Mercury, Total	0	mg/L	.005	.00563	.00533	113	107	70 - 130	5.47	20

QUALITY CONTROL DATA

Workorder: 3140795 AER528|R2010360

QC Batch: VOMS/57258 **Analysis Method:** SW846 8260C

QC Batch Method: SW846 8260C

Associated Lab Samples: 3140795001, 3140795002, 3140795003, 3140795004, 3140795005

METHOD BLANK: 3236198

Parameter	Blank Result	Units	Reporting Limit
Benzene	ND	ug/L	1.0
2-Butanone	ND	ug/L	10.0
Carbon Tetrachloride	ND	ug/L	1.0
Chlorobenzene	ND	ug/L	1.0
Chloroform	ND	ug/L	1.0
1,2-Dichloroethane	ND	ug/L	1.0
1,1-Dichloroethene	ND	ug/L	1.0
Tetrachloroethene	ND	ug/L	1.0
Trichloroethene	ND	ug/L	1.0
Vinyl Chloride	ND	ug/L	1.0
1,2-Dichloroethane-d4 (S)	95.2	%	62 - 133
4-Bromofluorobenzene (S)	103	%	79 - 114
Dibromofluoromethane (S)	92.2	%	78 - 116
Toluene-d8 (S)	92.5	%	76 - 127

LABORATORY CONTROL SAMPLE: 3236199

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Benzene	111	ug/L	20	22.1	80 - 124
2-Butanone	97.3	ug/L	100	97.3	50 - 152
Carbon Tetrachloride	104	ug/L	20	20.7	62 - 132
Chlorobenzene	101	ug/L	20	20.1	85 - 117
Chloroform	106	ug/L	20	21.1	78 - 122
1,2-Dichloroethane	105	ug/L	20	21.1	70 - 133
1,1-Dichloroethene	119	ug/L	20	23.8	63 - 128
Tetrachloroethene	101	ug/L	20	20.2	72 - 124
Trichloroethene	100	ug/L	20	20.0	77 - 124
Vinyl Chloride	110	ug/L	20	22.0	27 - 138
1,2-Dichloroethane-d4 (S)	93.4	%			62 - 133
4-Bromofluorobenzene (S)	99.3	%			79 - 114
Dibromofluoromethane (S)	92.8	%			78 - 116
Toluene-d8 (S)	92	%			76 - 127

QUALITY CONTROL DATA

Workorder: 3140795 AER528|R2010360

QC Batch: WCPR/53020 **Analysis Method:** SW-846 7.3CN

QC Batch Method: SW-846 7.3CN

Associated Lab Samples: 3140795001, 3140795002, 3140795003, 3140795004, 3140795005

METHOD BLANK: 3233718

Parameter	Blank Result	Units	Reporting Limit
Cyanide, Reactive	ND	mg/kg	10

LABORATORY CONTROL SAMPLE: 3233719

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Cyanide, Reactive	11.5	mg/kg	10	ND	0 - 92

SAMPLE DUPLICATE: 3233720 ORIGINAL: 3140901001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Cyanide, Reactive	.00997	mg/kg	.00998	.1	20

QUALITY CONTROL DATA

Workorder: 3140795 AER528|R2010360

QC Batch: WCPR/53021 **Analysis Method:** SW846 7.3

QC Batch Method: SW846 7.3

Associated Lab Samples: 3140795001, 3140795002, 3140795003, 3140795004, 3140795005

METHOD BLANK: 3233721

Parameter	Blank Result	Units	Reporting Limit
Sulfide, Reactive	ND	mg/kg	6.2

LABORATORY CONTROL SAMPLE: 3233722

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Sulfide, Reactive	59.9	mg/kg	568	340	49 - 148

SAMPLE DUPLICATE: 3233723 ORIGINAL: 3140901001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Sulfide, Reactive	.79761	mg/kg	0	NC	20

QUALITY CONTROL DATA

Workorder: 3140795 AER528|R2010360

QC Batch: WETC/246967 **Analysis Method:** S2540G-11

QC Batch Method: S2540G-11

Associated Lab Samples: 3140795001, 3140795002, 3140795003, 3140795004, 3140795005

SAMPLE DUPLICATE: 3233463 ORIGINAL: 3140478004

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	99.7017	%	99.7448	.04	10
Total Solids	.2982	%	.2551	15.6*	5

SAMPLE DUPLICATE: 3233464 ORIGINAL: 3140621003

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	79.5814	%	79.8013	.28	10
Total Solids	20.4185	%	20.1986	1.08	5

SAMPLE DUPLICATE: 3233465 ORIGINAL: 3140730002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	99.2361	%	99.2502	.01	10
Total Solids	.7638	%	.7497	1.86	5

SAMPLE DUPLICATE: 3233466 ORIGINAL: 3140763001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	82.02	%	81.8571	.2	10
Total Solids	17.9799	%	18.1428	.9	5

SAMPLE DUPLICATE: 3233467 ORIGINAL: 3140793002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	22.0238	%	22.0058	.08	10
Total Solids	77.9761	%	77.9941	.02	5

QUALITY CONTROL DATA

Workorder: 3140795 AER528|R2010360

QC Batch: WETC/246983 **Analysis Method:** SW846 7.3

QC Batch Method: SW846 7.3

Associated Lab Samples:

METHOD BLANK: 3233724

Parameter	Blank Result	Units	Reporting Limit
Sulfide, Reactive	ND	mg/kg	6.3

METHOD BLANK: 3233726

Parameter	Blank Result	Units	Reporting Limit
Sulfide, Reactive	ND	mg/kg	6.3

METHOD BLANK: 3233728

Parameter	Blank Result	Units	Reporting Limit
Sulfide, Reactive	ND	mg/kg	6.3

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 3140795 AER528|R2010360

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
3140795001	WGC-8-2-4-11032020			S2540G-11	WETC/246967
3140795002	EB1-Native-10-12-11042020			S2540G-11	WETC/246967
3140795003	EB1-Fill-0.5-2-11042020			S2540G-11	WETC/246967
3140795004	WAB1-0-2-11062020			S2540G-11	WETC/246967
3140795005	WCB2-0-2-11062020			S2540G-11	WETC/246967
3140795001	WGC-8-2-4-11032020	SW-846 7.3CN	WCPR/53020	SW-846 7.3CN	WETC/247008
3140795002	EB1-Native-10-12-11042020	SW-846 7.3CN	WCPR/53020	SW-846 7.3CN	WETC/247008
3140795003	EB1-Fill-0.5-2-11042020	SW-846 7.3CN	WCPR/53020	SW-846 7.3CN	WETC/247008
3140795004	WAB1-0-2-11062020	SW-846 7.3CN	WCPR/53020	SW-846 7.3CN	WETC/247008
3140795005	WCB2-0-2-11062020	SW-846 7.3CN	WCPR/53020	SW-846 7.3CN	WETC/247008
3140795001	WGC-8-2-4-11032020	SW846 7.3	WCPR/53021	SW846 7.3	WETC/246983
3140795002	EB1-Native-10-12-11042020	SW846 7.3	WCPR/53021	SW846 7.3	WETC/246983
3140795003	EB1-Fill-0.5-2-11042020	SW846 7.3	WCPR/53021	SW846 7.3	WETC/246983
3140795004	WAB1-0-2-11062020	SW846 7.3	WCPR/53021	SW846 7.3	WETC/246983
3140795005	WCB2-0-2-11062020	SW846 7.3	WCPR/53021	SW846 7.3	WETC/246983
3140795001	WGC-8-2-4-11032020	SW846 3510C	EXTR/62699	SW846 8270D	SVMS/37377
3140795002	EB1-Native-10-12-11042020	SW846 3510C	EXTR/62699	SW846 8270D	SVMS/37377
3140795003	EB1-Fill-0.5-2-11042020	SW846 3510C	EXTR/62699	SW846 8270D	SVMS/37377
3140795001	WGC-8-2-4-11032020	SW846 3015	MDIG/86916	SW846 6010C	META/77570
3140795002	EB1-Native-10-12-11042020	SW846 3015	MDIG/86916	SW846 6010C	META/77570
3140795003	EB1-Fill-0.5-2-11042020	SW846 3015	MDIG/86916	SW846 6010C	META/77570
3140795004	WAB1-0-2-11062020	SW846 3015	MDIG/86916	SW846 6010C	META/77570
3140795005	WCB2-0-2-11062020	SW846 3015	MDIG/86916	SW846 6010C	META/77570
3140795001	WGC-8-2-4-11032020	SW846 7470A	MDIG/86937	SW846 7470A	META/77591
3140795002	EB1-Native-10-12-11042020	SW846 7470A	MDIG/86937	SW846 7470A	META/77591

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 3140795 AER528|R2010360

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
3140795003	EB1-Fill-0.5-2-11042020	SW846 7470A	MDIG/86937	SW846 7470A	META/77591
3140795004	WAB1-0-2-11062020	SW846 7470A	MDIG/86937	SW846 7470A	META/77591
3140795005	WCB2-0-2-11062020	SW846 7470A	MDIG/86937	SW846 7470A	META/77591
3140795004	WAB1-0-2-11062020	SW846 3510C	EXTR/62710	SW846 8270D	SVMS/37386
3140795005	WCB2-0-2-11062020	SW846 3510C	EXTR/62710	SW846 8270D	SVMS/37386
3140795001	WGC-8-2-4-11032020			SW846 8260C	VOMS/57258
3140795002	EB1-Native-10-12-11042020			SW846 8260C	VOMS/57258
3140795003	EB1-Fill-0.5-2-11042020			SW846 8260C	VOMS/57258
3140795004	WAB1-0-2-11062020			SW846 8260C	VOMS/57258
3140795005	WCB2-0-2-11062020			SW846 8260C	VOMS/57258
3140795001	WGC-8-2-4-11032020	SW846 3511	EXTR/62721	SW846 8081B	SVGC/58928
3140795002	EB1-Native-10-12-11042020	SW846 3511	EXTR/62721	SW846 8081B	SVGC/58928
3140795003	EB1-Fill-0.5-2-11042020	SW846 3511	EXTR/62721	SW846 8081B	SVGC/58928
3140795004	WAB1-0-2-11062020	SW846 3511	EXTR/62721	SW846 8081B	SVGC/58928
3140795005	WCB2-0-2-11062020	SW846 3511	EXTR/62721	SW846 8081B	SVGC/58928
3140795001	WGC-8-2-4-11032020	SW846 8151A	EXTR/62722	SW846 8151A	SVGC/58932
3140795002	EB1-Native-10-12-11042020	SW846 8151A	EXTR/62722	SW846 8151A	SVGC/58932
3140795003	EB1-Fill-0.5-2-11042020	SW846 8151A	EXTR/62722	SW846 8151A	SVGC/58932
3140795004	WAB1-0-2-11062020	SW846 8151A	EXTR/62722	SW846 8151A	SVGC/58932
3140795005	WCB2-0-2-11062020	SW846 8151A	EXTR/62722	SW846 8151A	SVGC/58932

ALS Environmental Chain of Custody

3140795

1565 Jefferson Rd, Building 300 • Rochester, NY 14623 • 585-288-5380 • FAX 585-288-8475

ALS Con

Project Number: R2010360
Project Manager: Janice Jaeger
QAP: LAB QAP

Lab Code	Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Lab ID	Ag TCLP 6010C	As TCLP 6010C	Ba TCLP 6010C	Cd TCLP 6010C	CN React 9014	Cr TCLP 6010C	Flash 1010A Modi	HERB_TCL 8151A	Hg TCLP 7470A
R2010360-001	WGB-8-2-4-11032020	4	Soil	11/3/20	0945	Middletown ALS	X	X	X	X	X	X	X	X	X
R2010360-002	EB1-Native-10-12-11042020	↓	Soil	11/4/20		Middletown ALS	X	X	X	X	X	X	X	X	X
R2010360-003	EB1-Fill-0.5-2-11042020		Soil	11/4/20		Middletown ALS	X	X	X	X	X	X	X	X	X
R2010360-004	WAB1-0-2-11062020		Soil	11/6/20	1145	Middletown ALS	X	X	X	X	X	X	X	X	X
R2010360-005	WCB2-0-2-11062020		Soil	11/6/20	1225	Middletown ALS	X	X	X	X	X	X	X	X	X

Folder Comments:
MRL U

3° 309

Special Instructions/Comments
nysdec equis v4 edd

H - Test is On Hold P - Test is Authorized for Prep Only

Turnaround Requirements
___ RUSH (Surcharges Apply)
PLEASE CIRCLE WORK DAYS
1 2 3 4 5
X STANDARD
Requested FAX Date: _____
Requested Report Date: 11/25/20

Report Requirements
___ I. Results Only
X II. Results + QC Summaries
___ III. Results + QC and Calibration Summaries
X IV. Data Validation Report with Raw Data
PQL/MDL/J N
EDD Y

Invoice Information
PO#
58R2010360
Bill to

Relinquished By: [signature] 11/12/2020 1530
Fedex 11/13/20 0850

Received By: Fedex
SEC 11/13/20 0850

Airbill Number: _____

ALS

R2010360-001	WGB-8-2-4-11032020		Soil	11/3/20	0945	Middletown ALS	X	X	X	X	X	X	X	X	X
R2010360-002	EB1-Native-10-12-11042020		Soil	11/4/20		Middletown ALS	X	X	X	X	X	X	X	X	X
R2010360-003	EB1-Fill-0.5-2-11042020		Soil	11/4/20		Middletown ALS	X	X	X	X	X	X	X	X	X
R2010360-004	WAB1-0-2-11062020		Soil	11/6/20	1145	Middletown ALS	X	X	X	X	X	X	X	X	X
R2010360-005	WCB2-0-2-11062020		Soil	11/6/20	1225	Middletown ALS	X	X	X	X	X	X	X	X	X

Ship To: Middletown ALS
ALS Environmental - Middletown
301 Fulling Mill Rd.
Middletown, PA 17057

PC [signature] Date 11/11/20

SMO _____ Date _____

Instructions:

Ice _____

Dry Ice _____

No Ice _____

Shipping:

Overnight _____

2nd Day _____

Ground _____

Bill to Client Account _____

Comments:

301 Fulling Mill Road
Middletown, PA 17057
P: (717) 944-5541
F: (717) 944-1430

Condition of Sample Receipt Form

Client:	Work Order #:	Initials:	Date:
ALS Rochester	3140795	SEC	11/13/20

1. Were airbills / tracking numbers present and recorded?	NONE	(YES)	NO
Tracking number: 1730 2433 3852			
2. Are Custody Seals on shipping containers intact?	(NONE)	YES	NO
3. Are Custody Seals on sample containers intact?	(NONE)	YES	NO
4. Is there a COC (Chain-of-Custody) present?		(YES)	NO
5. Are the COC and bottle labels complete, legible and in agreement?		YES	(NO)
5a. Does the COC contain sample locations?		(YES)	NO
5b. Does the COC contain date and time of sample collection for all samples?		(YES)	NO
5c. Does the COC contain sample collectors name?		YES	(NO)
5d. Does the COC note the type(s) of preservation for all bottles?		YES	(NO)
5e. Does the COC note the number of bottles submitted for each sample?		(YES)	NO
5f. Does the COC note the type of sample, composite or grab?		YES	(NO)
5g. Does the COC note the matrix of the sample(s)?		(YES)	NO
6. Are all aqueous samples requiring preservation preserved correctly?[1]	N/A	(YES)	NO
7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?		(YES)	NO
8. Are all samples within holding times for the requested analyses?		(YES)	NO
9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)		(YES)	NO
10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?	(N/A)	YES	NO
11. Were the samples received on ice?		(YES)	NO
12. Were sample temperatures measured at 0.0-6.0°C		(YES)	NO
13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below		YES	(NO)
13a. Are the samples required for SDWA compliance reporting?	N/A	YES	NO
13b. Did the client provide a SDWA PWS ID#?	N/A	YES	NO
13c. Are all aqueous unpreserved SDWA samples pH 5-9?	N/A	YES	NO
13d. Did the client provide the SDWA sample location ID/Description?	N/A	YES	NO
13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?	N/A	YES	NO

Cooler #: _____

Temperature (°C): 3°

Thermometer ID: 307

Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

[1]Final determination of correct preservation for analysis such as volatiles, microbiology, and oil and grease is made in the analytical department at the time of or following the analysis

Rev 1/20/2020

December 23, 2020 Service Request No:R2010361

Ms. Deborah Wright
O'Brien & Gere Engineers, Incorporated
333 West Washington Street
Syracuse, NY 13221

Laboratory Results for: Rochester REDI

Dear Ms.Wright,

Enclosed are the results of the sample(s) submitted to our laboratory November 06, 2020
For your reference, these analyses have been assigned our service request number **R2010361.**

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: Amanda Young

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

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010361
Project: Rochester REDI **Date Received:** 11/03/2020 - 11/06/2020
Sample Matrix: Soil

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:

Six soil samples were received for analysis at ALS Environmental on 11/03/2020 - 11/06/2020. 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.

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

Semivolatiles by GC/MS:

Method 8270D, 11/25/2020: The Method Blank contained a low level of the following analytes above the Reporting Limit: Benzo (b)fluoranthene, Benzo(a)pyrene, Benzo(a)anthracene, Florene, Naphthalene, Pyrene. All associated sample results less than ten times the level found in the Method Blank are flagged. Any samples with hits <10x will be re-extracted and re-analyzed outside of holding time.
Method 8270D, 11/18/2020: The upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). Precision is also outside limits. 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.

Method 8270D, R2010361-001: Sample(s) required dilution due to the dark, oily nature of the extract. The reporting limits are adjusted to reflect the dilution.

Method 8270D, 12/01/2020: 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 8270D, 12/17/2020: 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 8270D, 12/17/2020: The matrix spike recovery of one or more of the spiked analytes was outside of control limits because of sample matrix. No further corrective action was required.

Method 8270D, R2010361-005 RE: The upper control limit was exceeded for one or more surrogates. This sample is a re-extract. The surrogates were within limits in the original sample.

Method 8270D, 12/11/2020: 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.

Instrument quantitation and calibration conditions were not able to be maintained for hexachlorocyclopentadiene due to the

Approved by _____ Date 12/23/2020

matrix of samples in this or a preceding analytical batch. “This analyte exhibits known difficulties with reproducibility, response, recovery, stability, and/or chromatography that may reduce the overall quality or confidence in the result when using this preparation method combined with analysis by Method 8270” (Section 1.1 of EPA Method 8270E, rev 6, June 2018, SW-846 Update VI).

Method 8270D, 12/11/2020: The lower control limit for the spike recovery of the Laboratory Control Sample Duplicate (LCSD) was exceeded for one or more analyte. There were no hits in the samples. The LCS is within limits for all analytes. The analytes affected are flagged in the LCS Summary.

Method 8270D, 12/11/2020: The RPD between the LCS and the LCSD was greater than the RPD limit. The percent recovery limit was met for both the LCS and the LCSD.

Method 8270D, R2010361-004: Sample(s) required dilution due to the dark oily nature of the extract. The reporting limits are adjusted to reflect the dilution.

Semivoa GC:

Method 8081B, 11/13/2020: 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 8081B, 11/16/2020: 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 8081B, r2010361-001,ms,msd: The Method Reporting Limit (MRL) was elevated due to dark color of the extract of the sample.

Method 8081B, 11/16/2020: The control limits for matrix spike recovery of one or more of the spiked analytes is not applicable. The analysis of this sample required a dilution such that the added spike concentration was diluted outside of a useable level. Matrix spikes which have been diluted have been flagged with a "D". No further corrective action was required.
Method 8081B, 11/16/2020: The control limits were exceeded for analytes in the Continuing Calibration Verification (CCV). The QC failure was most likely due to the composition of the sample(s) immediately preceding the failing CCV. In order to protect the integrity of the instrument, no further corrective action was taken. Results should be considered estimated. Samples ran 2x with the same result to the closing ccv.
Method 8081B, 11/16/2020: The control limits were exceeded for one of the QC samples associated with samples in this report. The associated recoveries of target compounds were in control for some of the lcsd. Due to analyst error an acid cleanup was done on the lcsd which removes some pesticide compounds.

Method 8081B, 11/18/2020: The control limits were exceeded for analytes in the Continuing Calibration Verification (CCV). The QC failure was most likely due to the composition of the sample(s) immediately preceding the failing CCV. In order to protect the integrity of the instrument, no further corrective action was taken. Results should be considered estimated. Sample ran 2x with the same result to the closing ccv.

Method 8081B, 705182: The Method Reporting Limit (MRL) was elevated due to dark color of the extract of sample.

Method 8082A, 11/11/2020: 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.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by _____ Date 12/23/2020

Subcontracted Analytical Parameters:

No significant anomalies were noted with this analysis.

Volatiles by GC/MS:

Method 8260C, 11/13/2020: 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.

Method 8260C, 11/13/2020, R2010361-004,006: The recovery of one or more internal standards was outside control limits because of suspected matrix interference. The sample was re-extracted and reanalyzed, but produced similar results. No further corrective action was appropriate.

Method 8260C, 11/13/2020: 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, 11/13/2020: 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.

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, 11/15/2020: 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.

Method 8260C, 11/15/2020, R2010361-004,006: The recovery of one or more internal standards was outside control limits because of suspected matrix interference. The sample was re-extracted and reanalyzed, but produced similar results. No further corrective action was appropriate.

Method 8260C, 11/15/2020: 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, 11/15/2020: 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

Approved by _____ Date 12/23/2020

quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Approved by _____ Date 12/23/2020

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: Ramboll US Corp (Syracuse) **Service Request:**R2010361
Project: Rochester REDI/1940100197

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2010361-001	WGB-8-2-4-11032020	11/3/2020	0945
R2010361-002	EB1-Native-10-12-11042020	11/4/2020	
R2010361-003	EB1-Fill-0.5-2-11042020	11/4/2020	
R2010361-004	EB2-0-2-11062020	11/6/2020	0915
R2010361-005	WAB1-0-2-11062020	11/6/2020	1145
R2010361-006	WCB2-0-2-11062020	11/6/2020	1225

CHAIN OF CUSTODY

ALS Environmental

1565 Jefferson Rd, Bldg 300 Ste 360, Rochester, NY 14623

CLIENT: Ramboll	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☒ Standard TAT (List due date): Standard TAT ☐ Non Standard or urgent TAT (List due date):
OFFICE: Rochester, NY		
PROJECT: Rochester REDI - 1940100197	ALS QUOTE NO.: Rochester REDI Quote	
ORDER NUMBER:		COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7
PROJECT MANAGER: Deb Wright/Rick Duff	CONTACT PH: 315-546-4541	OF: 1 2 3 4 5 6 7
SAMPLER: Veronica Davies	SAMPLER MOBILE: 855-470-0072	
COC emailed to ALS? (NO)	EDD FORMAT (or default):	
Email Reports to (will default to PM if no other addresses are listed): deborah.wright@ramboll.com/ amanda.young@ramboll.com		
Email Invoice to (will default to PM if no other addresses are listed): AccountspayableUS@Ramboll.com		

FOR LABORATORY USE ONLY (Circle)
Custody Seal Intact? Yes No N/A
Free ice / frozen ice bricks present upon receipt? Yes No N/A
Random Sample Temperature on Receipt: °C
Other comment:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Veronica Davies			
DATE/TIME:11/3/20. 17:00	DATE/TIME:	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).													Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL CONTAINERS	TCLP SV 8270D, Pest 8081, Herb 8151, Metals 6010C	TCLP 8260C	Ignitability 1030	Reactivity 9010/ Corrosivity 1110	TCN 9014	PCB 8082			8260 VOCs + 10	SV 8270D +20 , Pest 8081B, PCB 8082, SV 8270+20 SIM	TAL Metals 6010B, Hg 7471A , CN 9010B	PFAS 537.1		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	WGB-8-2-4-11032020	11/3/2020 9:45	S	Soil	12	x	x	x	x	x	x			x	x	x	x		Terra core 1 kit (4 containers)
				TOTAL															

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Cooler Receipt and Preservation Check Form

R2010361 5
O'Brien & Gere Engineers, Incorporated
Rochester RED!

Project/Client Rumball Folder Number

Cooler received on 11/3/2020 by: JM COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y (N)	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/ROC 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: 11/3/2020 Time: 1700 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	5.8°						
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: R-002 by JM on 11/3/2020 at 1700
5035 samples placed in storage location: R-F09 by ✓ on ✓ at ✓ within 48 hours of sampling? (Y) N

Cooler Breakdown/Preservation Check**: Date: 11/4/2020 Time: 1530 by: JM

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		HNO_3								
≤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: 081020HSR, 081720-1TW
Explain all Discrepancies/ Other Comments:
*No C.O.C provided.

HPROD	BULK
HTR	FLDT
(SUB)	HGFB
ALS	LL3541

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

CHAIN OF CUSTODY

ALS Environmental — ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com
BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com
MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 07 6372 6735 E: mudgee.mail@alsglobal.com
NEWCASTLE 5/585 Maitland Rd Mayfield West NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com
NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com
PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com
WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: Ramboll	TURNAROUND REQUIREMENTS: ☒ Standard TAT (List due date): Standard TAT	FOR LABORATORY USE ONLY (Circle)	
OFFICE: Rochester, NY	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact?	Yes No N/A
PROJECT: Rochester REDI	ALS QUOTE NO.: Rochester REDI Quote	Free ice / frozen ice bricks present upon receipt?	Yes No N/A
ORDER NUMBER:	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt:	°C
PROJECT MANAGER: Deb Wright/Rick Duff CONTACT PH: 315-546-4541	OF: 8 1 2 3 4 5 6 7	Other comment:	

SAMPLER: Veronica Davies	SAMPLER MOBILE: 8J6 4700072	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY: / RECEIVED BY:
COC emailed to ALS? (NO)	EDD FORMAT (or default):	Veronica Davies		
Email Reports to (will default to PM if no other addresses are listed): deborah.wright@ramboll.com/ amanda.young@ramboll.com		DATE/TIME: 11/04/2020 5:30 pm	DATE/TIME: 11/4/2020 1730	DATE/TIME: / DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed): AccountspayableUS@Ramboll.com				

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).												Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	TCLP SV 8270D, Pest 8081, Herb 8151, Metals 6010C	TCLP 8260C	Ignitability 1030	Reactivity 9010/ Corrosivity 1110	TCN 9014	PCB 8082			8260 VOCs + 10	SV 8270D +20 , Pest 8081B, PCB 8082, SV 8270+20 SIM	TAL Metals 6010B, Hg 7471A, , CN 9010B	PFAS 537.1		
	EB1-Native-10-12-11042020		S	Soil	12	X	X	X	X	X	X			X	X	X	X		Terra Core 1 Kit (4 containers)
	EB1-Fill-05-2-11042020		S	Soil	12	X	X	X	X	X	X			X	X	X	X		Terra Core 1 Kit (4 containers)
				TOTAL															

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Pres
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

R2010361 5
O'Brien & Gere Engineers, Incorporated
Rochester REDI

Cooler Receipt and Preservation Check Form

R2010361 5
O'Brien & Gere Engineers, Incorporated
Rochester REDI

Project/Client Rambol Folder Number

Cooler received on 11/4/2020 by: dw COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y (N)	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/ROC 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: 11/4/2020 Time: 1740 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	7.90						
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: R-702 by dw on 11/4/20 at 1740
5035 samples placed in storage location: R-Foo by J on V at ↓ within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 11/5/2020 Time: 1410 by: dw

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		HNO_3								
≤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: 081020-HSR, 081720-HW
Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
(SUB)	HGFB
ALS	LL3541

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

CHAIN OF CUSTODY

ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095 Ph 08 8359 0890 E adelaide@alsglobal.com
BRISBANE 32 Shand Street Stafford QLD 4053 Ph 07 3243 7222 E samples.brisbane@alsglobal.com
GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph 07 7471 5600 E gladstone@alsglobal.com
MACKAY 78 Harbour Road Mackay QLD 4740 Ph 07 4944 0177 E mackay@alsglobal.com
MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph 03 8549 9600 E samples.melbourne@alsglobal.com
MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph 02 6372 6735 E mudgee.mail@alsglobal.com
NEWCASTLE 5/585 Maitland Rd Mayfield West NSW 2304 Ph 02 4014 2500 E samples.newcastle@alsglobal.com
ORANGE 4/13 Geary Place North Nowra NSW 2541 Ph 02 4423 2063 E nowra@alsglobal.com
PERTH 10 Hod Way Malaga WA 6090 Ph 08 9209 7655 E samples.perth@alsglobal.com
SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph 02 8784 8555 E samples.sydney@alsglobal.com
TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph 07 4796 0600 E townsville.environmental@alsglobal.com
WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph 02 4225 3125 E portkembla@alsglobal.com

CLIENT: Ramboll	TURNAROUND REQUIREMENTS: ☒ Standard TAT (List due date): Standard TAT	FOR LABORATORY USE ONLY (Circle)	
OFFICE: Rochester, NY	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact?	Yes No N/A
PROJECT: Rochester REDI	ALS QUOTE NO.: Rochester REDI Quote	Free Ice / frozen ice bricks present upon receipt?	Yes No N/A
ORDER NUMBER:	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt:	°C
PROJECT MANAGER: Deb Wright/Rick Duff CONTACT PH: 315-546-4541	OF: 1 2 3 4 5 6 7	Other comment:	
SAMPLER: Veronica Davies SAMPLER MOBILE: 856 470 0172	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY: / RECEIVED BY:
COC emailed to ALS? (NO) EDD FORMAT (or default):	Veronica Davies		
Email Reports to (will default to PM if no other addresses are listed): deborah.wright@ramboll.com/ amanda.young@ramboll.com	DATE/TIME: 11/6/2020 3:00 PM	DATE/TIME: 11/6/2020 1515	DATE/TIME: / DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed): AccountspayableUS@Ramboll.com			

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).												Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	TCLP SV 8270D, Pest 8081, Herb 8151, Metals 6010C	TCLP 8260C	Ignitability 1030	Reactivity 9010/ Corrosivity 1110	TCN 9014	PCB 8082			8260 VOCs + 10	SV 8270D +20, Pest 8081B, PCB 8082, SV 8270+20 SIM	TAL Metals 6010B, Hg 7471A, , CN 9010B	PFAS 537.1		
	EB2-0-2-11062020	11/6/2020 9:15am	S	Soil	7									X	X	X	X	Terra Kit 1 (4 containers)
	WAB1-0-2-11062020	11/6/2020 11:45	S	soil	12	X	X	X	X					X	X	X	X	Terra Kit 1 (4 containers)
	WCB2-0-2-11062020	11/6/2020 12:25	S	soil	12	X	X	X	X					X	X	X	X	Terra Kit 1 (4 containers)
				TOTAL														

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag

R2010361 5
O'Brien & Gere Engineers, Incorporated
Rochester REDI

Cooler Receipt and Preservation Check Form

Project/Client Ramboll Folder Number

Cooler received on 11/6/2020 by: @

COURIER: ALS UPS FEDEX VELOCITY (CLIENT)

1	Were **Custody seals** on outside of cooler?	Y (N)	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/ROC) 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: 11/6/2020 Time: 1520 ID: IR#7 (IR#10) From: (Temp Blank) Sample Bottle

Observed Temp (°C)	3.3						
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: R-002 by @ on 11/6/2020 at 1529
5035 samples placed in storage location: F-09 by @ on 11/6/2020 at 1530 within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 11/9/2020 Time: 1413 by: @

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		HNO_3								
≤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: 090720-ISR 081720-ITW

Explain all Discrepancies/Other Comments:

COC filled out in pencil

all 5035 kit labels are blank

HPROD	BULK
HTR	FLDT
(SUB)	HGFB
ALS	LL3541

Labels secondary reviewed by: @

PC Secondary Review: JMM 11/11/20

*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: Ramboll US Corp (Syracuse) **Service Request:** R2010361
Project: Rochester REDI/1940100197

Non-Certified Analytes

Certifying Agency: New York Department of Health

Method	Matrix	Analyte
ALS SOP	Soil	Total Solids

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010361
Project: Rochester REDI/1940100197

Sample Name: WGB-8-2-4-11032020 **Date Collected:** 11/3/20
Lab Code: R2010361-001 **Date Received:** 11/3/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
6010C	AKONZEL	KMCLAEN
7471B	AKONZEL	AKONZEL
8081B	KSERCU	BALLGEIER
8082A	KSERCU	BALLGEIER
8260C		FNAEGLER
8270D	KSERCU	JMISIUREWICZ
9012B	MROGERSON	MROGERSON
ALS SOP		KAWONG
PFC/537M	MSESSIONS	CCONOVER

Sample Name: EB1-Native-10-12-11042020 **Date Collected:** 11/4/20
Lab Code: R2010361-002 **Date Received:** 11/4/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
6010C	AKONZEL	KMCLAEN
7471B	AKONZEL	AKONZEL
8081B	KSERCU	BALLGEIER
8082A	KSERCU	BALLGEIER
8260C		FNAEGLER
8270D	KSERCU	JMISIUREWICZ
9012B	MROGERSON	MROGERSON
ALS SOP		KAWONG
PFC/537M	MSESSIONS	CCONOVER

Sample Name: EB1-Fill-0.5-2-11042020 **Date Collected:** 11/4/20
Lab Code: R2010361-003 **Date Received:** 11/4/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
6010C	AKONZEL	KMCLAEN
7471B	AKONZEL	AKONZEL

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010361
Project: Rochester REDI/1940100197

Sample Name: EB1-Fill-0.5-2-11042020 **Date Collected:** 11/4/20
Lab Code: R2010361-003 **Date Received:** 11/4/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
8081B	KSERCU	BALLGEIER
8082A	KSERCU	BALLGEIER
8260C		FNAEGLER
8270D	KSERCU	JMISIUREWICZ
9012B	MROGERSON	MROGERSON
ALS SOP		KAWONG
PFC/537M	MSESSIONS	CCONOVER

Sample Name: EB2-0-2-11062020 **Date Collected:** 11/6/20
Lab Code: R2010361-004 **Date Received:** 11/6/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
6010C	AKONZEL	KMCLAEN
7471B	AKONZEL	AKONZEL
8081B	KSERCU	BALLGEIER
8082A	KSERCU	BALLGEIER
8260C		FNAEGLER
8270D	KSERCU	JMISIUREWICZ
9012B	MROGERSON	MROGERSON
ALS SOP		KAWONG
PFC/537M	MSESSIONS	CCONOVER

Sample Name: EB2-0-2-11062020 **Date Collected:** 11/6/20
Lab Code: R2010361-004.R01 **Date Received:** 11/6/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
8260C		FNAEGLER
8270D	KSERCU	JMISIUREWICZ

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010361
Project: Rochester REDI/1940100197

Sample Name: WAB1-0-2-11062020 **Date Collected:** 11/6/20
Lab Code: R2010361-005 **Date Received:** 11/6/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
6010C	AKONZEL	KMCLAEN
7471B	AKONZEL	AKONZEL
8081B	KSERCU	BALLGEIER
8082A	KSERCU	BALLGEIER
8260C		FNAEGLER
8270D	KSERCU	JMISIUREWICZ
9012B	MROGERSON	MROGERSON
ALS SOP		KAWONG
PFC/537M	MSESSIONS	CCONOVER

Sample Name: WAB1-0-2-11062020 **Date Collected:** 11/6/20
Lab Code: R2010361-005.R01 **Date Received:** 11/6/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
8270D	KSERCU	JMISIUREWICZ

Sample Name: WCB2-0-2-11062020 **Date Collected:** 11/6/20
Lab Code: R2010361-006 **Date Received:** 11/6/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
6010C	AKONZEL	KMCLAEN
7471B	AKONZEL	AKONZEL
8081B	KSERCU	BALLGEIER
8082A	KSERCU	BALLGEIER
8260C		FNAEGLER
8270D	KSERCU	JMISIUREWICZ
9012B	MROGERSON	MROGERSON
ALS SOP		KAWONG
PFC/537M	MSESSIONS	CCONOVER

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197		

Sample Name:	WCB2-0-2-11062020	**Date Collected:**	11/6/20
Lab Code:	R2010361-006.R01	**Date Received:**	11/6/20
Sample Matrix:	Soil		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		FNAEGLER
8270D	KSERCU	JMISIUREWICZ

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

Volatile Organic Compounds by GC/MS

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

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/03/20 09:45
Sample Matrix:	Soil	**Date Received:**	11/03/20 17:00
Sample Name:	WGB-8-2-4-11032020	**Units:**	ug/Kg
Lab Code:	R2010361-001	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
1,1,2,2-Tetrachloroethane	5.8 U	5.8	0.52	1.06	11/06/20 17:47	
1,1,2-Trichloroethane	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
1,1,2-Trichloro-1,2,2-trifluoroethane	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
1,1-Dichloroethane (1,1-DCA)	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
1,1-Dichloroethene (1,1-DCE)	5.8 U	5.8	0.34	1.06	11/06/20 17:47	
1,2,3-Trichlorobenzene	5.8 U	5.8	0.61	1.06	11/06/20 17:47	
1,2,4-Trichlorobenzene	5.8 U	5.8	0.49	1.06	11/06/20 17:47	
1,2-Dibromo-3-chloropropane (DBCP)	5.8 U	5.8	0.88	1.06	11/06/20 17:47	
1,2-Dibromoethane	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
1,2-Dichlorobenzene	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
1,2-Dichloroethane	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
1,2-Dichloropropane	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
1,3-Dichlorobenzene	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
1,4-Dichlorobenzene	5.8 U	5.8	0.26	1.06	11/06/20 17:47	
1,4-Dioxane	120 U	120	24	1.06	11/06/20 17:47	
2-Butanone (MEK)	5.8 U	5.8	2.4	1.06	11/06/20 17:47	
2-Hexanone	5.8 U	5.8	0.42	1.06	11/06/20 17:47	
4-Methyl-2-pentanone	5.8 U	5.8	0.27	1.06	11/06/20 17:47	
Acetone	**7.0**	5.8	5.5	1.06	11/06/20 17:47	
Benzene	**0.34 J**	5.8	0.24	1.06	11/06/20 17:47	
Bromochloromethane	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
Bromodichloromethane	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
Bromoform	5.8 U	5.8	0.59	1.06	11/06/20 17:47	
Bromomethane	5.8 U	5.8	2.5	1.06	11/06/20 17:47	
Carbon Disulfide	5.8 U	5.8	0.34	1.06	11/06/20 17:47	
Carbon Tetrachloride	5.8 U	5.8	0.31	1.06	11/06/20 17:47	
Chlorobenzene	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
Chloroethane	5.8 U	5.8	0.48	1.06	11/06/20 17:47	
Chloroform	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
Chloromethane	5.8 U	5.8	1.7	1.06	11/06/20 17:47	
Cyclohexane	**1.0 J**	5.8	0.31	1.06	11/06/20 17:47	
Dibromochloromethane	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
Dichlorodifluoromethane (CFC 12)	5.8 U	5.8	0.39	1.06	11/06/20 17:47	
Dichloromethane	5.8 U	5.8	3.3	1.06	11/06/20 17:47	
Ethylbenzene	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
Isopropylbenzene (Cumene)	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
Methyl Acetate	5.8 U	5.8	0.98	1.06	11/06/20 17:47	
Methyl tert-Butyl Ether	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
Methylcyclohexane	**1.0 J**	5.8	0.37	1.06	11/06/20 17:47	
Styrene	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
Tetrachloroethene (PCE)	5.8 U	5.8	0.27	1.06	11/06/20 17:47	
Toluene	**0.63 J**	5.8	0.24	1.06	11/06/20 17:47	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/03/20 09:45
Sample Matrix:	Soil	**Date Received:**	11/03/20 17:00
Sample Name:	WGB-8-2-4-11032020	**Units:**	ug/Kg
Lab Code:	R2010361-001	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	5.8 U	5.8	0.26	1.06	11/06/20 17:47	
Trichlorofluoromethane (CFC 11)	5.8 U	5.8	0.31	1.06	11/06/20 17:47	
Vinyl Chloride	5.8 U	5.8	0.54	1.06	11/06/20 17:47	
cis-1,2-Dichloroethene	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
cis-1,3-Dichloropropene	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
m,p-Xylenes	12 U	12	0.44	1.06	11/06/20 17:47	
o-Xylene	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
trans-1,2-Dichloroethene	5.8 U	5.8	0.24	1.06	11/06/20 17:47	
trans-1,3-Dichloropropene	5.8 U	5.8	0.24	1.06	11/06/20 17:47	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	87	31 - 154	11/06/20 17:47	
Dibromofluoromethane	114	63 - 138	11/06/20 17:47	
Toluene-d8	106	66 - 138	11/06/20 17:47	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Native-10-12-11042020	**Units:**	ug/Kg
Lab Code:	R2010361-002	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
1,1,2,2-Tetrachloroethane	6.8 U	6.8	0.61	1.07	11/06/20 18:10	
1,1,2-Trichloroethane	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
1,1,2-Trichloro-1,2,2-trifluoroethane	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
1,1-Dichloroethane (1,1-DCA)	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
1,1-Dichloroethene (1,1-DCE)	6.8 U	6.8	0.40	1.07	11/06/20 18:10	
1,2,3-Trichlorobenzene	6.8 U	6.8	0.72	1.07	11/06/20 18:10	
1,2,4-Trichlorobenzene	6.8 U	6.8	0.58	1.07	11/06/20 18:10	
1,2-Dibromo-3-chloropropane (DBCP)	6.8 U	6.8	1.1	1.07	11/06/20 18:10	
1,2-Dibromoethane	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
1,2-Dichlorobenzene	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
1,2-Dichloroethane	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
1,2-Dichloropropane	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
1,3-Dichlorobenzene	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
1,4-Dichlorobenzene	6.8 U	6.8	0.31	1.07	11/06/20 18:10	
1,4-Dioxane	140 U	140	28	1.07	11/06/20 18:10	
2-Butanone (MEK)	6.8 U	6.8	2.8	1.07	11/06/20 18:10	
2-Hexanone	6.8 U	6.8	0.50	1.07	11/06/20 18:10	
4-Methyl-2-pentanone	6.8 U	6.8	0.32	1.07	11/06/20 18:10	
Acetone	**21**	6.8	6.5	1.07	11/06/20 18:10	
Benzene	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
Bromochloromethane	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
Bromodichloromethane	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
Bromoform	6.8 U	6.8	0.69	1.07	11/06/20 18:10	
Bromomethane	6.8 U	6.8	2.9	1.07	11/06/20 18:10	
Carbon Disulfide	**0.40 J**	6.8	0.40	1.07	11/06/20 18:10	
Carbon Tetrachloride	6.8 U	6.8	0.36	1.07	11/06/20 18:10	
Chlorobenzene	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
Chloroethane	6.8 U	6.8	0.57	1.07	11/06/20 18:10	
Chloroform	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
Chloromethane	6.8 U	6.8	2.0	1.07	11/06/20 18:10	
Cyclohexane	6.8 U	6.8	0.36	1.07	11/06/20 18:10	
Dibromochloromethane	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
Dichlorodifluoromethane (CFC 12)	6.8 U	6.8	0.46	1.07	11/06/20 18:10	
Dichloromethane	6.8 U	6.8	3.9	1.07	11/06/20 18:10	
Ethylbenzene	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
Isopropylbenzene (Cumene)	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
Methyl Acetate	6.8 U	6.8	1.2	1.07	11/06/20 18:10	
Methyl tert-Butyl Ether	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
Methylcyclohexane	6.8 U	6.8	0.43	1.07	11/06/20 18:10	
Styrene	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
Tetrachloroethene (PCE)	6.8 U	6.8	0.32	1.07	11/06/20 18:10	
Toluene	6.8 U	6.8	0.28	1.07	11/06/20 18:10	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Native-10-12-11042020	**Units:**	ug/Kg
Lab Code:	R2010361-002	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	6.8 U	6.8	0.31	1.07	11/06/20 18:10	
Trichlorofluoromethane (CFC 11)	6.8 U	6.8	0.36	1.07	11/06/20 18:10	
Vinyl Chloride	6.8 U	6.8	0.63	1.07	11/06/20 18:10	
cis-1,2-Dichloroethene	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
cis-1,3-Dichloropropene	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
m,p-Xylenes	14 U	14	0.51	1.07	11/06/20 18:10	
o-Xylene	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
trans-1,2-Dichloroethene	6.8 U	6.8	0.28	1.07	11/06/20 18:10	
trans-1,3-Dichloropropene	6.8 U	6.8	0.28	1.07	11/06/20 18:10	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	31 - 154	11/06/20 18:10	
Dibromofluoromethane	112	63 - 138	11/06/20 18:10	
Toluene-d8	106	66 - 138	11/06/20 18:10	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Fill-0.5-2-11042020	**Units:**	ug/Kg
Lab Code:	R2010361-003	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	4.7 U	4.7	0.19	.78	11/06/20 18:33	
1,1,2,2-Tetrachloroethane	4.7 U	4.7	0.42	.78	11/06/20 18:33	
1,1,2-Trichloroethane	4.7 U	4.7	0.19	.78	11/06/20 18:33	
1,1,2-Trichloro-1,2,2-trifluoroethane	4.7 U	4.7	0.19	.78	11/06/20 18:33	
1,1-Dichloroethane (1,1-DCA)	4.7 U	4.7	0.19	.78	11/06/20 18:33	
1,1-Dichloroethene (1,1-DCE)	4.7 U	4.7	0.28	.78	11/06/20 18:33	
1,2,3-Trichlorobenzene	4.7 U	4.7	0.49	.78	11/06/20 18:33	
1,2,4-Trichlorobenzene	4.7 U	4.7	0.40	.78	11/06/20 18:33	
1,2-Dibromo-3-chloropropane (DBCP)	4.7 U	4.7	0.71	.78	11/06/20 18:33	
1,2-Dibromoethane	4.7 U	4.7	0.19	.78	11/06/20 18:33	
1,2-Dichlorobenzene	4.7 U	4.7	0.19	.78	11/06/20 18:33	
1,2-Dichloroethane	4.7 U	4.7	0.19	.78	11/06/20 18:33	
1,2-Dichloropropane	4.7 U	4.7	0.19	.78	11/06/20 18:33	
1,3-Dichlorobenzene	4.7 U	4.7	0.19	.78	11/06/20 18:33	
1,4-Dichlorobenzene	4.7 U	4.7	0.21	.78	11/06/20 18:33	
1,4-Dioxane	94 U	94	19	.78	11/06/20 18:33	
2-Butanone (MEK)	4.7 U	4.7	1.9	.78	11/06/20 18:33	
2-Hexanone	4.7 U	4.7	0.34	.78	11/06/20 18:33	
4-Methyl-2-pentanone	4.7 U	4.7	0.22	.78	11/06/20 18:33	
Acetone	**6.4**	4.7	4.4	.78	11/06/20 18:33	
Benzene	4.7 U	4.7	0.19	.78	11/06/20 18:33	
Bromochloromethane	4.7 U	4.7	0.19	.78	11/06/20 18:33	
Bromodichloromethane	4.7 U	4.7	0.19	.78	11/06/20 18:33	
Bromoform	4.7 U	4.7	0.47	.78	11/06/20 18:33	
Bromomethane	4.7 U	4.7	2.0	.78	11/06/20 18:33	
Carbon Disulfide	4.7 U	4.7	0.28	.78	11/06/20 18:33	
Carbon Tetrachloride	4.7 U	4.7	0.25	.78	11/06/20 18:33	
Chlorobenzene	4.7 U	4.7	0.19	.78	11/06/20 18:33	
Chloroethane	4.7 U	4.7	0.39	.78	11/06/20 18:33	
Chloroform	4.7 U	4.7	0.19	.78	11/06/20 18:33	
Chloromethane	4.7 U	4.7	1.4	.78	11/06/20 18:33	
Cyclohexane	4.7 U	4.7	0.25	.78	11/06/20 18:33	
Dibromochloromethane	4.7 U	4.7	0.19	.78	11/06/20 18:33	
Dichlorodifluoromethane (CFC 12)	4.7 U	4.7	0.31	.78	11/06/20 18:33	
Dichloromethane	4.7 U	4.7	2.7	.78	11/06/20 18:33	
Ethylbenzene	4.7 U	4.7	0.19	.78	11/06/20 18:33	
Isopropylbenzene (Cumene)	4.7 U	4.7	0.19	.78	11/06/20 18:33	
Methyl Acetate	4.7 U	4.7	0.79	.78	11/06/20 18:33	
Methyl tert-Butyl Ether	4.7 U	4.7	0.19	.78	11/06/20 18:33	
Methylcyclohexane	4.7 U	4.7	0.29	.78	11/06/20 18:33	
Styrene	4.7 U	4.7	0.19	.78	11/06/20 18:33	
Tetrachloroethene (PCE)	4.7 U	4.7	0.22	.78	11/06/20 18:33	
Toluene	4.7 U	4.7	0.19	.78	11/06/20 18:33	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Fill-0.5-2-11042020	**Units:**	ug/Kg
Lab Code:	R2010361-003	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	4.7 U	4.7	0.21	.78	11/06/20 18:33	
Trichlorofluoromethane (CFC 11)	4.7 U	4.7	0.25	.78	11/06/20 18:33	
Vinyl Chloride	4.7 U	4.7	0.44	.78	11/06/20 18:33	
cis-1,2-Dichloroethene	4.7 U	4.7	0.19	.78	11/06/20 18:33	
cis-1,3-Dichloropropene	4.7 U	4.7	0.19	.78	11/06/20 18:33	
m,p-Xylenes	9.4 U	9.4	0.35	.78	11/06/20 18:33	
o-Xylene	4.7 U	4.7	0.19	.78	11/06/20 18:33	
trans-1,2-Dichloroethene	4.7 U	4.7	0.19	.78	11/06/20 18:33	
trans-1,3-Dichloropropene	4.7 U	4.7	0.19	.78	11/06/20 18:33	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	31 - 154	11/06/20 18:33	
Dibromofluoromethane	113	63 - 138	11/06/20 18:33	
Toluene-d8	110	66 - 138	11/06/20 18:33	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 09:15
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	EB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-004	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	6.8 U	6.8	0.28	.95	11/13/20 18:01	
1,1,2,2-Tetrachloroethane	6.8 U	6.8	0.61	.95	11/13/20 18:01	
1,1,2-Trichloroethane	6.8 U	6.8	0.28	.95	11/13/20 18:01	
1,1,2-Trichloro-1,2,2-trifluoroethane	6.8 U	6.8	0.28	.95	11/13/20 18:01	
1,1-Dichloroethane (1,1-DCA)	6.8 U	6.8	0.28	.95	11/13/20 18:01	
1,1-Dichloroethene (1,1-DCE)	6.8 U	6.8	0.40	.95	11/13/20 18:01	
1,2,3-Trichlorobenzene	6.8 U	6.8	0.72	.95	11/13/20 18:01	
1,2,4-Trichlorobenzene	6.8 U	6.8	0.58	.95	11/13/20 18:01	
1,2-Dibromo-3-chloropropane (DBCP)	6.8 U	6.8	1.1	.95	11/13/20 18:01	
1,2-Dibromoethane	6.8 U	6.8	0.28	.95	11/13/20 18:01	
1,2-Dichlorobenzene	6.8 U	6.8	0.28	.95	11/13/20 18:01	
1,2-Dichloroethane	6.8 U	6.8	0.28	.95	11/13/20 18:01	
1,2-Dichloropropane	6.8 U	6.8	0.28	.95	11/13/20 18:01	
1,3-Dichlorobenzene	6.8 U	6.8	0.28	.95	11/13/20 18:01	
1,4-Dichlorobenzene	6.8 U	6.8	0.31	.95	11/13/20 18:01	
1,4-Dioxane	140 U	140	28	.95	11/13/20 18:01	
2-Butanone (MEK)	6.8 U	6.8	2.8	.95	11/13/20 18:01	
2-Hexanone	6.8 U	6.8	0.50	.95	11/13/20 18:01	
4-Methyl-2-pentanone	6.8 U	6.8	0.32	.95	11/13/20 18:01	
Acetone	6.8 U	6.8	6.5	.95	11/13/20 18:01	
Benzene	6.8 U	6.8	0.28	.95	11/13/20 18:01	
Bromochloromethane	6.8 U	6.8	0.28	.95	11/13/20 18:01	
Bromodichloromethane	6.8 U	6.8	0.28	.95	11/13/20 18:01	
Bromoform	6.8 U	6.8	0.69	.95	11/13/20 18:01	
Bromomethane	6.8 U	6.8	2.9	.95	11/13/20 18:01	
Carbon Disulfide	6.8 U	6.8	0.40	.95	11/13/20 18:01	
Carbon Tetrachloride	6.8 U	6.8	0.36	.95	11/13/20 18:01	
Chlorobenzene	6.8 U	6.8	0.28	.95	11/13/20 18:01	
Chloroethane	6.8 U	6.8	0.57	.95	11/13/20 18:01	
Chloroform	6.8 U	6.8	0.28	.95	11/13/20 18:01	
Chloromethane	6.8 U	6.8	2.0	.95	11/13/20 18:01	
Cyclohexane	6.8 U	6.8	0.36	.95	11/13/20 18:01	
Dibromochloromethane	6.8 U	6.8	0.28	.95	11/13/20 18:01	
Dichlorodifluoromethane (CFC 12)	6.8 U	6.8	0.46	.95	11/13/20 18:01	
Dichloromethane	6.8 U	6.8	3.9	.95	11/13/20 18:01	
Ethylbenzene	6.8 U	6.8	0.28	.95	11/13/20 18:01	
Isopropylbenzene (Cumene)	6.8 U	6.8	0.28	.95	11/13/20 18:01	
Methyl Acetate	6.8 U	6.8	1.2	.95	11/13/20 18:01	
Methyl tert-Butyl Ether	6.8 U	6.8	0.28	.95	11/13/20 18:01	
Methylcyclohexane	6.8 U	6.8	0.43	.95	11/13/20 18:01	
Styrene	6.8 U	6.8	0.28	.95	11/13/20 18:01	
Tetrachloroethene (PCE)	6.8 U	6.8	0.32	.95	11/13/20 18:01	
Toluene	6.8 U	6.8	0.28	.95	11/13/20 18:01	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 09:15
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	EB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-004	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	6.8 U	6.8	0.31	.95	11/13/20 18:01	
Trichlorofluoromethane (CFC 11)	6.8 U	6.8	0.36	.95	11/13/20 18:01	
Vinyl Chloride	6.8 U	6.8	0.63	.95	11/13/20 18:01	
cis-1,2-Dichloroethene	6.8 U	6.8	0.28	.95	11/13/20 18:01	
cis-1,3-Dichloropropene	6.8 U	6.8	0.28	.95	11/13/20 18:01	
m,p-Xylenes	14 U	14	0.51	.95	11/13/20 18:01	
o-Xylene	6.8 U	6.8	0.28	.95	11/13/20 18:01	
trans-1,2-Dichloroethene	6.8 U	6.8	0.28	.95	11/13/20 18:01	
trans-1,3-Dichloropropene	6.8 U	6.8	0.28	.95	11/13/20 18:01	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	78	31 - 154	11/13/20 18:01	
Dibromofluoromethane	121	63 - 138	11/13/20 18:01	
Toluene-d8	109	66 - 138	11/13/20 18:01	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 09:15
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	EB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-004	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	7.1 U	7.1	0.29	.99	11/15/20 15:47	
1,1,2,2-Tetrachloroethane	7.1 U	7.1	0.63	.99	11/15/20 15:47	
1,1,2-Trichloroethane	7.1 U	7.1	0.29	.99	11/15/20 15:47	
1,1,2-Trichloro-1,2,2-trifluoroethane	7.1 U	7.1	0.29	.99	11/15/20 15:47	
1,1-Dichloroethane (1,1-DCA)	7.1 U	7.1	0.29	.99	11/15/20 15:47	
1,1-Dichloroethene (1,1-DCE)	7.1 U	7.1	0.42	.99	11/15/20 15:47	
1,2,3-Trichlorobenzene	7.1 U	7.1	0.75	.99	11/15/20 15:47	
1,2,4-Trichlorobenzene	7.1 U	7.1	0.60	.99	11/15/20 15:47	
1,2-Dibromo-3-chloropropane (DBCP)	7.1 U	7.1	1.1	.99	11/15/20 15:47	
1,2-Dibromoethane	7.1 U	7.1	0.29	.99	11/15/20 15:47	
1,2-Dichlorobenzene	7.1 U	7.1	0.29	.99	11/15/20 15:47	
1,2-Dichloroethane	7.1 U	7.1	0.29	.99	11/15/20 15:47	
1,2-Dichloropropane	7.1 U	7.1	0.29	.99	11/15/20 15:47	
1,3-Dichlorobenzene	7.1 U	7.1	0.29	.99	11/15/20 15:47	
1,4-Dichlorobenzene	7.1 U	7.1	0.32	.99	11/15/20 15:47	
1,4-Dioxane	140 U	140	29	.99	11/15/20 15:47	
2-Butanone (MEK)	7.1 U	7.1	2.9	.99	11/15/20 15:47	
2-Hexanone	7.1 U	7.1	0.52	.99	11/15/20 15:47	
4-Methyl-2-pentanone	7.1 U	7.1	0.33	.99	11/15/20 15:47	
Acetone	7.1 U	7.1	6.7	.99	11/15/20 15:47	
Benzene	7.1 U	7.1	0.29	.99	11/15/20 15:47	
Bromochloromethane	7.1 U	7.1	0.29	.99	11/15/20 15:47	
Bromodichloromethane	7.1 U	7.1	0.29	.99	11/15/20 15:47	
Bromoform	7.1 U	7.1	0.72	.99	11/15/20 15:47	
Bromomethane	7.1 U	7.1	3.0	.99	11/15/20 15:47	
Carbon Disulfide	**1.6 J**	7.1	0.42	.99	11/15/20 15:47	
Carbon Tetrachloride	7.1 U	7.1	0.38	.99	11/15/20 15:47	
Chlorobenzene	7.1 U	7.1	0.29	.99	11/15/20 15:47	
Chloroethane	7.1 U	7.1	0.59	.99	11/15/20 15:47	
Chloroform	7.1 U	7.1	0.29	.99	11/15/20 15:47	
Chloromethane	7.1 U	7.1	2.0	.99	11/15/20 15:47	
Cyclohexane	**1.0 J**	7.1	0.38	.99	11/15/20 15:47	
Dibromochloromethane	7.1 U	7.1	0.29	.99	11/15/20 15:47	
Dichlorodifluoromethane (CFC 12)	7.1 U	7.1	0.48	.99	11/15/20 15:47	
Dichloromethane	7.1 U	7.1	4.0	.99	11/15/20 15:47	
Ethylbenzene	7.1 U	7.1	0.29	.99	11/15/20 15:47	
Isopropylbenzene (Cumene)	7.1 U	7.1	0.29	.99	11/15/20 15:47	
Methyl Acetate	7.1 U	7.1	1.2	.99	11/15/20 15:47	
Methyl tert-Butyl Ether	7.1 U	7.1	0.29	.99	11/15/20 15:47	
Methylcyclohexane	**1.7 J**	7.1	0.45	.99	11/15/20 15:47	
Styrene	7.1 U	7.1	0.29	.99	11/15/20 15:47	
Tetrachloroethene (PCE)	7.1 U	7.1	0.33	.99	11/15/20 15:47	
Toluene	**0.51 J**	7.1	0.29	.99	11/15/20 15:47	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 09:15
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	EB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-004	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	7.1	U	7.1	0.32	.99	11/15/20 15:47	
Trichlorofluoromethane (CFC 11)	7.1	U	7.1	0.38	.99	11/15/20 15:47	
Vinyl Chloride	7.1	U	7.1	0.66	.99	11/15/20 15:47	
cis-1,2-Dichloroethene	7.1	U	7.1	0.29	.99	11/15/20 15:47	
cis-1,3-Dichloropropene	7.1	U	7.1	0.29	.99	11/15/20 15:47	
m,p-Xylenes	14	U	14	0.53	.99	11/15/20 15:47	
o-Xylene	**0.34**	**J**	7.1	0.29	.99	11/15/20 15:47	
trans-1,2-Dichloroethene	7.1	U	7.1	0.29	.99	11/15/20 15:47	
trans-1,3-Dichloropropene	7.1	U	7.1	0.29	.99	11/15/20 15:47	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	47	31 - 154	11/15/20 15:47	
Dibromofluoromethane	129	63 - 138	11/15/20 15:47	
Toluene-d8	107	66 - 138	11/15/20 15:47	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 11:45
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WAB1-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-005	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	4.8 U	4.8	0.20	.87	11/15/20 16:11	
1,1,2,2-Tetrachloroethane	4.8 U	4.8	0.43	.87	11/15/20 16:11	
1,1,2-Trichloroethane	4.8 U	4.8	0.20	.87	11/15/20 16:11	
1,1,2-Trichloro-1,2,2-trifluoroethane	4.8 U	4.8	0.20	.87	11/15/20 16:11	
1,1-Dichloroethane (1,1-DCA)	4.8 U	4.8	0.20	.87	11/15/20 16:11	
1,1-Dichloroethene (1,1-DCE)	4.8 U	4.8	0.28	.87	11/15/20 16:11	
1,2,3-Trichlorobenzene	4.8 U	4.8	0.50	.87	11/15/20 16:11	
1,2,4-Trichlorobenzene	4.8 U	4.8	0.41	.87	11/15/20 16:11	
1,2-Dibromo-3-chloropropane (DBCP)	4.8 U	4.8	0.73	.87	11/15/20 16:11	
1,2-Dibromoethane	4.8 U	4.8	0.20	.87	11/15/20 16:11	
1,2-Dichlorobenzene	4.8 U	4.8	0.20	.87	11/15/20 16:11	
1,2-Dichloroethane	4.8 U	4.8	0.20	.87	11/15/20 16:11	
1,2-Dichloropropane	4.8 U	4.8	0.20	.87	11/15/20 16:11	
1,3-Dichlorobenzene	4.8 U	4.8	0.20	.87	11/15/20 16:11	
1,4-Dichlorobenzene	4.8 U	4.8	0.22	.87	11/15/20 16:11	
1,4-Dioxane	96 U	96	20	.87	11/15/20 16:11	
2-Butanone (MEK)	4.8 U	4.8	2.0	.87	11/15/20 16:11	
2-Hexanone	4.8 U	4.8	0.35	.87	11/15/20 16:11	
4-Methyl-2-pentanone	4.8 U	4.8	0.23	.87	11/15/20 16:11	
Acetone	**5.6**	4.8	4.6	.87	11/15/20 16:11	
Benzene	4.8 U	4.8	0.20	.87	11/15/20 16:11	
Bromochloromethane	4.8 U	4.8	0.20	.87	11/15/20 16:11	
Bromodichloromethane	4.8 U	4.8	0.20	.87	11/15/20 16:11	
Bromoform	4.8 U	4.8	0.49	.87	11/15/20 16:11	
Bromomethane	4.8 U	4.8	2.1	.87	11/15/20 16:11	
Carbon Disulfide	4.8 U	4.8	0.28	.87	11/15/20 16:11	
Carbon Tetrachloride	4.8 U	4.8	0.25	.87	11/15/20 16:11	
Chlorobenzene	4.8 U	4.8	0.20	.87	11/15/20 16:11	
Chloroethane	4.8 U	4.8	0.40	.87	11/15/20 16:11	
Chloroform	4.8 U	4.8	0.20	.87	11/15/20 16:11	
Chloromethane	4.8 U	4.8	1.4	.87	11/15/20 16:11	
Cyclohexane	4.8 U	4.8	0.25	.87	11/15/20 16:11	
Dibromochloromethane	4.8 U	4.8	0.20	.87	11/15/20 16:11	
Dichlorodifluoromethane (CFC 12)	4.8 U	4.8	0.32	.87	11/15/20 16:11	
Dichloromethane	4.8 U	4.8	2.7	.87	11/15/20 16:11	
Ethylbenzene	4.8 U	4.8	0.20	.87	11/15/20 16:11	
Isopropylbenzene (Cumene)	4.8 U	4.8	0.20	.87	11/15/20 16:11	
Methyl Acetate	4.8 U	4.8	0.81	.87	11/15/20 16:11	
Methyl tert-Butyl Ether	4.8 U	4.8	0.20	.87	11/15/20 16:11	
Methylcyclohexane	4.8 U	4.8	0.30	.87	11/15/20 16:11	
Styrene	4.8 U	4.8	0.20	.87	11/15/20 16:11	
Tetrachloroethene (PCE)	4.8 U	4.8	0.23	.87	11/15/20 16:11	
Toluene	4.8 U	4.8	0.20	.87	11/15/20 16:11	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 11:45
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WAB1-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-005	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	4.8 U	4.8	0.22	.87	11/15/20 16:11	
Trichlorofluoromethane (CFC 11)	4.8 U	4.8	0.25	.87	11/15/20 16:11	
Vinyl Chloride	4.8 U	4.8	0.45	.87	11/15/20 16:11	
cis-1,2-Dichloroethene	4.8 U	4.8	0.20	.87	11/15/20 16:11	
cis-1,3-Dichloropropene	4.8 U	4.8	0.20	.87	11/15/20 16:11	
m,p-Xylenes	9.6 U	9.6	0.36	.87	11/15/20 16:11	
o-Xylene	4.8 U	4.8	0.20	.87	11/15/20 16:11	
trans-1,2-Dichloroethene	4.8 U	4.8	0.20	.87	11/15/20 16:11	
trans-1,3-Dichloropropene	4.8 U	4.8	0.20	.87	11/15/20 16:11	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	31 - 154	11/15/20 16:11	
Dibromofluoromethane	118	63 - 138	11/15/20 16:11	
Toluene-d8	108	66 - 138	11/15/20 16:11	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 12:25
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WCB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-006	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
1,1,2,2-Tetrachloroethane	6.8 U	6.8	0.60	1.17	11/13/20 18:48	
1,1,2-Trichloroethane	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
1,1,2-Trichloro-1,2,2-trifluoroethane	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
1,1-Dichloroethane (1,1-DCA)	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
1,1-Dichloroethene (1,1-DCE)	6.8 U	6.8	0.40	1.17	11/13/20 18:48	
1,2,3-Trichlorobenzene	6.8 U	6.8	0.71	1.17	11/13/20 18:48	
1,2,4-Trichlorobenzene	6.8 U	6.8	0.57	1.17	11/13/20 18:48	
1,2-Dibromo-3-chloropropane (DBCP)	6.8 U	6.8	1.1	1.17	11/13/20 18:48	
1,2-Dibromoethane	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
1,2-Dichlorobenzene	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
1,2-Dichloroethane	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
1,2-Dichloropropane	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
1,3-Dichlorobenzene	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
1,4-Dichlorobenzene	6.8 U	6.8	0.30	1.17	11/13/20 18:48	
1,4-Dioxane	140 U	140	28	1.17	11/13/20 18:48	
2-Butanone (MEK)	6.8 U	6.8	2.8	1.17	11/13/20 18:48	
2-Hexanone	6.8 U	6.8	0.49	1.17	11/13/20 18:48	
4-Methyl-2-pentanone	6.8 U	6.8	0.32	1.17	11/13/20 18:48	
Acetone	6.8 U	6.8	6.4	1.17	11/13/20 18:48	
Benzene	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
Bromochloromethane	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
Bromodichloromethane	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
Bromoform	6.8 U	6.8	0.68	1.17	11/13/20 18:48	
Bromomethane	6.8 U	6.8	2.9	1.17	11/13/20 18:48	
Carbon Disulfide	6.8 U	6.8	0.40	1.17	11/13/20 18:48	
Carbon Tetrachloride	6.8 U	6.8	0.36	1.17	11/13/20 18:48	
Chlorobenzene	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
Chloroethane	6.8 U	6.8	0.56	1.17	11/13/20 18:48	
Chloroform	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
Chloromethane	6.8 U	6.8	1.9	1.17	11/13/20 18:48	
Cyclohexane	6.8 U	6.8	0.36	1.17	11/13/20 18:48	
Dibromochloromethane	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
Dichlorodifluoromethane (CFC 12)	6.8 U	6.8	0.45	1.17	11/13/20 18:48	
Dichloromethane	6.8 U	6.8	3.8	1.17	11/13/20 18:48	
Ethylbenzene	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
Isopropylbenzene (Cumene)	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
Methyl Acetate	6.8 U	6.8	1.2	1.17	11/13/20 18:48	
Methyl tert-Butyl Ether	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
Methylcyclohexane	6.8 U	6.8	0.42	1.17	11/13/20 18:48	
Styrene	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
Tetrachloroethene (PCE)	6.8 U	6.8	0.32	1.17	11/13/20 18:48	
Toluene	6.8 U	6.8	0.28	1.17	11/13/20 18:48	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 12:25
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WCB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-006	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	6.8 U	6.8	0.30	1.17	11/13/20 18:48	
Trichlorofluoromethane (CFC 11)	6.8 U	6.8	0.36	1.17	11/13/20 18:48	
Vinyl Chloride	6.8 U	6.8	0.63	1.17	11/13/20 18:48	
cis-1,2-Dichloroethene	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
cis-1,3-Dichloropropene	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
m,p-Xylenes	14 U	14	0.51	1.17	11/13/20 18:48	
o-Xylene	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
trans-1,2-Dichloroethene	6.8 U	6.8	0.28	1.17	11/13/20 18:48	
trans-1,3-Dichloropropene	6.8 U	6.8	0.28	1.17	11/13/20 18:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	77	31 - 154	11/13/20 18:48	
Dibromofluoromethane	120	63 - 138	11/13/20 18:48	
Toluene-d8	110	66 - 138	11/13/20 18:48	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 12:25
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WCB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-006	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
1,1,2,2-Tetrachloroethane	6.9 U	6.9	0.62	1.2	11/15/20 16:34	
1,1,2-Trichloroethane	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
1,1,2-Trichloro-1,2,2-trifluoroethane	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
1,1-Dichloroethane (1,1-DCA)	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
1,1-Dichloroethene (1,1-DCE)	6.9 U	6.9	0.41	1.2	11/15/20 16:34	
1,2,3-Trichlorobenzene	6.9 U	6.9	0.73	1.2	11/15/20 16:34	
1,2,4-Trichlorobenzene	6.9 U	6.9	0.59	1.2	11/15/20 16:34	
1,2-Dibromo-3-chloropropane (DBCP)	6.9 U	6.9	1.1	1.2	11/15/20 16:34	
1,2-Dibromoethane	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
1,2-Dichlorobenzene	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
1,2-Dichloroethane	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
1,2-Dichloropropane	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
1,3-Dichlorobenzene	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
1,4-Dichlorobenzene	6.9 U	6.9	0.31	1.2	11/15/20 16:34	
1,4-Dioxane	140 U	140	28	1.2	11/15/20 16:34	
2-Butanone (MEK)	6.9 U	6.9	2.8	1.2	11/15/20 16:34	
2-Hexanone	6.9 U	6.9	0.50	1.2	11/15/20 16:34	
4-Methyl-2-pentanone	6.9 U	6.9	0.32	1.2	11/15/20 16:34	
Acetone	**7.4**	6.9	6.6	1.2	11/15/20 16:34	
Benzene	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
Bromochloromethane	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
Bromodichloromethane	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
Bromoform	6.9 U	6.9	0.70	1.2	11/15/20 16:34	
Bromomethane	6.9 U	6.9	3.0	1.2	11/15/20 16:34	
Carbon Disulfide	**0.53 J**	6.9	0.41	1.2	11/15/20 16:34	
Carbon Tetrachloride	6.9 U	6.9	0.37	1.2	11/15/20 16:34	
Chlorobenzene	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
Chloroethane	6.9 U	6.9	0.57	1.2	11/15/20 16:34	
Chloroform	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
Chloromethane	6.9 U	6.9	2.0	1.2	11/15/20 16:34	
Cyclohexane	6.9 U	6.9	0.37	1.2	11/15/20 16:34	
Dibromochloromethane	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
Dichlorodifluoromethane (CFC 12)	6.9 U	6.9	0.46	1.2	11/15/20 16:34	
Dichloromethane	6.9 U	6.9	3.9	1.2	11/15/20 16:34	
Ethylbenzene	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
Isopropylbenzene (Cumene)	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
Methyl Acetate	6.9 U	6.9	1.2	1.2	11/15/20 16:34	
Methyl tert-Butyl Ether	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
Methylcyclohexane	6.9 U	6.9	0.44	1.2	11/15/20 16:34	
Styrene	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
Tetrachloroethene (PCE)	6.9 U	6.9	0.32	1.2	11/15/20 16:34	
Toluene	6.9 U	6.9	0.28	1.2	11/15/20 16:34	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 12:25
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WCB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-006	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	6.9 U	6.9	0.31	1.2	11/15/20 16:34	
Trichlorofluoromethane (CFC 11)	6.9 U	6.9	0.37	1.2	11/15/20 16:34	
Vinyl Chloride	6.9 U	6.9	0.64	1.2	11/15/20 16:34	
cis-1,2-Dichloroethene	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
cis-1,3-Dichloropropene	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
m,p-Xylenes	14 U	14	0.52	1.2	11/15/20 16:34	
o-Xylene	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
trans-1,2-Dichloroethene	6.9 U	6.9	0.28	1.2	11/15/20 16:34	
trans-1,3-Dichloropropene	6.9 U	6.9	0.28	1.2	11/15/20 16:34	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	77	31 - 154	11/15/20 16:34	
Dibromofluoromethane	119	63 - 138	11/15/20 16:34	
Toluene-d8	110	66 - 138	11/15/20 16:34	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Semivolatile Organic Compounds by GC/MS

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

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/03/20 09:45
Sample Matrix:	Soil	**Date Received:**	11/03/20 17:00
Sample Name:	WGB-8-2-4-11032020	**Units:**	ug/Kg
Lab Code:	R2010361-001	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	190 U	190	78	5	11/18/20 23:19	11/9/20	
1,4-Dioxane	380 U	380	200	5	11/18/20 23:19	11/9/20	
2,3,4,6-Tetrachlorophenol	190 U	190	66	5	11/18/20 23:19	11/9/20	
2,4,5-Trichlorophenol	190 U	190	43	5	11/18/20 23:19	11/9/20	
2,4,6-Trichlorophenol	190 U	190	42	5	11/18/20 23:19	11/9/20	
2,4-Dichlorophenol	190 U	190	44	5	11/18/20 23:19	11/9/20	
2,4-Dimethylphenol	190 U	190	77	5	11/18/20 23:19	11/9/20	
2,4-Dinitrophenol	190 U	190	55	5	11/18/20 23:19	11/9/20	
2,4-Dinitrotoluene	190 U	190	85	5	11/18/20 23:19	11/9/20	
2,6-Dinitrotoluene	190 U	190	88	5	11/18/20 23:19	11/9/20	
2-Chloronaphthalene	190 U	190	73	5	11/18/20 23:19	11/9/20	
2-Chlorophenol	190 U	190	46	5	11/18/20 23:19	11/9/20	
2-Methylnaphthalene	**19 J**	37	11	5	11/18/20 23:19	11/9/20	
2-Methylphenol	190 U	190	43	5	11/18/20 23:19	11/9/20	
2-Nitroaniline	190 U	190	95	5	11/18/20 23:19	11/9/20	
2-Nitrophenol	190 U	190	44	5	11/18/20 23:19	11/9/20	
3,3'-Dichlorobenzidine	190 U	190	110	5	11/18/20 23:19	11/9/20	
3- and 4-Methylphenol Coelution	190 U	190	47	5	11/18/20 23:19	11/9/20	
3-Nitroaniline	190 U	190	43	5	11/18/20 23:19	11/9/20	
4,6-Dinitro-2-methylphenol	190 U	190	68	5	11/18/20 23:19	11/9/20	
4-Bromophenyl Phenyl Ether	190 U	190	78	5	11/18/20 23:19	11/9/20	
4-Chloro-3-methylphenol	190 U	190	83	5	11/18/20 23:19	11/9/20	
4-Chloroaniline	190 U	190	54	5	11/18/20 23:19	11/9/20	
4-Chlorophenyl Phenyl Ether	190 U	190	75	5	11/18/20 23:19	11/9/20	
4-Nitroaniline	190 U	190	96	5	11/18/20 23:19	11/9/20	
4-Nitrophenol	190 U	190	150	5	11/18/20 23:19	11/9/20	
Acenaphthene	**23 J**	37	9.3	5	11/18/20 23:19	11/9/20	
Acenaphthylene	**74**	37	11	5	11/18/20 23:19	11/9/20	
Acetophenone	190 U	190	62	5	11/18/20 23:19	11/9/20	
Anthracene	**84**	37	23	5	11/18/20 23:19	11/9/20	
Atrazine	190 U	190	50	5	11/18/20 23:19	11/9/20	
Benz(a)anthracene	**220**	38	29	5	11/18/20 23:19	11/9/20	
Benzaldehyde	190 U	190	83	5	11/18/20 23:19	11/9/20	
Benzo(a)pyrene	**390**	37	16	5	11/18/20 23:19	11/9/20	
Benzo(b)fluoranthene	**400**	37	20	5	11/18/20 23:19	11/9/20	
Benzo(g,h,i)perylene	**310**	37	16	5	11/18/20 23:19	11/9/20	
Benzo(k)fluoranthene	**130**	37	22	5	11/18/20 23:19	11/9/20	
Biphenyl	190 U	190	47	5	11/18/20 23:19	11/9/20	
2,2'-Oxybis(1-chloropropane)	190 U	190	80	5	11/18/20 23:19	11/9/20	
Bis(2-chloroethoxy)methane	190 U	190	74	5	11/18/20 23:19	11/9/20	
Bis(2-chloroethyl) Ether	190 U	190	74	5	11/18/20 23:19	11/9/20	
Bis(2-ethylhexyl) Phthalate	3400 U	3400	170	5	11/18/20 23:19	11/9/20	
Butyl Benzyl Phthalate	960 U	960	93	5	11/18/20 23:19	11/9/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/03/20 09:45
Sample Matrix:	Soil	**Date Received:**	11/03/20 17:00
Sample Name:	WGB-8-2-4-11032020	**Units:**	ug/Kg
Lab Code:	R2010361-001	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Caprolactam	190 U	190	150	5	11/18/20 23:19	11/9/20	
Carbazole	190 U	190	79	5	11/18/20 23:19	11/9/20	
Chrysene	**270**	37	16	5	11/18/20 23:19	11/9/20	
Di-n-butyl Phthalate	2800 U	2800	91	5	11/18/20 23:19	11/9/20	
Di-n-octyl Phthalate	960 U	960	170	5	11/18/20 23:19	11/9/20	
Dibenz(a,h)anthracene	**77**	37	16	5	11/18/20 23:19	11/9/20	
Dibenzofuran	37 U	37	17	5	11/18/20 23:19	11/9/20	
Diethyl Phthalate	1100 U	1100	110	5	11/18/20 23:19	11/9/20	
Dimethyl Phthalate	960 U	960	82	5	11/18/20 23:19	11/9/20	
Fluoranthene	**440**	37	28	5	11/18/20 23:19	11/9/20	
Fluorene	**29 J**	37	9.6	5	11/18/20 23:19	11/9/20	
Hexachlorobenzene	37 U	37	14	5	11/18/20 23:19	11/9/20	
Hexachlorobutadiene	190 U	190	74	5	11/18/20 23:19	11/9/20	
Hexachlorocyclopentadiene	190 U	190	130	5	11/18/20 23:19	11/9/20	
Hexachloroethane	190 U	190	66	5	11/18/20 23:19	11/9/20	
Indeno(1,2,3-cd)pyrene	**270**	37	17	5	11/18/20 23:19	11/9/20	
Isophorone	190 U	190	82	5	11/18/20 23:19	11/9/20	
N-Nitrosodi-n-propylamine	190 U	190	68	5	11/18/20 23:19	11/9/20	
N-Nitrosodiphenylamine	190 U	190	59	5	11/18/20 23:19	11/9/20	
Naphthalene	**43**	37	13	5	11/18/20 23:19	11/9/20	
Nitrobenzene	37 U	37	16	5	11/18/20 23:19	11/9/20	
Pentachlorophenol (PCP)	190 U	190	170	5	11/18/20 23:19	11/9/20	
Phenanthrene	**220**	37	20	5	11/18/20 23:19	11/9/20	
Phenol	190 U	190	50	5	11/18/20 23:19	11/9/20	
Pyrene	**350**	37	19	5	11/18/20 23:19	11/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	56	19 - 107	11/18/20 23:19	
2-Fluorobiphenyl	65	10 - 115	11/18/20 23:19	
2-Fluorophenol	49	10 - 97	11/18/20 23:19	
Nitrobenzene-d5	63	10 - 130	11/18/20 23:19	
Phenol-d6	55	17 - 135	11/18/20 23:19	
Terphenyl-d14	65	10 - 130	11/18/20 23:19	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Native-10-12-11042020	**Units:**	ug/Kg
Lab Code:	R2010361-002	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	41 U	41	18	1	11/18/20 23:48	11/9/20	
1,4-Dioxane	83 U	83	43	1	11/18/20 23:48	11/9/20	
2,3,4,6-Tetrachlorophenol	41 U	41	15	1	11/18/20 23:48	11/9/20	
2,4,5-Trichlorophenol	41 U	41	9.5	1	11/18/20 23:48	11/9/20	
2,4,6-Trichlorophenol	41 U	41	9.2	1	11/18/20 23:48	11/9/20	
2,4-Dichlorophenol	41 U	41	9.7	1	11/18/20 23:48	11/9/20	
2,4-Dimethylphenol	41 U	41	17	1	11/18/20 23:48	11/9/20	
2,4-Dinitrophenol	41 U	41	13	1	11/18/20 23:48	11/9/20	
2,4-Dinitrotoluene	41 U	41	19	1	11/18/20 23:48	11/9/20	
2,6-Dinitrotoluene	41 U	41	20	1	11/18/20 23:48	11/9/20	
2-Chloronaphthalene	41 U	41	16	1	11/18/20 23:48	11/9/20	
2-Chlorophenol	41 U	41	10	1	11/18/20 23:48	11/9/20	
2-Methylnaphthalene	8.2 U	8.2	2.4	1	11/18/20 23:48	11/9/20	
2-Methylphenol	41 U	41	9.4	1	11/18/20 23:48	11/9/20	
2-Nitroaniline	41 U	41	21	1	11/18/20 23:48	11/9/20	
2-Nitrophenol	41 U	41	9.7	1	11/18/20 23:48	11/9/20	
3,3'-Dichlorobenzidine	41 U	41	24	1	11/18/20 23:48	11/9/20	
3- and 4-Methylphenol Coelution	41 U	41	11	1	11/18/20 23:48	11/9/20	
3-Nitroaniline	41 U	41	9.4	1	11/18/20 23:48	11/9/20	
4,6-Dinitro-2-methylphenol	41 U	41	15	1	11/18/20 23:48	11/9/20	
4-Bromophenyl Phenyl Ether	41 U	41	18	1	11/18/20 23:48	11/9/20	
4-Chloro-3-methylphenol	41 U	41	19	1	11/18/20 23:48	11/9/20	
4-Chloroaniline	41 U	41	12	1	11/18/20 23:48	11/9/20	
4-Chlorophenyl Phenyl Ether	41 U	41	17	1	11/18/20 23:48	11/9/20	
4-Nitroaniline	41 U	41	22	1	11/18/20 23:48	11/9/20	
4-Nitrophenol	41 U	41	32	1	11/18/20 23:48	11/9/20	
Acenaphthene	8.2 U	8.2	2.1	1	11/18/20 23:48	11/9/20	
Acenaphthylene	**5.3 J**	8.2	2.3	1	11/18/20 23:48	11/9/20	
Acetophenone	41 U	41	14	1	11/18/20 23:48	11/9/20	
Anthracene	8.2 U	8.2	5.0	1	11/18/20 23:48	11/9/20	
Atrazine	41 U	41	11	1	11/18/20 23:48	11/9/20	
Benz(a)anthracene	8.3 U	8.3	6.3	1	11/18/20 23:48	11/9/20	
Benzaldehyde	41 U	41	19	1	11/18/20 23:48	11/9/20	
Benzo(a)pyrene	**5.2 J**	8.2	3.4	1	11/18/20 23:48	11/9/20	
Benzo(b)fluoranthene	**6.1 J**	8.2	4.4	1	11/18/20 23:48	11/9/20	
Benzo(g,h,i)perylene	**5.4 J**	8.2	3.5	1	11/18/20 23:48	11/9/20	
Benzo(k)fluoranthene	8.2 U	8.2	4.7	1	11/18/20 23:48	11/9/20	
Biphenyl	41 U	41	11	1	11/18/20 23:48	11/9/20	
2,2'-Oxybis(1-chloropropane)	41 U	41	18	1	11/18/20 23:48	11/9/20	
Bis(2-chloroethoxy)methane	41 U	41	17	1	11/18/20 23:48	11/9/20	
Bis(2-chloroethyl) Ether	41 U	41	17	1	11/18/20 23:48	11/9/20	
Bis(2-ethylhexyl) Phthalate	750 U	750	38	1	11/18/20 23:48	11/9/20	
Butyl Benzyl Phthalate	210 U	210	21	1	11/18/20 23:48	11/9/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Native-10-12-11042020	**Units:**	ug/Kg
Lab Code:	R2010361-002	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Caprolactam	41 U	41	32	1	11/18/20 23:48	11/9/20	
Carbazole	41 U	41	18	1	11/18/20 23:48	11/9/20	
Chrysene	**3.6 J**	8.2	3.4	1	11/18/20 23:48	11/9/20	
Di-n-butyl Phthalate	620 U	620	20	1	11/18/20 23:48	11/9/20	
Di-n-octyl Phthalate	210 U	210	36	1	11/18/20 23:48	11/9/20	
Dibenz(a,h)anthracene	8.2 U	8.2	3.4	1	11/18/20 23:48	11/9/20	
Dibenzofuran	8.2 U	8.2	3.7	1	11/18/20 23:48	11/9/20	
Diethyl Phthalate	250 U	250	23	1	11/18/20 23:48	11/9/20	
Dimethyl Phthalate	210 U	210	18	1	11/18/20 23:48	11/9/20	
Fluoranthene	**8.4**	8.2	6.1	1	11/18/20 23:48	11/9/20	
Fluorene	8.2 U	8.2	2.2	1	11/18/20 23:48	11/9/20	
Hexachlorobenzene	8.2 U	8.2	3.0	1	11/18/20 23:48	11/9/20	
Hexachlorobutadiene	41 U	41	17	1	11/18/20 23:48	11/9/20	
Hexachlorocyclopentadiene	41 U	41	29	1	11/18/20 23:48	11/9/20	
Hexachloroethane	41 U	41	15	1	11/18/20 23:48	11/9/20	
Indeno(1,2,3-cd)pyrene	8.2 U	8.2	3.7	1	11/18/20 23:48	11/9/20	
Isophorone	41 U	41	18	1	11/18/20 23:48	11/9/20	
N-Nitrosodi-n-propylamine	41 U	41	15	1	11/18/20 23:48	11/9/20	
N-Nitrosodiphenylamine	41 U	41	13	1	11/18/20 23:48	11/9/20	
Naphthalene	**26**	8.2	2.9	1	11/18/20 23:48	11/9/20	
Nitrobenzene	8.2 U	8.2	3.4	1	11/18/20 23:48	11/9/20	
Pentachlorophenol (PCP)	41 U	41	36	1	11/18/20 23:48	11/9/20	
Phenanthrene	**7.6 J**	8.2	4.4	1	11/18/20 23:48	11/9/20	
Phenol	41 U	41	11	1	11/18/20 23:48	11/9/20	
Pyrene	**7.1 J**	8.2	4.0	1	11/18/20 23:48	11/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	65	19 - 107	11/18/20 23:48	
2-Fluorobiphenyl	73	10 - 115	11/18/20 23:48	
2-Fluorophenol	64	10 - 97	11/18/20 23:48	
Nitrobenzene-d5	65	10 - 130	11/18/20 23:48	
Phenol-d6	72	17 - 135	11/18/20 23:48	
Terphenyl-d14	77	10 - 130	11/18/20 23:48	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Fill-0.5-2-11042020	**Units:**	ug/Kg
Lab Code:	R2010361-003	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	41 U	41	18	1	11/19/20 00:16	11/9/20	
1,4-Dioxane	83 U	83	42	1	11/19/20 00:16	11/9/20	
2,3,4,6-Tetrachlorophenol	41 U	41	15	1	11/19/20 00:16	11/9/20	
2,4,5-Trichlorophenol	41 U	41	9.4	1	11/19/20 00:16	11/9/20	
2,4,6-Trichlorophenol	41 U	41	9.2	1	11/19/20 00:16	11/9/20	
2,4-Dichlorophenol	41 U	41	9.7	1	11/19/20 00:16	11/9/20	
2,4-Dimethylphenol	41 U	41	17	1	11/19/20 00:16	11/9/20	
2,4-Dinitrophenol	41 U	41	12	1	11/19/20 00:16	11/9/20	
2,4-Dinitrotoluene	41 U	41	19	1	11/19/20 00:16	11/9/20	
2,6-Dinitrotoluene	41 U	41	20	1	11/19/20 00:16	11/9/20	
2-Chloronaphthalene	41 U	41	16	1	11/19/20 00:16	11/9/20	
2-Chlorophenol	41 U	41	9.9	1	11/19/20 00:16	11/9/20	
2-Methylnaphthalene	**3.4 J**	8.2	2.4	1	11/19/20 00:16	11/9/20	
2-Methylphenol	41 U	41	9.3	1	11/19/20 00:16	11/9/20	
2-Nitroaniline	41 U	41	21	1	11/19/20 00:16	11/9/20	
2-Nitrophenol	41 U	41	9.7	1	11/19/20 00:16	11/9/20	
3,3'-Dichlorobenzidine	41 U	41	24	1	11/19/20 00:16	11/9/20	
3- and 4-Methylphenol Coelution	41 U	41	11	1	11/19/20 00:16	11/9/20	
3-Nitroaniline	41 U	41	9.3	1	11/19/20 00:16	11/9/20	
4,6-Dinitro-2-methylphenol	41 U	41	15	1	11/19/20 00:16	11/9/20	
4-Bromophenyl Phenyl Ether	41 U	41	18	1	11/19/20 00:16	11/9/20	
4-Chloro-3-methylphenol	41 U	41	19	1	11/19/20 00:16	11/9/20	
4-Chloroaniline	41 U	41	12	1	11/19/20 00:16	11/9/20	
4-Chlorophenyl Phenyl Ether	41 U	41	17	1	11/19/20 00:16	11/9/20	
4-Nitroaniline	41 U	41	21	1	11/19/20 00:16	11/9/20	
4-Nitrophenol	41 U	41	31	1	11/19/20 00:16	11/9/20	
Acenaphthene	8.2 U	8.2	2.1	1	11/19/20 00:16	11/9/20	
Acenaphthylene	**4.9 J**	8.2	2.3	1	11/19/20 00:16	11/9/20	
Acetophenone	41 U	41	14	1	11/19/20 00:16	11/9/20	
Anthracene	8.2 U	8.2	5.0	1	11/19/20 00:16	11/9/20	
Atrazine	41 U	41	11	1	11/19/20 00:16	11/9/20	
Benz(a)anthracene	**15**	8.2	6.2	1	11/19/20 00:16	11/9/20	
Benzaldehyde	41 U	41	19	1	11/19/20 00:16	11/9/20	
Benzo(a)pyrene	**19**	8.2	3.4	1	11/19/20 00:16	11/9/20	
Benzo(b)fluoranthene	**23**	8.2	4.4	1	11/19/20 00:16	11/9/20	
Benzo(g,h,i)perylene	**15**	8.2	3.5	1	11/19/20 00:16	11/9/20	
Benzo(k)fluoranthene	**7.6 J**	8.2	4.7	1	11/19/20 00:16	11/9/20	
Biphenyl	41 U	41	11	1	11/19/20 00:16	11/9/20	
2,2'-Oxybis(1-chloropropane)	41 U	41	18	1	11/19/20 00:16	11/9/20	
Bis(2-chloroethoxy)methane	41 U	41	17	1	11/19/20 00:16	11/9/20	
Bis(2-chloroethyl) Ether	41 U	41	17	1	11/19/20 00:16	11/9/20	
Bis(2-ethylhexyl) Phthalate	740 U	740	38	1	11/19/20 00:16	11/9/20	
Butyl Benzyl Phthalate	210 U	210	21	1	11/19/20 00:16	11/9/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Fill-0.5-2-11042020	**Units:**	ug/Kg
Lab Code:	R2010361-003	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Caprolactam	41 U	41	31	1	11/19/20 00:16	11/9/20	
Carbazole	41 U	41	18	1	11/19/20 00:16	11/9/20	
Chrysene	**19**	8.2	3.4	1	11/19/20 00:16	11/9/20	
Di-n-butyl Phthalate	620 U	620	20	1	11/19/20 00:16	11/9/20	
Di-n-octyl Phthalate	210 U	210	36	1	11/19/20 00:16	11/9/20	
Dibenz(a,h)anthracene	8.2 U	8.2	3.4	1	11/19/20 00:16	11/9/20	
Dibenzofuran	8.2 U	8.2	3.7	1	11/19/20 00:16	11/9/20	
Diethyl Phthalate	250 U	250	23	1	11/19/20 00:16	11/9/20	
Dimethyl Phthalate	210 U	210	18	1	11/19/20 00:16	11/9/20	
Fluoranthene	**32**	8.2	6.1	1	11/19/20 00:16	11/9/20	
Fluorene	8.2 U	8.2	2.1	1	11/19/20 00:16	11/9/20	
Hexachlorobenzene	8.2 U	8.2	3.0	1	11/19/20 00:16	11/9/20	
Hexachlorobutadiene	41 U	41	17	1	11/19/20 00:16	11/9/20	
Hexachlorocyclopentadiene	41 U	41	29	1	11/19/20 00:16	11/9/20	
Hexachloroethane	41 U	41	15	1	11/19/20 00:16	11/9/20	
Indeno(1,2,3-cd)pyrene	**14**	8.2	3.6	1	11/19/20 00:16	11/9/20	
Isophorone	41 U	41	18	1	11/19/20 00:16	11/9/20	
N-Nitrosodi-n-propylamine	41 U	41	15	1	11/19/20 00:16	11/9/20	
N-Nitrosodiphenylamine	41 U	41	13	1	11/19/20 00:16	11/9/20	
Naphthalene	**24**	8.2	2.9	1	11/19/20 00:16	11/9/20	
Nitrobenzene	8.2 U	8.2	3.4	1	11/19/20 00:16	11/9/20	
Pentachlorophenol (PCP)	41 U	41	36	1	11/19/20 00:16	11/9/20	
Phenanthrene	**14**	8.2	4.4	1	11/19/20 00:16	11/9/20	
Phenol	41 U	41	11	1	11/19/20 00:16	11/9/20	
Pyrene	**27**	8.2	4.0	1	11/19/20 00:16	11/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	70	19 - 107	11/19/20 00:16	
2-Fluorobiphenyl	78	10 - 115	11/19/20 00:16	
2-Fluorophenol	68	10 - 97	11/19/20 00:16	
Nitrobenzene-d5	62	10 - 130	11/19/20 00:16	
Phenol-d6	73	17 - 135	11/19/20 00:16	
Terphenyl-d14	77	10 - 130	11/19/20 00:16	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 09:15
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	EB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-004	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	230 U	230	98	5	11/25/20 04:25	11/10/20	
1,4-Dioxane	470 U	470	240	5	11/25/20 04:25	11/10/20	
2,3,4,6-Tetrachlorophenol	230 U	230	83	5	11/25/20 04:25	11/10/20	
2,4,5-Trichlorophenol	230 U	230	54	5	11/25/20 04:25	11/10/20	
2,4,6-Trichlorophenol	230 U	230	53	5	11/25/20 04:25	11/10/20	
2,4-Dichlorophenol	230 U	230	56	5	11/25/20 04:25	11/10/20	
2,4-Dimethylphenol	230 U	230	97	5	11/25/20 04:25	11/10/20	
2,4-Dinitrophenol	230 U	230	69	5	11/25/20 04:25	11/10/20	
2,4-Dinitrotoluene	230 U	230	110	5	11/25/20 04:25	11/10/20	
2,6-Dinitrotoluene	230 U	230	120	5	11/25/20 04:25	11/10/20	
2-Chloronaphthalene	230 U	230	91	5	11/25/20 04:25	11/10/20	
2-Chlorophenol	230 U	230	57	5	11/25/20 04:25	11/10/20	
2-Methylnaphthalene	**52**	47	14	5	11/25/20 04:25	11/10/20	
2-Methylphenol	230 U	230	53	5	11/25/20 04:25	11/10/20	
2-Nitroaniline	230 U	230	120	5	11/25/20 04:25	11/10/20	
2-Nitrophenol	230 U	230	56	5	11/25/20 04:25	11/10/20	
3,3'-Dichlorobenzidine	230 U	230	140	5	11/25/20 04:25	11/10/20	
3- and 4-Methylphenol Coelution	230 U	230	58	5	11/25/20 04:25	11/10/20	
3-Nitroaniline	230 U	230	53	5	11/25/20 04:25	11/10/20	
4,6-Dinitro-2-methylphenol	230 U	230	85	5	11/25/20 04:25	11/10/20	
4-Bromophenyl Phenyl Ether	230 U	230	98	5	11/25/20 04:25	11/10/20	
4-Chloro-3-methylphenol	230 U	230	110	5	11/25/20 04:25	11/10/20	
4-Chloroaniline	230 U	230	68	5	11/25/20 04:25	11/10/20	
4-Chlorophenyl Phenyl Ether	230 U	230	94	5	11/25/20 04:25	11/10/20	
4-Nitroaniline	230 U	230	120	5	11/25/20 04:25	11/10/20	
4-Nitrophenol	230 U	230	180	5	11/25/20 04:25	11/10/20	
Acenaphthene	**51**	47	12	5	11/25/20 04:25	11/10/20	
Acenaphthylene	**320**	47	13	5	11/25/20 04:25	11/10/20	
Acetophenone	230 U	230	78	5	11/25/20 04:25	11/10/20	
Anthracene	**220**	47	29	5	11/25/20 04:25	11/10/20	
Atrazine	230 U	230	62	5	11/25/20 04:25	11/10/20	
Benz(a)anthracene	**380**	47	36	5	11/25/20 04:25	11/10/20	
Benzaldehyde	230 U	230	110	5	11/25/20 04:25	11/10/20	
Benzo(a)pyrene	**840**	47	20	5	11/25/20 04:25	11/10/20	
Benzo(b)fluoranthene	**810**	47	25	5	11/25/20 04:25	11/10/20	
Benzo(g,h,i)perylene	**800**	47	20	5	11/25/20 04:25	11/10/20	
Benzo(k)fluoranthene	**240**	47	27	5	11/25/20 04:25	11/10/20	
Biphenyl	230 U	230	58	5	11/25/20 04:25	11/10/20	
2,2'-Oxybis(1-chloropropane)	230 U	230	100	5	11/25/20 04:25	11/10/20	
Bis(2-chloroethoxy)methane	230 U	230	93	5	11/25/20 04:25	11/10/20	
Bis(2-chloroethyl) Ether	230 U	230	93	5	11/25/20 04:25	11/10/20	
Bis(2-ethylhexyl) Phthalate	4200 U	4200	220	5	11/25/20 04:25	11/10/20	
Butyl Benzyl Phthalate	1200 U	1200	120	5	11/25/20 04:25	11/10/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 09:15
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	EB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-004	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Caprolactam	230	U	230	180	5	11/25/20 04:25	11/10/20	
Carbazole	230	U	230	99	5	11/25/20 04:25	11/10/20	
Chrysene	**450**		47	20	5	11/25/20 04:25	11/10/20	
Di-n-butyl Phthalate	3500	U	3500	120	5	11/25/20 04:25	11/10/20	
Di-n-octyl Phthalate	1200	U	1200	210	5	11/25/20 04:25	11/10/20	
Dibenz(a,h)anthracene	**130**		47	20	5	11/25/20 04:25	11/10/20	
Dibenzofuran	**42**	**J**	47	21	5	11/25/20 04:25	11/10/20	
Diethyl Phthalate	1400	U	1400	130	5	11/25/20 04:25	11/10/20	
Dimethyl Phthalate	1200	U	1200	110	5	11/25/20 04:25	11/10/20	
Fluoranthene	**740**		47	35	5	11/25/20 04:25	11/10/20	
Fluorene	**99**		47	12	5	11/25/20 04:25	11/10/20	
Hexachlorobenzene	47	U	47	17	5	11/25/20 04:25	11/10/20	
Hexachlorobutadiene	230	U	230	92	5	11/25/20 04:25	11/10/20	
Hexachlorocyclopentadiene	230	U	230	170	5	11/25/20 04:25	11/10/20	
Hexachloroethane	230	U	230	82	5	11/25/20 04:25	11/10/20	
Indeno(1,2,3-cd)pyrene	**640**		47	21	5	11/25/20 04:25	11/10/20	
Isophorone	230	U	230	110	5	11/25/20 04:25	11/10/20	
N-Nitrosodi-n-propylamine	230	U	230	85	5	11/25/20 04:25	11/10/20	
N-Nitrosodiphenylamine	230	U	230	74	5	11/25/20 04:25	11/10/20	
Naphthalene	**69**	**B**	47	17	5	11/25/20 04:25	11/10/20	
Nitrobenzene	47	U	47	20	5	11/25/20 04:25	11/10/20	
Pentachlorophenol (PCP)	230	U	230	210	5	11/25/20 04:25	11/10/20	
Phenanthrene	**410**		47	25	5	11/25/20 04:25	11/10/20	
Phenol	230	U	230	63	5	11/25/20 04:25	11/10/20	
Pyrene	**630**		47	23	5	11/25/20 04:25	11/10/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	51	19 - 107	11/25/20 04:25	
2-Fluorobiphenyl	49	10 - 115	11/25/20 04:25	
2-Fluorophenol	38	10 - 97	11/25/20 04:25	
Nitrobenzene-d5	40	10 - 130	11/25/20 04:25	
Phenol-d6	37	17 - 135	11/25/20 04:25	
Terphenyl-d14	47	10 - 130	11/25/20 04:25	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 09:15
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	EB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-004	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	490 U	490	210	10	12/11/20 05:34	11/30/20	*
1,4-Dioxane	980 U	980	500	10	12/11/20 05:34	11/30/20	*
2,3,4,6-Tetrachlorophenol	490 U	490	180	10	12/11/20 05:34	11/30/20	*
2,4,5-Trichlorophenol	490 U	490	120	10	12/11/20 05:34	11/30/20	*
2,4,6-Trichlorophenol	490 U	490	110	10	12/11/20 05:34	11/30/20	*
2,4-Dichlorophenol	490 U	490	120	10	12/11/20 05:34	11/30/20	*
2,4-Dimethylphenol	490 U	490	210	10	12/11/20 05:34	11/30/20	*
2,4-Dinitrophenol	490 U	490	150	10	12/11/20 05:34	11/30/20	*
2,4-Dinitrotoluene	490 U	490	220	10	12/11/20 05:34	11/30/20	*
2,6-Dinitrotoluene	490 U	490	230	10	12/11/20 05:34	11/30/20	*
2-Chloronaphthalene	490 U	490	190	10	12/11/20 05:34	11/30/20	*
2-Chlorophenol	490 U	490	120	10	12/11/20 05:34	11/30/20	*
2-Methylnaphthalene	**110**	97	28	10	12/11/20 05:34	11/30/20	*
2-Methylphenol	490 U	490	120	10	12/11/20 05:34	11/30/20	*
2-Nitroaniline	490 U	490	250	10	12/11/20 05:34	11/30/20	*
2-Nitrophenol	490 U	490	120	10	12/11/20 05:34	11/30/20	*
3,3'-Dichlorobenzidine	490 U	490	280	10	12/11/20 05:34	11/30/20	*
3- and 4-Methylphenol Coelution	490 U	490	130	10	12/11/20 05:34	11/30/20	*
3-Nitroaniline	490 U	490	120	10	12/11/20 05:34	11/30/20	*
4,6-Dinitro-2-methylphenol	490 U	490	180	10	12/11/20 05:34	11/30/20	*
4-Bromophenyl Phenyl Ether	490 U	490	210	10	12/11/20 05:34	11/30/20	*
4-Chloro-3-methylphenol	490 U	490	220	10	12/11/20 05:34	11/30/20	*
4-Chloroaniline	490 U	490	140	10	12/11/20 05:34	11/30/20	*
4-Chlorophenyl Phenyl Ether	490 U	490	200	10	12/11/20 05:34	11/30/20	*
4-Nitroaniline	490 U	490	250	10	12/11/20 05:34	11/30/20	*
4-Nitrophenol	490 U	490	370	10	12/11/20 05:34	11/30/20	*
Acenaphthene	**33 J**	97	25	10	12/11/20 05:34	11/30/20	*
Acenaphthylene	**270**	97	27	10	12/11/20 05:34	11/30/20	*
Acetophenone	490 U	490	170	10	12/11/20 05:34	11/30/20	*
Anthracene	**150**	97	60	10	12/11/20 05:34	11/30/20	*
Atrazine	490 U	490	130	10	12/11/20 05:34	11/30/20	*
Benz(a)anthracene	**340**	97	74	10	12/11/20 05:34	11/30/20	*
Benzaldehyde	490 U	490	220	10	12/11/20 05:34	11/30/20	*
Benzo(a)pyrene	**950**	97	40	10	12/11/20 05:34	11/30/20	*
Benzo(b)fluoranthene	**790**	97	52	10	12/11/20 05:34	11/30/20	*
Benzo(g,h,i)perylene	**1300**	97	42	10	12/11/20 05:34	11/30/20	*
Benzo(k)fluoranthene	**280**	97	56	10	12/11/20 05:34	11/30/20	*
Biphenyl	490 U	490	130	10	12/11/20 05:34	11/30/20	*
2,2'-Oxybis(1-chloropropane)	490 U	490	210	10	12/11/20 05:34	11/30/20	*
Bis(2-chloroethoxy)methane	490 U	490	200	10	12/11/20 05:34	11/30/20	*
Bis(2-chloroethyl) Ether	490 U	490	200	10	12/11/20 05:34	11/30/20	*
Bis(2-ethylhexyl) Phthalate	8800 U	8800	450	10	12/11/20 05:34	11/30/20	*
Butyl Benzyl Phthalate	2500 U	2500	250	10	12/11/20 05:34	11/30/20	*

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 09:15
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	EB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-004	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Caprolactam	490	U	490	370	10	12/11/20 05:34	11/30/20	*
Carbazole	490	U	490	210	10	12/11/20 05:34	11/30/20	*
Chrysene	**470**		97	40	10	12/11/20 05:34	11/30/20	*
Di-n-butyl Phthalate	7300	U	7300	240	10	12/11/20 05:34	11/30/20	*
Di-n-octyl Phthalate	2500	U	2500	430	10	12/11/20 05:34	11/30/20	*
Dibenz(a,h)anthracene	**200**		97	40	10	12/11/20 05:34	11/30/20	*
Dibenzofuran	97	U	97	43	10	12/11/20 05:34	11/30/20	*
Diethyl Phthalate	2900	U	2900	270	10	12/11/20 05:34	11/30/20	*
Dimethyl Phthalate	2500	U	2500	220	10	12/11/20 05:34	11/30/20	*
Fluoranthene	**590**		97	73	10	12/11/20 05:34	11/30/20	*
Fluorene	**58**	**J**	97	25	10	12/11/20 05:34	11/30/20	*
Hexachlorobenzene	97	U	97	35	10	12/11/20 05:34	11/30/20	*
Hexachlorobutadiene	490	U	490	200	10	12/11/20 05:34	11/30/20	*
Hexachlorocyclopentadiene	490	U	490	340	10	12/11/20 05:34	11/30/20	*
Hexachloroethane	490	U	490	170	10	12/11/20 05:34	11/30/20	*
Indeno(1,2,3-cd)pyrene	**970**		97	43	10	12/11/20 05:34	11/30/20	*
Isophorone	490	U	490	220	10	12/11/20 05:34	11/30/20	*
N-Nitrosodi-n-propylamine	490	U	490	180	10	12/11/20 05:34	11/30/20	*
N-Nitrosodiphenylamine	490	U	490	160	10	12/11/20 05:34	11/30/20	*
Naphthalene	**110**		97	34	10	12/11/20 05:34	11/30/20	*
Nitrobenzene	97	U	97	40	10	12/11/20 05:34	11/30/20	*
Pentachlorophenol (PCP)	490	U	490	430	10	12/11/20 05:34	11/30/20	*
Phenanthrene	**290**		97	52	10	12/11/20 05:34	11/30/20	*
Phenol	490	U	490	130	10	12/11/20 05:34	11/30/20	*
Pyrene	**610**		97	48	10	12/11/20 05:34	11/30/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	38	19 - 107	12/11/20 05:34	
2-Fluorobiphenyl	71	10 - 115	12/11/20 05:34	
2-Fluorophenol	36	10 - 97	12/11/20 05:34	
Nitrobenzene-d5	73	10 - 130	12/11/20 05:34	
Phenol-d6	44	17 - 135	12/11/20 05:34	
Terphenyl-d14	76	10 - 130	12/11/20 05:34	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 11:45
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WAB1-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-005	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	37 U	37	16	1	11/25/20 04:54	11/10/20	
1,4-Dioxane	74 U	74	38	1	11/25/20 04:54	11/10/20	
2,3,4,6-Tetrachlorophenol	37 U	37	13	1	11/25/20 04:54	11/10/20	
2,4,5-Trichlorophenol	37 U	37	8.5	1	11/25/20 04:54	11/10/20	
2,4,6-Trichlorophenol	37 U	37	8.3	1	11/25/20 04:54	11/10/20	
2,4-Dichlorophenol	37 U	37	8.7	1	11/25/20 04:54	11/10/20	
2,4-Dimethylphenol	37 U	37	16	1	11/25/20 04:54	11/10/20	
2,4-Dinitrophenol	37 U	37	11	1	11/25/20 04:54	11/10/20	
2,4-Dinitrotoluene	37 U	37	17	1	11/25/20 04:54	11/10/20	
2,6-Dinitrotoluene	37 U	37	18	1	11/25/20 04:54	11/10/20	
2-Chloronaphthalene	37 U	37	15	1	11/25/20 04:54	11/10/20	
2-Chlorophenol	37 U	37	8.9	1	11/25/20 04:54	11/10/20	
2-Methylnaphthalene	**51**	7.3	2.2	1	11/25/20 04:54	11/10/20	
2-Methylphenol	37 U	37	8.4	1	11/25/20 04:54	11/10/20	
2-Nitroaniline	37 U	37	19	1	11/25/20 04:54	11/10/20	
2-Nitrophenol	37 U	37	8.7	1	11/25/20 04:54	11/10/20	
3,3'-Dichlorobenzidine	37 U	37	21	1	11/25/20 04:54	11/10/20	
3- and 4-Methylphenol Coelution	37 U	37	9.1	1	11/25/20 04:54	11/10/20	
3-Nitroaniline	37 U	37	8.4	1	11/25/20 04:54	11/10/20	
4,6-Dinitro-2-methylphenol	37 U	37	14	1	11/25/20 04:54	11/10/20	
4-Bromophenyl Phenyl Ether	37 U	37	16	1	11/25/20 04:54	11/10/20	
4-Chloro-3-methylphenol	37 U	37	17	1	11/25/20 04:54	11/10/20	
4-Chloroaniline	37 U	37	11	1	11/25/20 04:54	11/10/20	
4-Chlorophenyl Phenyl Ether	37 U	37	15	1	11/25/20 04:54	11/10/20	
4-Nitroaniline	37 U	37	19	1	11/25/20 04:54	11/10/20	
4-Nitrophenol	37 U	37	28	1	11/25/20 04:54	11/10/20	
Acenaphthene	**6.9 J**	7.3	1.9	1	11/25/20 04:54	11/10/20	
Acenaphthylene	**61**	7.3	2.0	1	11/25/20 04:54	11/10/20	
Acetophenone	37 U	37	13	1	11/25/20 04:54	11/10/20	
Anthracene	**61**	7.3	4.5	1	11/25/20 04:54	11/10/20	
Atrazine	37 U	37	9.7	1	11/25/20 04:54	11/10/20	
Benz(a)anthracene	**170**	7.3	5.6	1	11/25/20 04:54	11/10/20	
Benzaldehyde	37 U	37	17	1	11/25/20 04:54	11/10/20	
Benzo(a)pyrene	**250**	7.3	3.0	1	11/25/20 04:54	11/10/20	
Benzo(b)fluoranthene	**310**	7.3	3.9	1	11/25/20 04:54	11/10/20	
Benzo(g,h,i)perylene	**150**	7.3	3.2	1	11/25/20 04:54	11/10/20	
Benzo(k)fluoranthene	**99**	7.3	4.2	1	11/25/20 04:54	11/10/20	
Biphenyl	37 U	37	9.1	1	11/25/20 04:54	11/10/20	
2,2'-Oxybis(1-chloropropane)	37 U	37	16	1	11/25/20 04:54	11/10/20	
Bis(2-chloroethoxy)methane	37 U	37	15	1	11/25/20 04:54	11/10/20	
Bis(2-chloroethyl) Ether	37 U	37	15	1	11/25/20 04:54	11/10/20	
Bis(2-ethylhexyl) Phthalate	670 U	670	34	1	11/25/20 04:54	11/10/20	
Butyl Benzyl Phthalate	190 U	190	19	1	11/25/20 04:54	11/10/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 11:45
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WAB1-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-005	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Caprolactam	37 U	37	28	1	11/25/20 04:54	11/10/20	
Carbazole	37 U	37	16	1	11/25/20 04:54	11/10/20	
Chrysene	**200**	7.3	3.0	1	11/25/20 04:54	11/10/20	
Di-n-butyl Phthalate	550 U	550	18	1	11/25/20 04:54	11/10/20	
Di-n-octyl Phthalate	190 U	190	33	1	11/25/20 04:54	11/10/20	
Dibenz(a,h)anthracene	**39**	7.3	3.0	1	11/25/20 04:54	11/10/20	
Dibenzofuran	**19**	7.3	3.3	1	11/25/20 04:54	11/10/20	
Diethyl Phthalate	220 U	220	20	1	11/25/20 04:54	11/10/20	
Dimethyl Phthalate	190 U	190	17	1	11/25/20 04:54	11/10/20	
Fluoranthene	**300**	7.3	5.5	1	11/25/20 04:54	11/10/20	
Fluorene	**12**	7.3	1.9	1	11/25/20 04:54	11/10/20	
Hexachlorobenzene	7.3 U	7.3	2.7	1	11/25/20 04:54	11/10/20	
Hexachlorobutadiene	37 U	37	15	1	11/25/20 04:54	11/10/20	
Hexachlorocyclopentadiene	37 U	37	26	1	11/25/20 04:54	11/10/20	
Hexachloroethane	37 U	37	13	1	11/25/20 04:54	11/10/20	
Indeno(1,2,3-cd)pyrene	**150**	7.3	3.3	1	11/25/20 04:54	11/10/20	
Isophorone	37 U	37	16	1	11/25/20 04:54	11/10/20	
N-Nitrosodi-n-propylamine	37 U	37	14	1	11/25/20 04:54	11/10/20	
N-Nitrosodiphenylamine	37 U	37	12	1	11/25/20 04:54	11/10/20	
Naphthalene	**39 B**	7.3	2.6	1	11/25/20 04:54	11/10/20	
Nitrobenzene	7.3 U	7.3	3.0	1	11/25/20 04:54	11/10/20	
Pentachlorophenol (PCP)	37 U	37	32	1	11/25/20 04:54	11/10/20	
Phenanthrene	**130**	7.3	3.9	1	11/25/20 04:54	11/10/20	
Phenol	37 U	37	9.8	1	11/25/20 04:54	11/10/20	
Pyrene	**240**	7.3	3.6	1	11/25/20 04:54	11/10/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	60	19 - 107	11/25/20 04:54	
2-Fluorobiphenyl	59	10 - 115	11/25/20 04:54	
2-Fluorophenol	54	10 - 97	11/25/20 04:54	
Nitrobenzene-d5	63	10 - 130	11/25/20 04:54	
Phenol-d6	55	17 - 135	11/25/20 04:54	
Terphenyl-d14	53	10 - 130	11/25/20 04:54	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 11:45
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WAB1-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-005	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	190 U	190	78	5	12/17/20 21:24	11/30/20	*
1,4-Dioxane	380 U	380	200	5	12/17/20 21:24	11/30/20	*
2,3,4,6-Tetrachlorophenol	190 U	190	67	5	12/17/20 21:24	11/30/20	*
2,4,5-Trichlorophenol	190 U	190	44	5	12/17/20 21:24	11/30/20	*
2,4,6-Trichlorophenol	190 U	190	42	5	12/17/20 21:24	11/30/20	*
2,4-Dichlorophenol	190 U	190	45	5	12/17/20 21:24	11/30/20	*
2,4-Dimethylphenol	190 U	190	78	5	12/17/20 21:24	11/30/20	*
2,4-Dinitrophenol	190 U	190	55	5	12/17/20 21:24	11/30/20	*
2,4-Dinitrotoluene	190 U	190	85	5	12/17/20 21:24	11/30/20	*
2,6-Dinitrotoluene	190 U	190	89	5	12/17/20 21:24	11/30/20	*
2-Chloronaphthalene	190 U	190	73	5	12/17/20 21:24	11/30/20	*
2-Chlorophenol	190 U	190	46	5	12/17/20 21:24	11/30/20	*
2-Methylnaphthalene	**100**	37	11	5	12/17/20 21:24	11/30/20	*
2-Methylphenol	190 U	190	43	5	12/17/20 21:24	11/30/20	*
2-Nitroaniline	190 U	190	95	5	12/17/20 21:24	11/30/20	*
2-Nitrophenol	190 U	190	45	5	12/17/20 21:24	11/30/20	*
3,3'-Dichlorobenzidine	190 U	190	110	5	12/17/20 21:24	11/30/20	*
3- and 4-Methylphenol Coelution	190 U	190	47	5	12/17/20 21:24	11/30/20	*
3-Nitroaniline	190 U	190	43	5	12/17/20 21:24	11/30/20	*
4,6-Dinitro-2-methylphenol	190 U	190	68	5	12/17/20 21:24	11/30/20	*
4-Bromophenyl Phenyl Ether	190 U	190	79	5	12/17/20 21:24	11/30/20	*
4-Chloro-3-methylphenol	190 U	190	83	5	12/17/20 21:24	11/30/20	*
4-Chloroaniline	190 U	190	54	5	12/17/20 21:24	11/30/20	*
4-Chlorophenyl Phenyl Ether	190 U	190	75	5	12/17/20 21:24	11/30/20	*
4-Nitroaniline	190 U	190	96	5	12/17/20 21:24	11/30/20	*
4-Nitrophenol	190 U	190	150	5	12/17/20 21:24	11/30/20	*
Acenaphthene	**67**	37	9.4	5	12/17/20 21:24	11/30/20	*
Acenaphthylene	**110**	37	11	5	12/17/20 21:24	11/30/20	*
Acetophenone	190 U	190	63	5	12/17/20 21:24	11/30/20	*
Anthracene	**410**	37	23	5	12/17/20 21:24	11/30/20	*
Atrazine	190 U	190	50	5	12/17/20 21:24	11/30/20	*
Benz(a)anthracene	**1300**	38	29	5	12/17/20 21:24	11/30/20	*
Benzaldehyde	190 U	190	83	5	12/17/20 21:24	11/30/20	*
Benzo(a)pyrene	**1400**	37	16	5	12/17/20 21:24	11/30/20	*
Benzo(b)fluoranthene	**1500**	37	20	5	12/17/20 21:24	11/30/20	*
Benzo(g,h,i)perylene	**1100**	37	16	5	12/17/20 21:24	11/30/20	*
Benzo(k)fluoranthene	**550**	37	22	5	12/17/20 21:24	11/30/20	*
Biphenyl	190 U	190	47	5	12/17/20 21:24	11/30/20	*
2,2'-Oxybis(1-chloropropane)	190 U	190	80	5	12/17/20 21:24	11/30/20	*
Bis(2-chloroethoxy)methane	190 U	190	75	5	12/17/20 21:24	11/30/20	*
Bis(2-chloroethyl) Ether	190 U	190	75	5	12/17/20 21:24	11/30/20	*
Bis(2-ethylhexyl) Phthalate	3400 U	3400	170	5	12/17/20 21:24	11/30/20	*
Butyl Benzyl Phthalate	960 U	960	94	5	12/17/20 21:24	11/30/20	*

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 11:45
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WAB1-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-005	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Caprolactam	190 U	190	150	5	12/17/20 21:24	11/30/20	*
Carbazole	**160 J**	190	79	5	12/17/20 21:24	11/30/20	*
Chrysene	**1200**	37	16	5	12/17/20 21:24	11/30/20	*
Di-n-butyl Phthalate	2800 U	2800	91	5	12/17/20 21:24	11/30/20	*
Di-n-octyl Phthalate	960 U	960	170	5	12/17/20 21:24	11/30/20	*
Dibenz(a,h)anthracene	**240**	37	16	5	12/17/20 21:24	11/30/20	*
Dibenzofuran	**74**	37	17	5	12/17/20 21:24	11/30/20	*
Diethyl Phthalate	1100 U	1100	110	5	12/17/20 21:24	11/30/20	*
Dimethyl Phthalate	960 U	960	82	5	12/17/20 21:24	11/30/20	*
Fluoranthene	**2500**	37	28	5	12/17/20 21:24	11/30/20	*
Fluorene	**110**	37	9.7	5	12/17/20 21:24	11/30/20	*
Hexachlorobenzene	37 U	37	14	5	12/17/20 21:24	11/30/20	*
Hexachlorobutadiene	190 U	190	74	5	12/17/20 21:24	11/30/20	*
Hexachlorocyclopentadiene	190 U	190	140	5	12/17/20 21:24	11/30/20	*
Hexachloroethane	190 U	190	66	5	12/17/20 21:24	11/30/20	*
Indeno(1,2,3-cd)pyrene	**1000**	37	17	5	12/17/20 21:24	11/30/20	*
Isophorone	190 U	190	82	5	12/17/20 21:24	11/30/20	*
N-Nitrosodi-n-propylamine	190 U	190	68	5	12/17/20 21:24	11/30/20	*
N-Nitrosodiphenylamine	190 U	190	59	5	12/17/20 21:24	11/30/20	*
Naphthalene	**90**	37	14	5	12/17/20 21:24	11/30/20	*
Nitrobenzene	37 U	37	16	5	12/17/20 21:24	11/30/20	*
Pentachlorophenol (PCP)	190 U	190	170	5	12/17/20 21:24	11/30/20	*
Phenanthrene	**1600**	37	20	5	12/17/20 21:24	11/30/20	*
Phenol	190 U	190	50	5	12/17/20 21:24	11/30/20	*
Pyrene	**2200**	37	19	5	12/17/20 21:24	11/30/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	117 *	19 - 107	12/17/20 21:24	*
2-Fluorobiphenyl	106	10 - 115	12/17/20 21:24	
2-Fluorophenol	83	10 - 97	12/17/20 21:24	
Nitrobenzene-d5	123	10 - 130	12/17/20 21:24	
Phenol-d6	86	17 - 135	12/17/20 21:24	
Terphenyl-d14	123	10 - 130	12/17/20 21:24	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 12:25
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WCB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-006	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	38 U	38	16	1	11/25/20 05:22	11/10/20	
1,4-Dioxane	78 U	78	40	1	11/25/20 05:22	11/10/20	
2,3,4,6-Tetrachlorophenol	38 U	38	14	1	11/25/20 05:22	11/10/20	
2,4,5-Trichlorophenol	38 U	38	8.8	1	11/25/20 05:22	11/10/20	
2,4,6-Trichlorophenol	38 U	38	8.6	1	11/25/20 05:22	11/10/20	
2,4-Dichlorophenol	38 U	38	9.1	1	11/25/20 05:22	11/10/20	
2,4-Dimethylphenol	38 U	38	16	1	11/25/20 05:22	11/10/20	
2,4-Dinitrophenol	38 U	38	12	1	11/25/20 05:22	11/10/20	
2,4-Dinitrotoluene	38 U	38	18	1	11/25/20 05:22	11/10/20	
2,6-Dinitrotoluene	38 U	38	19	1	11/25/20 05:22	11/10/20	
2-Chloronaphthalene	38 U	38	15	1	11/25/20 05:22	11/10/20	
2-Chlorophenol	38 U	38	9.3	1	11/25/20 05:22	11/10/20	
2-Methylnaphthalene	**570**	7.6	2.2	1	11/25/20 05:22	11/10/20	
2-Methylphenol	38 U	38	8.7	1	11/25/20 05:22	11/10/20	
2-Nitroaniline	38 U	38	20	1	11/25/20 05:22	11/10/20	
2-Nitrophenol	38 U	38	9.1	1	11/25/20 05:22	11/10/20	
3,3'-Dichlorobenzidine	38 U	38	22	1	11/25/20 05:22	11/10/20	
3- and 4-Methylphenol Coelution	**11 J**	38	9.5	1	11/25/20 05:22	11/10/20	
3-Nitroaniline	38 U	38	8.7	1	11/25/20 05:22	11/10/20	
4,6-Dinitro-2-methylphenol	38 U	38	14	1	11/25/20 05:22	11/10/20	
4-Bromophenyl Phenyl Ether	38 U	38	16	1	11/25/20 05:22	11/10/20	
4-Chloro-3-methylphenol	38 U	38	17	1	11/25/20 05:22	11/10/20	
4-Chloroaniline	38 U	38	11	1	11/25/20 05:22	11/10/20	
4-Chlorophenyl Phenyl Ether	38 U	38	16	1	11/25/20 05:22	11/10/20	
4-Nitroaniline	38 U	38	20	1	11/25/20 05:22	11/10/20	
4-Nitrophenol	38 U	38	29	1	11/25/20 05:22	11/10/20	
Acenaphthene	**78**	7.6	2.0	1	11/25/20 05:22	11/10/20	
Acenaphthylene	**270**	7.6	2.1	1	11/25/20 05:22	11/10/20	
Acetophenone	**57**	38	13	1	11/25/20 05:22	11/10/20	
Anthracene	**510**	7.6	4.7	1	11/25/20 05:22	11/10/20	
Atrazine	38 U	38	11	1	11/25/20 05:22	11/10/20	
Benz(a)anthracene	**1200 E**	7.6	5.8	1	11/25/20 05:22	11/10/20	
Benzaldehyde	38 U	38	17	1	11/25/20 05:22	11/10/20	
Benzo(a)pyrene	**1400 E**	7.6	3.2	1	11/25/20 05:22	11/10/20	
Benzo(b)fluoranthene	**1800 E**	7.6	4.1	1	11/25/20 05:22	11/10/20	
Benzo(g,h,i)perylene	**780 E**	7.6	3.3	1	11/25/20 05:22	11/10/20	
Benzo(k)fluoranthene	**600**	7.6	4.4	1	11/25/20 05:22	11/10/20	
Biphenyl	**71**	38	9.5	1	11/25/20 05:22	11/10/20	
2,2'-Oxybis(1-chloropropane)	38 U	38	17	1	11/25/20 05:22	11/10/20	
Bis(2-chloroethoxy)methane	38 U	38	16	1	11/25/20 05:22	11/10/20	
Bis(2-chloroethyl) Ether	38 U	38	16	1	11/25/20 05:22	11/10/20	
Bis(2-ethylhexyl) Phthalate	690 U	690	35	1	11/25/20 05:22	11/10/20	
Butyl Benzyl Phthalate	200 U	200	20	1	11/25/20 05:22	11/10/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 12:25
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WCB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-006	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Caprolactam	38	U	38	29	1	11/25/20 05:22	11/10/20	
Carbazole	**170**		38	17	1	11/25/20 05:22	11/10/20	
Chrysene	**1200**	**E**	7.6	3.2	1	11/25/20 05:22	11/10/20	
Di-n-butyl Phthalate	580	U	580	19	1	11/25/20 05:22	11/10/20	
Di-n-octyl Phthalate	200	U	200	34	1	11/25/20 05:22	11/10/20	
Dibenz(a,h)anthracene	**200**		7.6	3.2	1	11/25/20 05:22	11/10/20	
Dibenzofuran	**250**		7.6	3.4	1	11/25/20 05:22	11/10/20	
Diethyl Phthalate	230	U	230	21	1	11/25/20 05:22	11/10/20	
Dimethyl Phthalate	200	U	200	17	1	11/25/20 05:22	11/10/20	
Fluoranthene	**2300**	**E**	7.6	5.7	1	11/25/20 05:22	11/10/20	
Fluorene	**150**		7.6	2.0	1	11/25/20 05:22	11/10/20	
Hexachlorobenzene	7.6	U	7.6	2.8	1	11/25/20 05:22	11/10/20	
Hexachlorobutadiene	38	U	38	16	1	11/25/20 05:22	11/10/20	
Hexachlorocyclopentadiene	38	U	38	27	1	11/25/20 05:22	11/10/20	
Hexachloroethane	38	U	38	14	1	11/25/20 05:22	11/10/20	
Indeno(1,2,3-cd)pyrene	**870**	**E**	7.6	3.4	1	11/25/20 05:22	11/10/20	
Isophorone	38	U	38	17	1	11/25/20 05:22	11/10/20	
N-Nitrosodi-n-propylamine	38	U	38	14	1	11/25/20 05:22	11/10/20	
N-Nitrosodiphenylamine	38	U	38	13	1	11/25/20 05:22	11/10/20	
Naphthalene	**420**		7.6	2.7	1	11/25/20 05:22	11/10/20	
Nitrobenzene	7.6	U	7.6	3.2	1	11/25/20 05:22	11/10/20	
Pentachlorophenol (PCP)	38	U	38	34	1	11/25/20 05:22	11/10/20	
Phenanthrene	**1700**	**E**	7.6	4.1	1	11/25/20 05:22	11/10/20	
Phenol	38	U	38	11	1	11/25/20 05:22	11/10/20	
Pyrene	**1900**	**E**	7.6	3.8	1	11/25/20 05:22	11/10/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	51	19 - 107	11/25/20 05:22	
2-Fluorobiphenyl	49	10 - 115	11/25/20 05:22	
2-Fluorophenol	44	10 - 97	11/25/20 05:22	
Nitrobenzene-d5	69	10 - 130	11/25/20 05:22	
Phenol-d6	49	17 - 135	11/25/20 05:22	
Terphenyl-d14	49	10 - 130	11/25/20 05:22	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 12:25
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WCB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-006	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	380 U	380	160	10	12/01/20 20:40	11/10/20	
1,4-Dioxane	780 U	780	400	10	12/01/20 20:40	11/10/20	
2,3,4,6-Tetrachlorophenol	380 U	380	140	10	12/01/20 20:40	11/10/20	
2,4,5-Trichlorophenol	380 U	380	88	10	12/01/20 20:40	11/10/20	
2,4,6-Trichlorophenol	380 U	380	86	10	12/01/20 20:40	11/10/20	
2,4-Dichlorophenol	380 U	380	91	10	12/01/20 20:40	11/10/20	
2,4-Dimethylphenol	380 U	380	160	10	12/01/20 20:40	11/10/20	
2,4-Dinitrophenol	380 U	380	120	10	12/01/20 20:40	11/10/20	
2,4-Dinitrotoluene	380 U	380	180	10	12/01/20 20:40	11/10/20	
2,6-Dinitrotoluene	380 U	380	190	10	12/01/20 20:40	11/10/20	
2-Chloronaphthalene	380 U	380	150	10	12/01/20 20:40	11/10/20	
2-Chlorophenol	380 U	380	93	10	12/01/20 20:40	11/10/20	
2-Methylnaphthalene	**670 D**	76	22	10	12/01/20 20:40	11/10/20	
2-Methylphenol	380 U	380	87	10	12/01/20 20:40	11/10/20	
2-Nitroaniline	380 U	380	200	10	12/01/20 20:40	11/10/20	
2-Nitrophenol	380 U	380	91	10	12/01/20 20:40	11/10/20	
3,3'-Dichlorobenzidine	380 U	380	220	10	12/01/20 20:40	11/10/20	
3- and 4-Methylphenol Coelution	380 U	380	95	10	12/01/20 20:40	11/10/20	
3-Nitroaniline	380 U	380	87	10	12/01/20 20:40	11/10/20	
4,6-Dinitro-2-methylphenol	380 U	380	140	10	12/01/20 20:40	11/10/20	
4-Bromophenyl Phenyl Ether	380 U	380	160	10	12/01/20 20:40	11/10/20	
4-Chloro-3-methylphenol	380 U	380	170	10	12/01/20 20:40	11/10/20	
4-Chloroaniline	380 U	380	110	10	12/01/20 20:40	11/10/20	
4-Chlorophenyl Phenyl Ether	380 U	380	160	10	12/01/20 20:40	11/10/20	
4-Nitroaniline	380 U	380	200	10	12/01/20 20:40	11/10/20	
4-Nitrophenol	380 U	380	290	10	12/01/20 20:40	11/10/20	
Acenaphthene	**120 D**	76	20	10	12/01/20 20:40	11/10/20	
Acenaphthylene	**490 D**	76	21	10	12/01/20 20:40	11/10/20	
Acetophenone	380 U	380	130	10	12/01/20 20:40	11/10/20	
Anthracene	**590 D**	76	47	10	12/01/20 20:40	11/10/20	
Atrazine	380 U	380	110	10	12/01/20 20:40	11/10/20	
Benz(a)anthracene	**1300 D**	76	58	10	12/01/20 20:40	11/10/20	
Benzaldehyde	380 U	380	170	10	12/01/20 20:40	11/10/20	
Benzo(a)pyrene	**1600 D**	76	32	10	12/01/20 20:40	11/10/20	
Benzo(b)fluoranthene	**1900 D**	76	41	10	12/01/20 20:40	11/10/20	
Benzo(g,h,i)perylene	**860 D**	76	33	10	12/01/20 20:40	11/10/20	
Benzo(k)fluoranthene	**660 D**	76	44	10	12/01/20 20:40	11/10/20	
Biphenyl	380 U	380	95	10	12/01/20 20:40	11/10/20	
2,2'-Oxybis(1-chloropropane)	380 U	380	170	10	12/01/20 20:40	11/10/20	
Bis(2-chloroethoxy)methane	380 U	380	160	10	12/01/20 20:40	11/10/20	
Bis(2-chloroethyl) Ether	380 U	380	160	10	12/01/20 20:40	11/10/20	
Bis(2-ethylhexyl) Phthalate	6900 U	6900	350	10	12/01/20 20:40	11/10/20	
Butyl Benzyl Phthalate	2000 U	2000	200	10	12/01/20 20:40	11/10/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 12:25
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WCB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-006	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Caprolactam	380 U	380	290	10	12/01/20 20:40	11/10/20	
Carbazole	**210 D**	380	170	10	12/01/20 20:40	11/10/20	
Chrysene	**1400 D**	76	32	10	12/01/20 20:40	11/10/20	
Di-n-butyl Phthalate	5800 U	5800	190	10	12/01/20 20:40	11/10/20	
Di-n-octyl Phthalate	2000 U	2000	340	10	12/01/20 20:40	11/10/20	
Dibenz(a,h)anthracene	**240 D**	76	32	10	12/01/20 20:40	11/10/20	
Dibenzofuran	**290 D**	76	34	10	12/01/20 20:40	11/10/20	
Diethyl Phthalate	2300 U	2300	210	10	12/01/20 20:40	11/10/20	
Dimethyl Phthalate	2000 U	2000	170	10	12/01/20 20:40	11/10/20	
Fluoranthene	**2900 D**	76	57	10	12/01/20 20:40	11/10/20	
Fluorene	**180 D**	76	20	10	12/01/20 20:40	11/10/20	
Hexachlorobenzene	76 U	76	28	10	12/01/20 20:40	11/10/20	
Hexachlorobutadiene	380 U	380	160	10	12/01/20 20:40	11/10/20	
Hexachlorocyclopentadiene	380 U	380	270	10	12/01/20 20:40	11/10/20	
Hexachloroethane	380 U	380	140	10	12/01/20 20:40	11/10/20	
Indeno(1,2,3-cd)pyrene	**890 D**	76	34	10	12/01/20 20:40	11/10/20	
Isophorone	380 U	380	170	10	12/01/20 20:40	11/10/20	
N-Nitrosodi-n-propylamine	380 U	380	140	10	12/01/20 20:40	11/10/20	
N-Nitrosodiphenylamine	380 U	380	130	10	12/01/20 20:40	11/10/20	
Naphthalene	**470 D**	76	27	10	12/01/20 20:40	11/10/20	
Nitrobenzene	76 U	76	32	10	12/01/20 20:40	11/10/20	
Pentachlorophenol (PCP)	380 U	380	340	10	12/01/20 20:40	11/10/20	
Phenanthrene	**2000 D**	76	41	10	12/01/20 20:40	11/10/20	
Phenol	380 U	380	110	10	12/01/20 20:40	11/10/20	
Pyrene	**2300 D**	76	38	10	12/01/20 20:40	11/10/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	78	19 - 107	12/01/20 20:40	
2-Fluorobiphenyl	75	10 - 115	12/01/20 20:40	
2-Fluorophenol	63	10 - 97	12/01/20 20:40	
Nitrobenzene-d5	64	10 - 130	12/01/20 20:40	
Phenol-d6	58	17 - 135	12/01/20 20:40	
Terphenyl-d14	71	10 - 130	12/01/20 20:40	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Semivolatile Organic Compounds by GC

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:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/03/20 09:45
Sample Matrix:	Soil	**Date Received:**	11/03/20 17:00
Sample Name:	WGB-8-2-4-11032020	**Units:**	ug/Kg
Lab Code:	R2010361-001	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	19 U	19	9.3	10	11/16/20 18:01	11/9/20	
4,4'-DDE	19 U	19	9.3	10	11/16/20 18:01	11/9/20	
4,4'-DDT	19 U	19	9.3	10	11/16/20 18:01	11/9/20	
Aldrin	19 U	19	9.3	10	11/16/20 18:01	11/9/20	
Dieldrin	19 U	19	9.3	10	11/16/20 18:01	11/9/20	
Endosulfan I	19 U	19	9.3	10	11/16/20 18:01	11/9/20	
Endosulfan II	19 U	19	9.3	10	11/16/20 18:01	11/9/20	
Endosulfan Sulfate	19 U	19	9.3	10	11/16/20 18:01	11/9/20	
Endrin	19 U	19	9.3	10	11/16/20 18:01	11/9/20	
Endrin Aldehyde	19 U	19	9.3	10	11/16/20 18:01	11/9/20	
Endrin Ketone	19 U	19	9.3	10	11/16/20 18:01	11/9/20	
Heptachlor	19 U	19	9.3	10	11/16/20 18:01	11/9/20	
Heptachlor Epoxide	19 U	19	9.3	10	11/16/20 18:01	11/9/20	
Methoxychlor	19 U	19	9.3	10	11/16/20 18:01	11/9/20	
Toxaphene	360 U	360	210	10	11/16/20 18:01	11/9/20	
alpha-BHC	19 U	19	9.3	10	11/16/20 18:01	11/9/20	
alpha-Chlordane	19 U	19	9.3	10	11/16/20 18:01	11/9/20	
beta-BHC	19 U	19	9.3	10	11/16/20 18:01	11/9/20	
delta-BHC	19 U	19	9.3	10	11/16/20 18:01	11/9/20	
gamma-BHC (Lindane)	19 U	19	9.3	10	11/16/20 18:01	11/9/20	
gamma-Chlordane	19 U	19	9.3	10	11/16/20 18:01	11/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	69	10 - 145	11/16/20 18:01	
Tetrachloro-m-xylene	65	10 - 123	11/16/20 18:01	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Native-10-12-11042020	**Units:**	ug/Kg
Lab Code:	R2010361-002	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	
4,4'-DDE	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	
4,4'-DDT	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	
Aldrin	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	
Dieldrin	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	
Endosulfan I	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	
Endosulfan II	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	
Endosulfan Sulfate	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	
Endrin	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	
Endrin Aldehyde	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	
Endrin Ketone	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	
Heptachlor	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	
Heptachlor Epoxide	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	
Methoxychlor	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	
Toxaphene	43 U	43	25	1	11/13/20 18:43	11/9/20	
alpha-BHC	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	
alpha-Chlordane	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	
beta-BHC	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	
delta-BHC	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	
gamma-BHC (Lindane)	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	
gamma-Chlordane	2.2 U	2.2	1.1	1	11/13/20 18:43	11/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	40	10 - 145	11/13/20 18:43	
Tetrachloro-m-xylene	49	10 - 123	11/13/20 18:43	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Fill-0.5-2-11042020	**Units:**	ug/Kg
Lab Code:	R2010361-003	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	
4,4'-DDE	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	
4,4'-DDT	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	
Aldrin	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	
Dieldrin	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	
Endosulfan I	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	
Endosulfan II	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	
Endosulfan Sulfate	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	
Endrin	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	
Endrin Aldehyde	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	
Endrin Ketone	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	
Heptachlor	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	
Heptachlor Epoxide	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	
Methoxychlor	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	
Toxaphene	40 U	40	23	1	11/13/20 19:02	11/9/20	
alpha-BHC	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	
alpha-Chlordane	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	
beta-BHC	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	
delta-BHC	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	
gamma-BHC (Lindane)	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	
gamma-Chlordane	2.0 U	2.0	1.1	1	11/13/20 19:02	11/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	15	10 - 145	11/13/20 19:02	
Tetrachloro-m-xylene	27	10 - 123	11/13/20 19:02	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 09:15
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	EB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-004	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	12 U	12	6.1	5	11/18/20 11:53	11/11/20	
4,4'-DDE	12 U	12	6.1	5	11/18/20 11:53	11/11/20	
4,4'-DDT	**8.6 J**	12	6.1	5	11/18/20 11:53	11/11/20	
Aldrin	12 U	12	6.1	5	11/18/20 11:53	11/11/20	
Dieldrin	12 U	12	6.1	5	11/18/20 11:53	11/11/20	
Endosulfan I	12 U	12	6.1	5	11/18/20 11:53	11/11/20	
Endosulfan II	12 U	12	6.1	5	11/18/20 11:53	11/11/20	
Endosulfan Sulfate	12 U	12	6.1	5	11/18/20 11:53	11/11/20	
Endrin	12 U	12	6.1	5	11/18/20 11:53	11/11/20	
Endrin Aldehyde	12 U	12	6.1	5	11/18/20 11:53	11/11/20	
Endrin Ketone	12 U	12	6.1	5	11/18/20 11:53	11/11/20	
Heptachlor	12 U	12	6.1	5	11/18/20 11:53	11/11/20	
Heptachlor Epoxide	12 U	12	6.1	5	11/18/20 11:53	11/11/20	
Methoxychlor	12 U	12	6.1	5	11/18/20 11:53	11/11/20	
Toxaphene	240 U	240	140	5	11/18/20 11:53	11/11/20	
alpha-BHC	12 U	12	6.1	5	11/18/20 11:53	11/11/20	
alpha-Chlordane	12 U	12	6.1	5	11/18/20 11:53	11/11/20	
beta-BHC	12 U	12	6.1	5	11/18/20 11:53	11/11/20	
delta-BHC	12 U	12	6.1	5	11/18/20 11:53	11/11/20	
gamma-BHC (Lindane)	12 U	12	6.1	5	11/18/20 11:53	11/11/20	
gamma-Chlordane	12 U	12	6.1	5	11/18/20 11:53	11/11/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	38	10 - 145	11/18/20 11:53	
Tetrachloro-m-xylene	40	10 - 123	11/18/20 11:53	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 11:45
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WAB1-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-005	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	19 U	19	9.4	10	11/18/20 12:12	11/11/20	
4,4'-DDE	19 U	19	9.4	10	11/18/20 12:12	11/11/20	
4,4'-DDT	19 U	19	9.4	10	11/18/20 12:12	11/11/20	
Aldrin	19 U	19	9.4	10	11/18/20 12:12	11/11/20	
Dieldrin	19 U	19	9.4	10	11/18/20 12:12	11/11/20	
Endosulfan I	19 U	19	9.4	10	11/18/20 12:12	11/11/20	
Endosulfan II	19 U	19	9.4	10	11/18/20 12:12	11/11/20	
Endosulfan Sulfate	19 U	19	9.4	10	11/18/20 12:12	11/11/20	
Endrin	19 U	19	9.4	10	11/18/20 12:12	11/11/20	
Endrin Aldehyde	19 U	19	9.4	10	11/18/20 12:12	11/11/20	
Endrin Ketone	19 U	19	9.4	10	11/18/20 12:12	11/11/20	
Heptachlor	19 U	19	9.4	10	11/18/20 12:12	11/11/20	
Heptachlor Epoxide	19 U	19	9.4	10	11/18/20 12:12	11/11/20	
Methoxychlor	19 U	19	9.4	10	11/18/20 12:12	11/11/20	
Toxaphene	370 U	370	220	10	11/18/20 12:12	11/11/20	
alpha-BHC	19 U	19	9.4	10	11/18/20 12:12	11/11/20	
alpha-Chlordane	19 U	19	9.4	10	11/18/20 12:12	11/11/20	
beta-BHC	19 U	19	9.4	10	11/18/20 12:12	11/11/20	
delta-BHC	19 U	19	9.4	10	11/18/20 12:12	11/11/20	
gamma-BHC (Lindane)	19 U	19	9.4	10	11/18/20 12:12	11/11/20	
gamma-Chlordane	19 U	19	9.4	10	11/18/20 12:12	11/11/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	23	10 - 145	11/18/20 12:12	
Tetrachloro-m-xylene	24	10 - 123	11/18/20 12:12	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 12:25
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WCB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-006	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	
4,4'-DDE	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	
4,4'-DDT	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	
Aldrin	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	
Dieldrin	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	
Endosulfan I	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	
Endosulfan II	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	
Endosulfan Sulfate	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	
Endrin	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	
Endrin Aldehyde	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	
Endrin Ketone	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	
Heptachlor	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	
Heptachlor Epoxide	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	
Methoxychlor	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	
Toxaphene	190 U	190	110	5	11/18/20 12:32	11/11/20	
alpha-BHC	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	
alpha-Chlordane	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	
beta-BHC	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	
delta-BHC	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	
gamma-BHC (Lindane)	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	
gamma-Chlordane	9.8 U	9.8	4.9	5	11/18/20 12:32	11/11/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	49	10 - 145	11/18/20 12:32	
Tetrachloro-m-xylene	53	10 - 123	11/18/20 12:32	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/03/20 09:45
Sample Matrix:	Soil	**Date Received:**	11/03/20 17:00
Sample Name:	WGB-8-2-4-11032020	**Units:**	ug/Kg
Lab Code:	R2010361-001	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	36 U	36	19	1	11/11/20 05:18	11/9/20	
Aroclor 1221	74 U	74	19	1	11/11/20 05:18	11/9/20	
Aroclor 1232	36 U	36	19	1	11/11/20 05:18	11/9/20	
Aroclor 1242	36 U	36	19	1	11/11/20 05:18	11/9/20	
Aroclor 1248	36 U	36	19	1	11/11/20 05:18	11/9/20	
Aroclor 1254	36 U	36	19	1	11/11/20 05:18	11/9/20	
Aroclor 1260	36 U	36	19	1	11/11/20 05:18	11/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	58	22 - 128	11/11/20 05:18	
Tetrachloro-m-xylene	61	14 - 119	11/11/20 05:18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Native-10-12-11042020	**Units:**	ug/Kg
Lab Code:	R2010361-002	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	43 U	43	23	1	11/11/20 05:38	11/9/20	
Aroclor 1221	87 U	87	23	1	11/11/20 05:38	11/9/20	
Aroclor 1232	43 U	43	23	1	11/11/20 05:38	11/9/20	
Aroclor 1242	43 U	43	23	1	11/11/20 05:38	11/9/20	
Aroclor 1248	43 U	43	23	1	11/11/20 05:38	11/9/20	
Aroclor 1254	43 U	43	23	1	11/11/20 05:38	11/9/20	
Aroclor 1260	43 U	43	23	1	11/11/20 05:38	11/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	62	22 - 128	11/11/20 05:38	
Tetrachloro-m-xylene	51	14 - 119	11/11/20 05:38	

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dba ALS Environmental

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Fill-0.5-2-11042020	**Units:**	ug/Kg
Lab Code:	R2010361-003	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	40 U	40	21	1	11/11/20 06:17	11/9/20	
Aroclor 1221	80 U	80	21	1	11/11/20 06:17	11/9/20	
Aroclor 1232	40 U	40	21	1	11/11/20 06:17	11/9/20	
Aroclor 1242	40 U	40	21	1	11/11/20 06:17	11/9/20	
Aroclor 1248	40 U	40	21	1	11/11/20 06:17	11/9/20	
Aroclor 1254	40 U	40	21	1	11/11/20 06:17	11/9/20	
Aroclor 1260	40 U	40	21	1	11/11/20 06:17	11/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	28	22 - 128	11/11/20 06:17	
Tetrachloro-m-xylene	29	14 - 119	11/11/20 06:17	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 09:15
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	EB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-004	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	47 U	47	25	1	11/16/20 20:38	11/11/20	
Aroclor 1221	96 U	96	25	1	11/16/20 20:38	11/11/20	
Aroclor 1232	47 U	47	25	1	11/16/20 20:38	11/11/20	
Aroclor 1242	47 U	47	25	1	11/16/20 20:38	11/11/20	
Aroclor 1248	47 U	47	25	1	11/16/20 20:38	11/11/20	
Aroclor 1254	47 U	47	25	1	11/16/20 20:38	11/11/20	
Aroclor 1260	47 U	47	25	1	11/16/20 20:38	11/11/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	43	22 - 128	11/16/20 20:38	
Tetrachloro-m-xylene	43	14 - 119	11/16/20 20:38	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 11:45
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WAB1-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-005	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	37 U	37	19	1	11/16/20 20:57	11/11/20	
Aroclor 1221	74 U	74	19	1	11/16/20 20:57	11/11/20	
Aroclor 1232	37 U	37	19	1	11/16/20 20:57	11/11/20	
Aroclor 1242	37 U	37	19	1	11/16/20 20:57	11/11/20	
Aroclor 1248	37 U	37	19	1	11/16/20 20:57	11/11/20	
Aroclor 1254	37 U	37	19	1	11/16/20 20:57	11/11/20	
Aroclor 1260	37 U	37	19	1	11/16/20 20:57	11/11/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	25	22 - 128	11/16/20 20:57	
Tetrachloro-m-xylene	23	14 - 119	11/16/20 20:57	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 12:25
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WCB2-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-006	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	38 U	38	20	1	11/16/20 21:17	11/11/20	
Aroclor 1221	77 U	77	20	1	11/16/20 21:17	11/11/20	
Aroclor 1232	38 U	38	20	1	11/16/20 21:17	11/11/20	
Aroclor 1242	38 U	38	20	1	11/16/20 21:17	11/11/20	
Aroclor 1248	38 U	38	20	1	11/16/20 21:17	11/11/20	
Aroclor 1254	38 U	38	20	1	11/16/20 21:17	11/11/20	
Aroclor 1260	38 U	38	20	1	11/16/20 21:17	11/11/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	62	22 - 128	11/16/20 21:17	
Tetrachloro-m-xylene	57	14 - 119	11/16/20 21:17	

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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INORGANIC ANALYSIS DATA PACKAGE

Client: Ramboll US Corp (Syracuse)
Project No.: R2010361
Project Name:
Matrix: SOIL

Service Request: WGB-8-2-4-11032020
Date Collected: 11/3/2020
Date Received: 11/3/2020
Units: mg/Kg
Basis:

Sample Name: WGB-8-2-4-11032020 **Lab Code:** R2010361-001

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	20.0	12.0	1.0	4700		
Antimony	6010C	6.0	0.539	1.0	6.0	U	N
Arsenic	6010C	0.999	0.699	1.0	4.0		
Barium	6010C	2.0	1.5	1.0	36.0		
Beryllium	6010C	0.300	0.060	1.0	0.300		
Cadmium	6010C	0.500	0.240	1.0	0.330	J	
Mercury	7471B	0.037	0.014	1.0	0.070		
Calcium	6010C	999	320	10.0	79300		*
Chromium	6010C	0.999	0.350	1.0	8.1		N
Cobalt	6010C	5.0	0.460	1.0	3.5	J	
Copper	6010C	2.0	0.629	1.0	15.0		*
Iron	6010C	200	130	10.0	12000		
Lead	6010C	5.0	0.400	1.0	60.9		*
Magnesium	6010C	99.9	13.0	1.0	31900		*
Manganese	6010C	2.0	1.5	1.0	300		
Nickel	6010C	4.0	0.659	1.0	8.9		
Potassium	6010C	200	50.0	1.0	980		
Selenium	6010C	0.999	0.539	1.0	0.999	U	
Silver	6010C	0.999	0.090	1.0	0.210	J	
Sodium	6010C	99.9	51.9	1.0	134		
Thallium	6010C	0.999	0.649	1.0	0.999	U	
Vanadium	6010C	5.0	0.709	1.0	12.1		
Zinc	6010C	2.0	1.4	1.0	67.5		*

% Solids: 91.0

Comments:

METALS
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INORGANIC ANALYSIS DATA PACKAGE

Client: Ramboll US Corp (Syracuse)
Project No.: R2010361
Project Name:
Matrix: SOIL

Service Request: WGB-8-2-4-11032020
Date Collected: 11/4/2020
Date Received: 11/4/2020
Units: mg/Kg
Basis:

Sample Name: EB1-Native-10-12-11042020 **Lab Code:** R2010361-002

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	24.6	14.7	1.0	2670		
Antimony	6010C	7.4	0.663	1.0	7.4	U	N
Arsenic	6010C	1.2	0.860	1.0	2.6		
Barium	6010C	2.5	1.8	1.0	11.1		
Beryllium	6010C	0.368	0.074	1.0	0.147	J	
Cadmium	6010C	0.614	0.295	1.0	0.614	U	
Mercury	7471B	0.041	0.016	1.0	0.041	U	
Calcium	6010C	123	39.3	1.0	6260		*
Chromium	6010C	1.2	0.430	1.0	4.4		N
Cobalt	6010C	6.1	0.565	1.0	3.1	J	
Copper	6010C	2.5	0.774	1.0	3.2		*
Iron	6010C	246	160	10.0	6300		
Lead	6010C	6.1	0.491	1.0	3.9	J	*
Magnesium	6010C	123	16.0	1.0	3020		*
Manganese	6010C	2.5	1.8	1.0	94.1		
Nickel	6010C	4.9	0.810	1.0	5.9		
Potassium	6010C	246	61.4	1.0	447		
Selenium	6010C	1.2	0.663	1.0	1.2	U	
Silver	6010C	1.2	0.111	1.0	1.2	U	
Sodium	6010C	123	63.9	1.0	140		
Thallium	6010C	1.2	0.798	1.0	1.2	U	
Vanadium	6010C	6.1	0.872	1.0	6.0	J	
Zinc	6010C	2.5	1.7	1.0	18.3		*

% Solids: 78.3

Comments:

METALS
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INORGANIC ANALYSIS DATA PACKAGE

Client: Ramboll US Corp (Syracuse)
Project No.: R2010361
Project Name:
Matrix: SOIL

Service Request: WGB-8-2-4-11032020
Date Collected: 11/4/2020
Date Received: 11/4/2020
Units: mg/Kg
Basis:

Sample Name: EB1-Fill-0.5-2-11042020 **Lab Code:** R2010361-003

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	24.0	14.4	1.0	8350		
Antimony	6010C	7.2	0.647	1.0	7.2	U	N
Arsenic	6010C	1.2	0.839	1.0	5.9		
Barium	6010C	2.4	1.8	1.0	49.2		
Beryllium	6010C	0.360	0.072	1.0	0.396		
Cadmium	6010C	0.600	0.288	1.0	0.600	U	
Mercury	7471B	0.037	0.015	1.0	0.026	J	
Calcium	6010C	1200	384	10.0	39100		*
Chromium	6010C	1.2	0.420	1.0	12.7		N
Cobalt	6010C	6.0	0.552	1.0	7.0		
Copper	6010C	2.4	0.755	1.0	21.0		*
Iron	6010C	240	156	10.0	18900		
Lead	6010C	6.0	0.480	1.0	20.8		*
Magnesium	6010C	120	15.6	1.0	13700		*
Manganese	6010C	2.4	1.8	1.0	374		
Nickel	6010C	4.8	0.791	1.0	17.4		
Potassium	6010C	240	60.0	1.0	1350		
Selenium	6010C	1.2	0.647	1.0	1.2	U	
Silver	6010C	1.2	0.108	1.0	1.2	U	
Sodium	6010C	120	62.4	1.0	129		
Thallium	6010C	1.2	0.779	1.0	1.2	U	
Vanadium	6010C	6.0	0.851	1.0	17.9		
Zinc	6010C	2.4	1.7	1.0	61.4		*

% Solids: 83.4

Comments:

METALS
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INORGANIC ANALYSIS DATA PACKAGE

Client: Ramboll US Corp (Syracuse)
Project No.: R2010361
Project Name:
Matrix: SOIL

Service Request: WGB-8-2-4-11032020
Date Collected: 11/6/2020
Date Received: 11/6/2020
Units: mg/Kg
Basis:

Sample Name: EB2-0-2-11062020 **Lab Code:** R2010361-004

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	27.1	16.3	1.0	6510		
Antimony	6010C	8.1	0.733	1.0	8.1	U	N
Arsenic	6010C	1.4	0.950	1.0	8.1		
Barium	6010C	2.7	2.0	1.0	113		
Beryllium	6010C	0.407	0.081	1.0	1.1		
Cadmium	6010C	0.679	0.326	1.0	0.679	U	
Mercury	7471B	0.046	0.018	1.0	0.057		
Calcium	6010C	136	43.4	1.0	18100		*
Chromium	6010C	1.4	0.475	1.0	6.9		N
Cobalt	6010C	6.8	0.624	1.0	4.5	J	
Copper	6010C	2.7	0.855	1.0	22.7		*
Iron	6010C	271	176	10.0	15600		
Lead	6010C	6.8	0.543	1.0	43.7		*
Magnesium	6010C	136	17.6	1.0	5680		*
Manganese	6010C	2.7	2.0	1.0	262		
Nickel	6010C	5.4	0.896	1.0	10.1		
Potassium	6010C	271	67.9	1.0	679		
Selenium	6010C	1.4	0.733	1.0	1.4	U	
Silver	6010C	1.4	0.122	1.0	1.4	U	
Sodium	6010C	136	70.6	1.0	458		
Thallium	6010C	1.4	0.882	1.0	1.4	U	
Vanadium	6010C	6.8	0.964	1.0	12.5		
Zinc	6010C	2.7	1.9	1.0	45.3		*

% Solids: 69.5

Comments:

METALS
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INORGANIC ANALYSIS DATA PACKAGE

Client: Ramboll US Corp (Syracuse)
Project No.: R2010361
Project Name:
Matrix: SOIL

Service Request: WGB-8-2-4-11032020
Date Collected: 11/6/2020
Date Received: 11/6/2020
Units: mg/Kg
Basis:

Sample Name: WAB1-0-2-11062020 **Lab Code:** R2010361-005

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	22.1	13.3	1.0	4420		
Antimony	6010C	6.6	0.597	1.0	6.6	U	N
Arsenic	6010C	1.1	0.773	1.0	4.3		
Barium	6010C	2.2	1.7	1.0	39.3		
Beryllium	6010C	0.331	0.066	1.0	0.320	J	
Cadmium	6010C	0.552	0.265	1.0	0.552	U	
Mercury	7471B	0.034	0.013	1.0	0.235		
Calcium	6010C	1100	354	10.0	40600		*
Chromium	6010C	1.1	0.387	1.0	7.0		N
Cobalt	6010C	5.5	0.508	1.0	3.2	J	
Copper	6010C	2.2	0.696	1.0	17.4		*
Iron	6010C	221	144	10.0	13900		
Lead	6010C	5.5	0.442	1.0	38.1		*
Magnesium	6010C	110	14.4	1.0	17800		*
Manganese	6010C	2.2	1.7	1.0	310		
Nickel	6010C	4.4	0.729	1.0	7.3		
Potassium	6010C	221	55.2	1.0	755		
Selenium	6010C	1.1	0.597	1.0	1.1	U	
Silver	6010C	1.1	0.099	1.0	0.177	J	
Sodium	6010C	110	57.5	1.0	102	J	
Thallium	6010C	1.1	0.718	1.0	1.1	U	
Vanadium	6010C	5.5	0.785	1.0	10.4		
Zinc	6010C	2.2	1.6	1.0	65.4		*

% Solids: 90.5

Comments:

METALS
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INORGANIC ANALYSIS DATA PACKAGE

Client: Ramboll US Corp (Syracuse) **Service Request:** WGB-8-2-4-11032020

Project No.: R2010361 **Date Collected:** 11/6/2020

Project Name: **Date Received:** 11/6/2020

Matrix: SOIL **Units:** mg/Kg

Basis:

Sample Name: **WCB2-0-2-11062020** **Lab Code:** **R2010361-006**

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	23.1	13.9	1.0	9770		
Antimony	6010C	6.9	0.624	1.0	16.8		N
Arsenic	6010C	1.2	0.809	1.0	7.3		
Barium	6010C	2.3	1.7	1.0	88.4		
Beryllium	6010C	0.347	0.069	1.0	0.647		
Cadmium	6010C	0.578	0.277	1.0	0.636		
Mercury	7471B	0.036	0.014	1.0	0.147		
Calcium	6010C	1160	370	10.0	25200		*
Chromium	6010C	1.2	0.405	1.0	16.6		N
Cobalt	6010C	5.8	0.532	1.0	5.8		
Copper	6010C	23.1	7.3	10.0	1890		*
Iron	6010C	231	150	10.0	19500		
Lead	6010C	57.8	4.6	10.0	465		*
Magnesium	6010C	116	15.0	1.0	11900		*
Manganese	6010C	2.3	1.7	1.0	311		
Nickel	6010C	4.6	0.763	1.0	25.7		
Potassium	6010C	231	57.8	1.0	1160		
Selenium	6010C	1.2	0.624	1.0	1.2	U	
Silver	6010C	1.2	0.104	1.0	1.9		
Sodium	6010C	116	60.1	1.0	120		
Thallium	6010C	1.2	0.751	1.0	1.2	U	
Vanadium	6010C	5.8	0.821	1.0	17.6		
Zinc	6010C	23.1	16.2	10.0	390		*

% Solids: **86.5**

Comments:

General Chemistry

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:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/03/20 09:45
Sample Matrix:	Soil	**Date Received:**	11/03/20 17:00
Sample Name:	WGB-8-2-4-11032020	**Basis:**	Dry
Lab Code:	R2010361-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	0.24 U	mg/Kg	0.24	0.17	1	11/12/20 12:06	11/11/20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/03/20 09:45
Sample Matrix:	Soil	**Date Received:**	11/03/20 17:00
Sample Name:	WGB-8-2-4-11032020	**Basis:**	As Received
Lab Code:	R2010361-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Total Solids	ALS SOP	**91.0**	Percent	-	-	1	11/13/20 14:00	NA	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Native-10-12-11042020	**Basis:**	Dry
Lab Code:	R2010361-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	0.33 U	mg/Kg	0.33	0.19	1	11/12/20 12:06	11/11/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Native-10-12-11042020	**Basis:**	As Received
Lab Code:	R2010361-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Total Solids	ALS SOP	**78.3**	Percent	-	-	1	11/13/20 14:00	NA	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Fill-0.5-2-11042020	**Basis:**	Dry
Lab Code:	R2010361-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	0.33 U	mg/Kg	0.33	0.19	1	11/12/20 12:07	11/11/20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Fill-0.5-2-11042020	**Basis:**	As Received
Lab Code:	R2010361-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Total Solids	ALS SOP	**83.4**	Percent	-	-	1	11/13/20 13:00	NA	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 09:15
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	EB2-0-2-11062020	**Basis:**	Dry
Lab Code:	R2010361-004		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	**0.79**	mg/Kg	0.36	0.21	1	11/12/20 12:08	11/11/20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 09:15
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	EB2-0-2-11062020	**Basis:**	As Received
Lab Code:	R2010361-004		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Total Solids	ALS SOP	**69.5**	Percent	-	-	1	11/13/20 13:00	NA	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 11:45
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WAB1-0-2-11062020	**Basis:**	Dry
Lab Code:	R2010361-005		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	**1.78**	mg/Kg	0.28	0.17	1	11/12/20 12:09	11/11/20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 11:45
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WAB1-0-2-11062020	**Basis:**	As Received
Lab Code:	R2010361-005		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Total Solids	ALS SOP	**90.5**	Percent	-	-	1	11/13/20 13:00	NA	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 12:25
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WCB2-0-2-11062020	**Basis:**	Dry
Lab Code:	R2010361-006		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	**1.11**	mg/Kg	0.33	0.19	1	11/12/20 12:09	11/11/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 12:25
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WCB2-0-2-11062020	**Basis:**	As Received
Lab Code:	R2010361-006		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Total Solids	ALS SOP	**86.5**	Percent	-	-	1	11/13/20 13:00	NA	

QC Summary Forms

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

Volatile Organic Compounds by GC/MS

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

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010361
Project: Rochester REDI/1940100197
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: EPA 5035A

Sample Name	Lab Code	4-Bromofluorobenzene 31-154	Dibromofluoromethane 63-138	Toluene-d8 66-138
WGB-8-2-4-11032020	R2010361-001	87	114	106
EB1-Native-10-12-11042020	R2010361-002	101	112	106
EB1-Fill-0.5-2-11042020	R2010361-003	101	113	110
EB2-0-2-11062020	R2010361-004	78	121	109
EB2-0-2-11062020 RE	R2010361-004	47	129	107
WAB1-0-2-11062020	R2010361-005	91	118	108
WCB2-0-2-11062020	R2010361-006	77	120	110
WCB2-0-2-11062020 RE	R2010361-006	77	119	110
Method Blank	RQ2013633-04	99	116	109
Method Blank	RQ2013982-04	102	115	110
Method Blank	RQ2014023-05	101	115	108
Lab Control Sample	RQ2013633-03	107	117	107
Lab Control Sample	RQ2013982-03	109	119	109
Lab Control Sample	RQ2014023-03	112	121	108
Duplicate Lab Control Sample	RQ2014023-04	113	118	110

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2013633-04	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	5.0 U	5.0	0.20	1	11/06/20 17:20	
1,1,2,2-Tetrachloroethane	5.0 U	5.0	0.44	1	11/06/20 17:20	
1,1,2-Trichloroethane	5.0 U	5.0	0.20	1	11/06/20 17:20	
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0 U	5.0	0.20	1	11/06/20 17:20	
1,1-Dichloroethane (1,1-DCA)	5.0 U	5.0	0.20	1	11/06/20 17:20	
1,1-Dichloroethene (1,1-DCE)	5.0 U	5.0	0.29	1	11/06/20 17:20	
1,2,3-Trichlorobenzene	5.0 U	5.0	0.52	1	11/06/20 17:20	
1,2,4-Trichlorobenzene	5.0 U	5.0	0.42	1	11/06/20 17:20	
1,2-Dibromo-3-chloropropane (DBCP)	5.0 U	5.0	0.75	1	11/06/20 17:20	
1,2-Dibromoethane	5.0 U	5.0	0.20	1	11/06/20 17:20	
1,2-Dichlorobenzene	5.0 U	5.0	0.20	1	11/06/20 17:20	
1,2-Dichloroethane	5.0 U	5.0	0.20	1	11/06/20 17:20	
1,2-Dichloropropane	5.0 U	5.0	0.20	1	11/06/20 17:20	
1,3-Dichlorobenzene	5.0 U	5.0	0.20	1	11/06/20 17:20	
1,4-Dichlorobenzene	5.0 U	5.0	0.22	1	11/06/20 17:20	
1,4-Dioxane	100 U	100	20	1	11/06/20 17:20	
2-Butanone (MEK)	5.0 U	5.0	2.0	1	11/06/20 17:20	
2-Hexanone	5.0 U	5.0	0.36	1	11/06/20 17:20	
4-Methyl-2-pentanone	5.0 U	5.0	0.23	1	11/06/20 17:20	
Acetone	5.0 U	5.0	4.7	1	11/06/20 17:20	
Benzene	5.0 U	5.0	0.20	1	11/06/20 17:20	
Bromochloromethane	5.0 U	5.0	0.20	1	11/06/20 17:20	
Bromodichloromethane	5.0 U	5.0	0.20	1	11/06/20 17:20	
Bromoform	5.0 U	5.0	0.50	1	11/06/20 17:20	
Bromomethane	5.0 U	5.0	2.1	1	11/06/20 17:20	
Carbon Disulfide	5.0 U	5.0	0.29	1	11/06/20 17:20	
Carbon Tetrachloride	5.0 U	5.0	0.26	1	11/06/20 17:20	
Chlorobenzene	5.0 U	5.0	0.20	1	11/06/20 17:20	
Chloroethane	5.0 U	5.0	0.41	1	11/06/20 17:20	
Chloroform	5.0 U	5.0	0.20	1	11/06/20 17:20	
Chloromethane	5.0 U	5.0	1.4	1	11/06/20 17:20	
Cyclohexane	5.0 U	5.0	0.26	1	11/06/20 17:20	
Dibromochloromethane	5.0 U	5.0	0.20	1	11/06/20 17:20	
Dichlorodifluoromethane (CFC 12)	5.0 U	5.0	0.33	1	11/06/20 17:20	
Dichloromethane	5.0 U	5.0	2.8	1	11/06/20 17:20	
Ethylbenzene	5.0 U	5.0	0.20	1	11/06/20 17:20	
Isopropylbenzene (Cumene)	5.0 U	5.0	0.20	1	11/06/20 17:20	
Methyl Acetate	5.0 U	5.0	0.84	1	11/06/20 17:20	
Methyl tert-Butyl Ether	5.0 U	5.0	0.20	1	11/06/20 17:20	
Methylcyclohexane	5.0 U	5.0	0.31	1	11/06/20 17:20	
Styrene	5.0 U	5.0	0.20	1	11/06/20 17:20	
Tetrachloroethene (PCE)	5.0 U	5.0	0.23	1	11/06/20 17:20	
Toluene	5.0 U	5.0	0.20	1	11/06/20 17:20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2013633-04	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	5.0 U	5.0	0.22	1	11/06/20 17:20	
Trichlorofluoromethane (CFC 11)	5.0 U	5.0	0.26	1	11/06/20 17:20	
Vinyl Chloride	5.0 U	5.0	0.46	1	11/06/20 17:20	
cis-1,2-Dichloroethene	5.0 U	5.0	0.20	1	11/06/20 17:20	
cis-1,3-Dichloropropene	5.0 U	5.0	0.20	1	11/06/20 17:20	
m,p-Xylenes	10 U	10	0.37	1	11/06/20 17:20	
o-Xylene	5.0 U	5.0	0.20	1	11/06/20 17:20	
trans-1,2-Dichloroethene	5.0 U	5.0	0.20	1	11/06/20 17:20	
trans-1,3-Dichloropropene	5.0 U	5.0	0.20	1	11/06/20 17:20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	31 - 154	11/06/20 17:20	
Dibromofluoromethane	116	63 - 138	11/06/20 17:20	
Toluene-d8	109	66 - 138	11/06/20 17:20	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2013982-04	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	5.0 U	5.0	0.20	1	11/13/20 12:03	
1,1,2,2-Tetrachloroethane	5.0 U	5.0	0.44	1	11/13/20 12:03	
1,1,2-Trichloroethane	5.0 U	5.0	0.20	1	11/13/20 12:03	
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0 U	5.0	0.20	1	11/13/20 12:03	
1,1-Dichloroethane (1,1-DCA)	5.0 U	5.0	0.20	1	11/13/20 12:03	
1,1-Dichloroethene (1,1-DCE)	5.0 U	5.0	0.29	1	11/13/20 12:03	
1,2,3-Trichlorobenzene	5.0 U	5.0	0.52	1	11/13/20 12:03	
1,2,4-Trichlorobenzene	5.0 U	5.0	0.42	1	11/13/20 12:03	
1,2-Dibromo-3-chloropropane (DBCP)	5.0 U	5.0	0.75	1	11/13/20 12:03	
1,2-Dibromoethane	5.0 U	5.0	0.20	1	11/13/20 12:03	
1,2-Dichlorobenzene	5.0 U	5.0	0.20	1	11/13/20 12:03	
1,2-Dichloroethane	5.0 U	5.0	0.20	1	11/13/20 12:03	
1,2-Dichloropropane	5.0 U	5.0	0.20	1	11/13/20 12:03	
1,3-Dichlorobenzene	5.0 U	5.0	0.20	1	11/13/20 12:03	
1,4-Dichlorobenzene	5.0 U	5.0	0.22	1	11/13/20 12:03	
1,4-Dioxane	100 U	100	20	1	11/13/20 12:03	
2-Butanone (MEK)	5.0 U	5.0	2.0	1	11/13/20 12:03	
2-Hexanone	5.0 U	5.0	0.36	1	11/13/20 12:03	
4-Methyl-2-pentanone	5.0 U	5.0	0.23	1	11/13/20 12:03	
Acetone	5.0 U	5.0	4.7	1	11/13/20 12:03	
Benzene	5.0 U	5.0	0.20	1	11/13/20 12:03	
Bromochloromethane	5.0 U	5.0	0.20	1	11/13/20 12:03	
Bromodichloromethane	5.0 U	5.0	0.20	1	11/13/20 12:03	
Bromoform	5.0 U	5.0	0.50	1	11/13/20 12:03	
Bromomethane	5.0 U	5.0	2.1	1	11/13/20 12:03	
Carbon Disulfide	5.0 U	5.0	0.29	1	11/13/20 12:03	
Carbon Tetrachloride	5.0 U	5.0	0.26	1	11/13/20 12:03	
Chlorobenzene	5.0 U	5.0	0.20	1	11/13/20 12:03	
Chloroethane	5.0 U	5.0	0.41	1	11/13/20 12:03	
Chloroform	5.0 U	5.0	0.20	1	11/13/20 12:03	
Chloromethane	5.0 U	5.0	1.4	1	11/13/20 12:03	
Cyclohexane	5.0 U	5.0	0.26	1	11/13/20 12:03	
Dibromochloromethane	5.0 U	5.0	0.20	1	11/13/20 12:03	
Dichlorodifluoromethane (CFC 12)	5.0 U	5.0	0.33	1	11/13/20 12:03	
Dichloromethane	5.0 U	5.0	2.8	1	11/13/20 12:03	
Ethylbenzene	5.0 U	5.0	0.20	1	11/13/20 12:03	
Isopropylbenzene (Cumene)	5.0 U	5.0	0.20	1	11/13/20 12:03	
Methyl Acetate	5.0 U	5.0	0.84	1	11/13/20 12:03	
Methyl tert-Butyl Ether	5.0 U	5.0	0.20	1	11/13/20 12:03	
Methylcyclohexane	5.0 U	5.0	0.31	1	11/13/20 12:03	
Styrene	5.0 U	5.0	0.20	1	11/13/20 12:03	
Tetrachloroethene (PCE)	5.0 U	5.0	0.23	1	11/13/20 12:03	
Toluene	5.0 U	5.0	0.20	1	11/13/20 12:03	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2013982-04	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	5.0 U	5.0	0.22	1	11/13/20 12:03	
Trichlorofluoromethane (CFC 11)	5.0 U	5.0	0.26	1	11/13/20 12:03	
Vinyl Chloride	5.0 U	5.0	0.46	1	11/13/20 12:03	
cis-1,2-Dichloroethene	5.0 U	5.0	0.20	1	11/13/20 12:03	
cis-1,3-Dichloropropene	5.0 U	5.0	0.20	1	11/13/20 12:03	
m,p-Xylenes	10 U	10	0.37	1	11/13/20 12:03	
o-Xylene	5.0 U	5.0	0.20	1	11/13/20 12:03	
trans-1,2-Dichloroethene	5.0 U	5.0	0.20	1	11/13/20 12:03	
trans-1,3-Dichloropropene	5.0 U	5.0	0.20	1	11/13/20 12:03	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	102	31 - 154	11/13/20 12:03	
Dibromofluoromethane	115	63 - 138	11/13/20 12:03	
Toluene-d8	110	66 - 138	11/13/20 12:03	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2014023-05	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	5.0 U	5.0	0.20	1	11/15/20 13:51	
1,1,2,2-Tetrachloroethane	5.0 U	5.0	0.44	1	11/15/20 13:51	
1,1,2-Trichloroethane	5.0 U	5.0	0.20	1	11/15/20 13:51	
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0 U	5.0	0.20	1	11/15/20 13:51	
1,1-Dichloroethane (1,1-DCA)	5.0 U	5.0	0.20	1	11/15/20 13:51	
1,1-Dichloroethene (1,1-DCE)	5.0 U	5.0	0.29	1	11/15/20 13:51	
1,2,3-Trichlorobenzene	5.0 U	5.0	0.52	1	11/15/20 13:51	
1,2,4-Trichlorobenzene	5.0 U	5.0	0.42	1	11/15/20 13:51	
1,2-Dibromo-3-chloropropane (DBCP)	5.0 U	5.0	0.75	1	11/15/20 13:51	
1,2-Dibromoethane	5.0 U	5.0	0.20	1	11/15/20 13:51	
1,2-Dichlorobenzene	5.0 U	5.0	0.20	1	11/15/20 13:51	
1,2-Dichloroethane	5.0 U	5.0	0.20	1	11/15/20 13:51	
1,2-Dichloropropane	5.0 U	5.0	0.20	1	11/15/20 13:51	
1,3-Dichlorobenzene	5.0 U	5.0	0.20	1	11/15/20 13:51	
1,4-Dichlorobenzene	5.0 U	5.0	0.22	1	11/15/20 13:51	
1,4-Dioxane	100 U	100	20	1	11/15/20 13:51	
2-Butanone (MEK)	5.0 U	5.0	2.0	1	11/15/20 13:51	
2-Hexanone	5.0 U	5.0	0.36	1	11/15/20 13:51	
4-Methyl-2-pentanone	5.0 U	5.0	0.23	1	11/15/20 13:51	
Acetone	5.0 U	5.0	4.7	1	11/15/20 13:51	
Benzene	5.0 U	5.0	0.20	1	11/15/20 13:51	
Bromochloromethane	5.0 U	5.0	0.20	1	11/15/20 13:51	
Bromodichloromethane	5.0 U	5.0	0.20	1	11/15/20 13:51	
Bromoform	5.0 U	5.0	0.50	1	11/15/20 13:51	
Bromomethane	5.0 U	5.0	2.1	1	11/15/20 13:51	
Carbon Disulfide	5.0 U	5.0	0.29	1	11/15/20 13:51	
Carbon Tetrachloride	5.0 U	5.0	0.26	1	11/15/20 13:51	
Chlorobenzene	5.0 U	5.0	0.20	1	11/15/20 13:51	
Chloroethane	5.0 U	5.0	0.41	1	11/15/20 13:51	
Chloroform	5.0 U	5.0	0.20	1	11/15/20 13:51	
Chloromethane	5.0 U	5.0	1.4	1	11/15/20 13:51	
Cyclohexane	5.0 U	5.0	0.26	1	11/15/20 13:51	
Dibromochloromethane	5.0 U	5.0	0.20	1	11/15/20 13:51	
Dichlorodifluoromethane (CFC 12)	5.0 U	5.0	0.33	1	11/15/20 13:51	
Dichloromethane	5.0 U	5.0	2.8	1	11/15/20 13:51	
Ethylbenzene	5.0 U	5.0	0.20	1	11/15/20 13:51	
Isopropylbenzene (Cumene)	5.0 U	5.0	0.20	1	11/15/20 13:51	
Methyl Acetate	5.0 U	5.0	0.84	1	11/15/20 13:51	
Methyl tert-Butyl Ether	5.0 U	5.0	0.20	1	11/15/20 13:51	
Methylcyclohexane	5.0 U	5.0	0.31	1	11/15/20 13:51	
Styrene	5.0 U	5.0	0.20	1	11/15/20 13:51	
Tetrachloroethene (PCE)	5.0 U	5.0	0.23	1	11/15/20 13:51	
Toluene	5.0 U	5.0	0.20	1	11/15/20 13:51	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2014023-05	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	5.0 U	5.0	0.22	1	11/15/20 13:51	
Trichlorofluoromethane (CFC 11)	5.0 U	5.0	0.26	1	11/15/20 13:51	
Vinyl Chloride	5.0 U	5.0	0.46	1	11/15/20 13:51	
cis-1,2-Dichloroethene	5.0 U	5.0	0.20	1	11/15/20 13:51	
cis-1,3-Dichloropropene	5.0 U	5.0	0.20	1	11/15/20 13:51	
m,p-Xylenes	10 U	10	0.37	1	11/15/20 13:51	
o-Xylene	5.0 U	5.0	0.20	1	11/15/20 13:51	
trans-1,2-Dichloroethene	5.0 U	5.0	0.20	1	11/15/20 13:51	
trans-1,3-Dichloropropene	5.0 U	5.0	0.20	1	11/15/20 13:51	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	31 - 154	11/15/20 13:51	
Dibromofluoromethane	115	63 - 138	11/15/20 13:51	
Toluene-d8	108	66 - 138	11/15/20 13:51	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010361
Project: Rochester REDI/1940100197 **Date Analyzed:** 11/06/20
Sample Matrix: Soil

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

Lab Control Sample
RQ2013633-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	8260C	20.4	20.0	102	68-123
1,1,2,2-Tetrachloroethane	8260C	17.1	20.0	86	78-121
1,1,2-Trichloroethane	8260C	20.0	20.0	100	84-117
1,1,2-Trichloro-1,2,2-trifluoroethane	8260C	18.1	20.0	90	54-121
1,1-Dichloroethane (1,1-DCA)	8260C	17.6	20.0	88	76-123
1,1-Dichloroethene (1,1-DCE)	8260C	20.0	20.0	100	65-115
1,2,3-Trichlorobenzene	8260C	19.4	20.0	97	60-128
1,2,4-Trichlorobenzene	8260C	19.0	20.0	95	62-130
1,2-Dibromo-3-chloropropane (DBCP)	8260C	16.3	20.0	81	54-135
1,2-Dibromoethane	8260C	20.0	20.0	100	77-117
1,2-Dichlorobenzene	8260C	18.6	20.0	93	75-116
1,2-Dichloroethane	8260C	21.6	20.0	108	74-116
1,2-Dichloropropane	8260C	18.2	20.0	91	79-112
1,3-Dichlorobenzene	8260C	18.5	20.0	92	72-118
1,4-Dichlorobenzene	8260C	17.8	20.0	89	72-117
1,4-Dioxane	8260C	346	400	86	59-147
2-Butanone (MEK)	8260C	20.8	20.0	104	67-129
2-Hexanone	8260C	21.4	20.0	107	68-118
4-Methyl-2-pentanone	8260C	20.9	20.0	105	64-123
Acetone	8260C	20.5	20.0	102	32-154
Benzene	8260C	18.2	20.0	91	77-114
Bromochloromethane	8260C	19.2	20.0	96	78-117
Bromodichloromethane	8260C	19.0	20.0	95	72-118
Bromoform	8260C	19.5	20.0	98	55-134
Bromomethane	8260C	25.3	20.0	126	10-150
Carbon Disulfide	8260C	13.2	20.0	66	44-139
Carbon Tetrachloride	8260C	22.8	20.0	114	51-123
Chlorobenzene	8260C	19.2	20.0	96	79-115
Chloroethane	8260C	21.0	20.0	105	10-140
Chloroform	8260C	19.4	20.0	97	76-115
Chloromethane	8260C	18.2	20.0	91	10-131
Cyclohexane	8260C	20.4	20.0	102	67-122
Dibromochloromethane	8260C	20.2	20.0	101	68-121

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Analyzed: 11/06/20

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

Lab Control Sample
RQ2013633-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Dichlorodifluoromethane (CFC 12)	8260C	17.9	20.0	89	51-144
Dichloromethane	8260C	16.1	20.0	81	72-118
Ethylbenzene	8260C	19.2	20.0	96	64-118
Isopropylbenzene (Cumene)	8260C	19.0	20.0	95	60-123
Methyl Acetate	8260C	16.6	20.0	83	31-122
Methyl tert-Butyl Ether	8260C	18.9	20.0	94	76-118
Methylcyclohexane	8260C	18.6	20.0	93	70-124
Styrene	8260C	18.7	20.0	93	74-117
Tetrachloroethene (PCE)	8260C	20.9	20.0	104	58-124
Toluene	8260C	18.6	20.0	93	72-116
Trichloroethene (TCE)	8260C	20.5	20.0	102	69-118
Trichlorofluoromethane (CFC 11)	8260C	29.6	20.0	148 *	52-127
Vinyl Chloride	8260C	17.5	20.0	88	59-153
cis-1,2-Dichloroethene	8260C	18.4	20.0	92	79-113
cis-1,3-Dichloropropene	8260C	17.9	20.0	90	66-117
m,p-Xylenes	8260C	38.1	40.0	95	68-118
o-Xylene	8260C	18.9	20.0	95	71-116
trans-1,2-Dichloroethene	8260C	19.7	20.0	99	73-114
trans-1,3-Dichloropropene	8260C	18.6	20.0	93	57-135

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Analyzed: 11/13/20

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

Lab Control Sample
RQ2013982-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	8260C	20.4	20.0	102	68-123
1,1,2,2-Tetrachloroethane	8260C	16.5	20.0	82	78-121
1,1,2-Trichloroethane	8260C	20.4	20.0	102	84-117
1,1,2-Trichloro-1,2,2-trifluoroethane	8260C	16.5	20.0	82	54-121
1,1-Dichloroethane (1,1-DCA)	8260C	17.3	20.0	86	76-123
1,1-Dichloroethene (1,1-DCE)	8260C	19.3	20.0	96	65-115
1,2,3-Trichlorobenzene	8260C	21.2	20.0	106	60-128
1,2,4-Trichlorobenzene	8260C	20.0	20.0	100	62-130
1,2-Dibromo-3-chloropropane (DBCP)	8260C	15.0	20.0	75	54-135
1,2-Dibromoethane	8260C	20.0	20.0	100	77-117
1,2-Dichlorobenzene	8260C	19.4	20.0	97	75-116
1,2-Dichloroethane	8260C	22.0	20.0	110	74-116
1,2-Dichloropropane	8260C	18.6	20.0	93	79-112
1,3-Dichlorobenzene	8260C	19.5	20.0	97	72-118
1,4-Dichlorobenzene	8260C	19.4	20.0	97	72-117
1,4-Dioxane	8260C	288	400	72	59-147
2-Butanone (MEK)	8260C	18.2	20.0	91	67-129
2-Hexanone	8260C	17.7	20.0	88	68-118
4-Methyl-2-pentanone	8260C	17.2	20.0	86	64-123
Acetone	8260C	17.5	20.0	88	32-154
Benzene	8260C	18.5	20.0	92	77-114
Bromochloromethane	8260C	19.5	20.0	98	78-117
Bromodichloromethane	8260C	19.6	20.0	98	72-118
Bromoform	8260C	20.3	20.0	101	55-134
Bromomethane	8260C	27.2	20.0	136	10-150
Carbon Disulfide	8260C	10.1	20.0	50	44-139
Carbon Tetrachloride	8260C	21.2	20.0	106	51-123
Chlorobenzene	8260C	19.3	20.0	97	79-115
Chloroethane	8260C	20.6	20.0	103	10-140
Chloroform	8260C	20.0	20.0	100	76-115
Chloromethane	8260C	16.9	20.0	85	10-131
Cyclohexane	8260C	18.1	20.0	91	67-122
Dibromochloromethane	8260C	19.9	20.0	99	68-121

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Analyzed: 11/13/20

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

Lab Control Sample
RQ2013982-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Dichlorodifluoromethane (CFC 12)	8260C	16.5	20.0	82	51-144
Dichloromethane	8260C	16.4	20.0	82	72-118
Ethylbenzene	8260C	18.9	20.0	95	64-118
Isopropylbenzene (Cumene)	8260C	19.0	20.0	95	60-123
Methyl Acetate	8260C	15.1	20.0	76	31-122
Methyl tert-Butyl Ether	8260C	18.7	20.0	94	76-118
Methylcyclohexane	8260C	16.6	20.0	83	70-124
Styrene	8260C	19.0	20.0	95	74-117
Tetrachloroethene (PCE)	8260C	20.4	20.0	102	58-124
Toluene	8260C	18.8	20.0	94	72-116
Trichloroethene (TCE)	8260C	20.2	20.0	101	69-118
Trichlorofluoromethane (CFC 11)	8260C	29.4	20.0	147 *	52-127
Vinyl Chloride	8260C	17.1	20.0	86	59-153
cis-1,2-Dichloroethene	8260C	18.7	20.0	93	79-113
cis-1,3-Dichloropropene	8260C	18.0	20.0	90	66-117
m,p-Xylenes	8260C	38.3	40.0	96	68-118
o-Xylene	8260C	19.7	20.0	98	71-116
trans-1,2-Dichloroethene	8260C	19.0	20.0	95	73-114
trans-1,3-Dichloropropene	8260C	19.0	20.0	95	57-135

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010361
Project: Rochester REDI/1940100197 **Date Analyzed:** 11/15/20
Sample Matrix: Soil

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

	Lab Control Sample				Duplicate Lab Control Sample					
	RQ2014023-03				RQ2014023-04					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,1,1-Trichloroethane (TCA)	8260C	19.8	20.0	99	19.5	20.0	97	68-123	2	30
1,1,2,2-Tetrachloroethane	8260C	18.2	20.0	91	18.6	20.0	93	78-121	2	30
1,1,2-Trichloroethane	8260C	20.4	20.0	102	20.7	20.0	103	84-117	<1	30
1,1,2-Trichloro-1,2,2-trifluoroethane	8260C	18.1	20.0	90	16.3	20.0	82	54-121	9	30
1,1-Dichloroethane (1,1-DCA)	8260C	18.4	20.0	92	18.2	20.0	91	76-123	1	30
1,1-Dichloroethene (1,1-DCE)	8260C	19.9	20.0	99	18.6	20.0	93	65-115	6	30
1,2,3-Trichlorobenzene	8260C	20.5	20.0	103	19.4	20.0	97	60-128	6	30
1,2,4-Trichlorobenzene	8260C	20.0	20.0	100	18.6	20.0	93	62-130	7	30
1,2-Dibromo-3-chloropropane (DBCP)	8260C	16.9	20.0	85	17.0	20.0	85	54-135	<1	30
1,2-Dibromoethane	8260C	20.9	20.0	104	21.0	20.0	105	77-117	<1	30
1,2-Dichlorobenzene	8260C	19.6	20.0	98	18.4	20.0	92	75-116	6	30
1,2-Dichloroethane	8260C	23.1	20.0	116	22.6	20.0	113	74-116	3	30
1,2-Dichloropropane	8260C	18.9	20.0	94	18.3	20.0	92	79-112	2	30
1,3-Dichlorobenzene	8260C	19.2	20.0	96	18.4	20.0	92	72-118	4	30
1,4-Dichlorobenzene	8260C	19.1	20.0	96	18.2	20.0	91	72-117	5	30
1,4-Dioxane	8260C	362	400	90	374	400	94	59-147	4	30
2-Butanone (MEK)	8260C	21.9	20.0	109	22.7	20.0	114	67-129	4	30
2-Hexanone	8260C	22.1	20.0	111	22.0	20.0	110	68-118	<1	30
4-Methyl-2-pentanone	8260C	21.6	20.0	108	21.9	20.0	110	64-123	2	30
Acetone	8260C	22.1	20.0	111	20.3	20.0	102	32-154	8	30
Benzene	8260C	18.6	20.0	93	17.6	20.0	88	77-114	6	30
Bromochloromethane	8260C	20.7	20.0	104	20.0	20.0	100	78-117	4	30
Bromodichloromethane	8260C	20.2	20.0	101	19.1	20.0	96	72-118	5	30
Bromoform	8260C	20.2	20.0	101	19.4	20.0	97	55-134	4	30
Bromomethane	8260C	33.0	20.0	165 *	30.8	20.0	154 *	10-150	7	30
Carbon Disulfide	8260C	11.3	20.0	56	10.7	20.0	54	44-139	4	30
Carbon Tetrachloride	8260C	19.2	20.0	96	18.8	20.0	94	51-123	2	30
Chlorobenzene	8260C	19.7	20.0	99	18.8	20.0	94	79-115	5	30
Chloroethane	8260C	24.9	20.0	124	25.2	20.0	126	10-140	2	30
Chloroform	8260C	21.0	20.0	105	20.3	20.0	102	76-115	3	30
Chloromethane	8260C	20.3	20.0	102	19.6	20.0	98	10-131	4	30
Cyclohexane	8260C	19.9	20.0	100	19.0	20.0	95	67-122	5	30
Dibromochloromethane	8260C	20.8	20.0	104	19.9	20.0	99	68-121	5	30

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010361
Project: Rochester REDI/1940100197 **Date Analyzed:** 11/15/20
Sample Matrix: Soil

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2014023-03			RQ2014023-04					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Dichlorodifluoromethane (CFC 12)	8260C	16.1	20.0	81	15.2	20.0	76	51-144	6	30
Dichloromethane	8260C	17.6	20.0	88	17.6	20.0	88	72-118	<1	30
Ethylbenzene	8260C	18.7	20.0	93	17.6	20.0	88	64-118	6	30
Isopropylbenzene (Cumene)	8260C	18.9	20.0	94	17.7	20.0	89	60-123	5	30
Methyl Acetate	8260C	19.4	20.0	97	19.1	20.0	96	31-122	1	30
Methyl tert-Butyl Ether	8260C	20.9	20.0	104	21.0	20.0	105	76-118	<1	30
Methylcyclohexane	8260C	18.5	20.0	93	17.9	20.0	89	70-124	4	30
Styrene	8260C	19.6	20.0	98	18.6	20.0	93	74-117	5	30
Tetrachloroethene (PCE)	8260C	18.5	20.0	92	17.2	20.0	86	58-124	7	30
Toluene	8260C	18.6	20.0	93	18.0	20.0	90	72-116	3	30
Trichloroethene (TCE)	8260C	19.6	20.0	98	18.7	20.0	93	69-118	5	30
Trichlorofluoromethane (CFC 11)	8260C	32.8	20.0	164 *	32.5	20.0	162 *	52-127	1	30
Vinyl Chloride	8260C	19.6	20.0	98	19.4	20.0	97	59-153	1	30
cis-1,2-Dichloroethene	8260C	19.6	20.0	98	18.9	20.0	94	79-113	4	30
cis-1,3-Dichloropropene	8260C	18.1	20.0	91	17.5	20.0	88	66-117	3	30
m,p-Xylenes	8260C	37.9	40.0	95	35.8	40.0	90	68-118	5	30
o-Xylene	8260C	20.1	20.0	100	18.5	20.0	93	71-116	7	30
trans-1,2-Dichloroethene	8260C	20.4	20.0	102	19.3	20.0	96	73-114	6	30
trans-1,3-Dichloropropene	8260C	19.7	20.0	99	19.0	20.0	95	57-135	4	30

Semivolatile Organic Compounds by GC/MS

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

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010361
Project: Rochester REDI/1940100197
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3541

Sample Name	Lab Code	2,4,6-Tribromophenol 19-107	2-Fluorobiphenyl 10-115	2-Fluorophenol 10-97
WGB-8-2-4-11032020	R2010361-001	56	65	49
EB1-Native-10-12-11042020	R2010361-002	65	73	64
EB1-Fill-0.5-2-11042020	R2010361-003	70	78	68
EB2-0-2-11062020	R2010361-004	51	49	38
EB2-0-2-11062020 RE	R2010361-004	38	71	36
WAB1-0-2-11062020	R2010361-005	60	59	54
WAB1-0-2-11062020 RE	R2010361-005	117*	106	83
WCB2-0-2-11062020	R2010361-006	51	49	44
WCB2-0-2-11062020 DL	R2010361-006	78	75	63
Method Blank	RQ2013666-01	66	68	56
Method Blank	RQ2013740-01	59	54	47
Method Blank	RQ2014703-01	64	65	62
Lab Control Sample	RQ2013666-02	67	71	60
Duplicate Lab Control Sample	RQ2013666-03	68	70	59
Lab Control Sample	RQ2013740-02	49	49	46
Duplicate Lab Control Sample	RQ2013740-03	61	56	55
Lab Control Sample	RQ2014703-02	73	79	62
Duplicate Lab Control Sample	RQ2014703-03	77	64	22
WAB1-0-2-11062020 MS	RQ2014703-04	97	92	70
WAB1-0-2-11062020 DMS	RQ2014703-05	87	90	51

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010361
Project: Rochester REDI/1940100197
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3541

Sample Name	Lab Code	Nitrobenzene-d5 10-130	Phenol-d6 17-135	Terphenyl-d14 10-130
WGB-8-2-4-11032020	R2010361-001	63	55	65
EB1-Native-10-12-11042020	R2010361-002	65	72	77
EB1-Fill-0.5-2-11042020	R2010361-003	62	73	77
EB2-0-2-11062020	R2010361-004	40	37	47
EB2-0-2-11062020 RE	R2010361-004	73	44	76
WAB1-0-2-11062020	R2010361-005	63	55	53
WAB1-0-2-11062020 RE	R2010361-005	123	86	123
WCB2-0-2-11062020	R2010361-006	69	49	49
WCB2-0-2-11062020 DL	R2010361-006	64	58	71
Method Blank	RQ2013666-01	65	66	76
Method Blank	RQ2013740-01	55	54	57
Method Blank	RQ2014703-01	72	62	78
Lab Control Sample	RQ2013666-02	72	68	70
Duplicate Lab Control Sample	RQ2013666-03	70	70	75
Lab Control Sample	RQ2013740-02	52	53	48
Duplicate Lab Control Sample	RQ2013740-03	63	62	62
Lab Control Sample	RQ2014703-02	69	72	80
Duplicate Lab Control Sample	RQ2014703-03	47	35	80
WAB1-0-2-11062020 MS	RQ2014703-04	83	72	94
WAB1-0-2-11062020 DMS	RQ2014703-05	83	67	89

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20
Sample Matrix:	Soil	**Date Received:**	11/06/20
		Date Analyzed:	12/17/20
		Date Extracted:	11/30/20

Duplicate Matrix Spike Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	WAB1-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-005	**Basis:**	Dry
Analysis Method:	8270D		
Prep Method:	EPA 3541		

		Matrix Spike			Duplicate Matrix Spike					
		RQ2014703-04			RQ2014703-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4,5-Tetrachlorobenzene	180 U	288	216	133 *	250	219	114 *	10-101	14	30
1,4-Dioxane	360 U	209 J	218	96 *	202 J	222	91	13-91	3	30
2,3,4,6-Tetrachlorophenol	180 U	180	215	84	102 J	218	47	10-123	56*	30
2,4,5-Trichlorophenol	180 U	167 J	215	78	116 J	218	53	13-123	36*	30
2,4,6-Trichlorophenol	180 U	191	215	89	138 J	218	63	10-134	32*	30
2,4-Dichlorophenol	180 U	173 J	215	80	144 J	218	66	10-132	18	30
2,4-Dimethylphenol	180 U	143 J	215	67	109 J	218	50	12-127	27	30
2,4-Dinitrophenol	180 U	169 J	215	79	164 J	218	75	10-123	3	30
2,4-Dinitrotoluene	180 U	176 J	215	82	156 J	218	71	16-189	12	30
2,6-Dinitrotoluene	180 U	195	215	91	207	218	95	53-171	6	30
2-Chloronaphthalene	180 U	180	215	84	191	218	88	10-124	6	30
2-Chlorophenol	180 U	153 J	215	72	144 J	218	66	10-122	6	30
2-Methylnaphthalene	51	254	215	95	250	218	92	10-128	1	30
2-Methylphenol	180 U	172 J	215	80	137 J	218	63	12-123	23	30
2-Nitroaniline	180 U	194	215	90	190	218	87	14-169	2	30
2-Nitrophenol	180 U	182	215	85	161 J	218	74	10-163	12	30
3,3'-Dichlorobenzidine	180 U	180 U	215	0 *	180 U	218	0 *	25-121	NC	30
3- and 4-Methylphenol Coelution	180 U	175 J	215	81	136 J	218	62	14-119	25	30
3-Nitroaniline	180 U	97.4 J	215	45	69.3 J	218	32	10-104	34*	30
4,6-Dinitro-2-methylphenol	180 U	116 J	215	54	75.1 J	218	34	10-150	43*	30
4-Bromophenyl Phenyl Ether	180 U	234	215	109	209	218	96	36-165	11	30
4-Chloro-3-methylphenol	180 U	194	215	90	149 J	218	68	17-131	26	30
4-Chloroaniline	180 U	94.2 J	215	44	68.4 J	218	31	10-91	32*	30
4-Chlorophenyl Phenyl Ether	180 U	191	215	89	185	218	85	10-169	3	30
4-Nitroaniline	180 U	111 J	215	52	180 U	218	0 *	10-137	NC	30
4-Nitrophenol	180 U	171 J	215	80	180 U	218	0 *	10-124	NC	30
Acenaphthene	6.9 J	203	215	91	189	218	84	10-126	7	30
Acenaphthylene	61	240	215	84	268	218	95	10-132	11	30
Acetophenone	180 U	325	429	76	316	436	72	36-106	3	30
Anthracene	61	245	215	86	308	218	113	10-129	23	30
Atrazine	180 U	236	215	110	201	218	92	46-157	16	30
Benz(a)anthracene	170	405	215	108	680	218	232 *	10-120	51*	30
Benzaldehyde	180 U	122 J	215	57	110 J	218	50	10-131	10	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:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20
Sample Matrix:	Soil	**Date Received:**	11/06/20
		Date Analyzed:	12/17/20
		Date Extracted:	11/30/20

Duplicate Matrix Spike Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	WAB1-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-005	**Basis:**	Dry
Analysis Method:	8270D		
Prep Method:	EPA 3541		

		Matrix Spike			Duplicate Matrix Spike					
		RQ2014703-04			RQ2014703-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Benzo(a)pyrene	250	490	215	114	700	218	208 *	10-141	35*	30
Benzo(b)fluoranthene	310	472	215	77	720	218	190 *	10-132	42*	30
Benzo(g,h,i)perylene	150	447	215	138	550	218	184 *	10-149	21	30
Benzo(k)fluoranthene	99	294	215	91	422	218	148 *	10-137	36*	30
Biphenyl	180 U	196	215	91	171 J	218	78	19-133	13	30
2,2'-Oxybis(1-chloropropane)	180 U	181	215	85	160 J	218	73	10-144	13	30
Bis(2-chloroethoxy)methane	180 U	180	215	84	156 J	218	72	38-133	14	30
Bis(2-chloroethyl) Ether	180 U	180	215	84	188	218	86	30-121	4	30
Bis(2-ethylhexyl) Phthalate	3200 U	216 J	215	101	217 J	218	100	10-200	<1	30
Butyl Benzyl Phthalate	910 U	225 J	215	105	208 J	218	95	10-125	8	30
Caprolactam	180 U	198	215	92	180 U	218	0 *	36-111	NC	30
Carbazole	180 U	201	215	94	197	218	90	10-200	2	30
Chrysene	200	393	215	89	599	218	182 *	10-135	42*	30
Di-n-butyl Phthalate	2700 U	201 J	215	94	193 J	218	89	10-200	4	30
Di-n-octyl Phthalate	910 U	206 J	215	96	196 J	218	90	10-141	5	30
Dibenz(a,h)anthracene	39	278	215	111	301	218	120	10-145	8	30
Dibenzofuran	19	216	215	92	202	218	84	10-125	7	30
Diethyl Phthalate	1100 U	176 J	215	82	176 J	218	81	28-190	<1	30
Dimethyl Phthalate	910 U	182 J	215	85	179 J	218	82	17-106	1	30
Fluoranthene	300	473	215	81	967	218	306 *	10-129	69*	30
Fluorene	12	194	215	85	201	218	86	10-116	3	30
Hexachlorobenzene	35 U	200	215	93	177	218	81	10-127	12	30
Hexachlorobutadiene	180 U	203	215	95	191	218	88	10-133	6	30
Hexachlorocyclopentadiene	180 U	178 J	215	83	181	218	83	10-104	2	30
Hexachloroethane	180 U	165 J	215	77	168 J	218	77	10-118	2	30
Indeno(1,2,3-cd)pyrene	150	407	215	121	580	218	198 *	10-154	35*	30
Isophorone	180 U	158 J	215	74	145 J	218	66	37-145	9	30
N-Nitrosodi-n-propylamine	180 U	178 J	215	83	163 J	218	75	34-115	9	30
N-Nitrosodiphenylamine	180 U	212	215	99	202	218	92	16-178	5	30
Naphthalene	39 B	222	215	85	250	218	97	10-128	12	30
Nitrobenzene	35 U	173	215	80	165	218	76	10-123	5	30
Pentachlorophenol (PCP)	180 U	216	215	101 *	186	218	85	10-97	15	30
Phenanthrene	130	343	215	98	525	218	180 *	10-130	42*	30

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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:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20
Sample Matrix:	Soil	**Date Received:**	11/06/20
		Date Analyzed:	12/17/20
		Date Extracted:	11/30/20

Duplicate Matrix Spike Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	WAB1-0-2-11062020	**Units:**	ug/Kg
Lab Code:	R2010361-005	**Basis:**	Dry
Analysis Method:	8270D		
Prep Method:	EPA 3541		

		Matrix Spike			Duplicate Matrix Spike				
		RQ2014703-04			RQ2014703-05				
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Phenol	180 U	151 J	215	71	150 J	218	69	14-120	<1	30
Pyrene	240	493	215	117	915	218	309 *	10-140	60*	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:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2013666-01	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	33 U	33	14	1	11/18/20 16:39	11/9/20	
1,4-Dioxane	66 U	66	34	1	11/18/20 16:39	11/9/20	
2,3,4,6-Tetrachlorophenol	33 U	33	12	1	11/18/20 16:39	11/9/20	
2,4,5-Trichlorophenol	33 U	33	7.6	1	11/18/20 16:39	11/9/20	
2,4,6-Trichlorophenol	33 U	33	7.4	1	11/18/20 16:39	11/9/20	
2,4-Dichlorophenol	33 U	33	7.8	1	11/18/20 16:39	11/9/20	
2,4-Dimethylphenol	33 U	33	14	1	11/18/20 16:39	11/9/20	
2,4-Dinitrophenol	33 U	33	9.7	1	11/18/20 16:39	11/9/20	
2,4-Dinitrotoluene	33 U	33	15	1	11/18/20 16:39	11/9/20	
2,6-Dinitrotoluene	33 U	33	16	1	11/18/20 16:39	11/9/20	
2-Chloronaphthalene	33 U	33	13	1	11/18/20 16:39	11/9/20	
2-Chlorophenol	33 U	33	8.0	1	11/18/20 16:39	11/9/20	
2-Methylnaphthalene	6.5 U	6.5	1.9	1	11/18/20 16:39	11/9/20	
2-Methylphenol	33 U	33	7.5	1	11/18/20 16:39	11/9/20	
2-Nitroaniline	33 U	33	17	1	11/18/20 16:39	11/9/20	
2-Nitrophenol	33 U	33	7.8	1	11/18/20 16:39	11/9/20	
3,3'-Dichlorobenzidine	33 U	33	19	1	11/18/20 16:39	11/9/20	
3- and 4-Methylphenol Coelution	33 U	33	8.2	1	11/18/20 16:39	11/9/20	
3-Nitroaniline	33 U	33	7.5	1	11/18/20 16:39	11/9/20	
4,6-Dinitro-2-methylphenol	33 U	33	12	1	11/18/20 16:39	11/9/20	
4-Bromophenyl Phenyl Ether	33 U	33	14	1	11/18/20 16:39	11/9/20	
4-Chloro-3-methylphenol	33 U	33	15	1	11/18/20 16:39	11/9/20	
4-Chloroaniline	33 U	33	9.5	1	11/18/20 16:39	11/9/20	
4-Chlorophenyl Phenyl Ether	33 U	33	14	1	11/18/20 16:39	11/9/20	
4-Nitroaniline	33 U	33	17	1	11/18/20 16:39	11/9/20	
4-Nitrophenol	33 U	33	26	1	11/18/20 16:39	11/9/20	
Acenaphthene	6.5 U	6.5	1.7	1	11/18/20 16:39	11/9/20	
Acenaphthylene	6.5 U	6.5	1.8	1	11/18/20 16:39	11/9/20	
Acetophenone	33 U	33	11	1	11/18/20 16:39	11/9/20	
Anthracene	6.5 U	6.5	4.1	1	11/18/20 16:39	11/9/20	
Atrazine	33 U	33	8.7	1	11/18/20 16:39	11/9/20	
Benz(a)anthracene	6.6 U	6.6	5.0	1	11/18/20 16:39	11/9/20	
Benzaldehyde	33 U	33	15	1	11/18/20 16:39	11/9/20	
Benzo(a)pyrene	6.5 U	6.5	2.7	1	11/18/20 16:39	11/9/20	
Benzo(b)fluoranthene	6.5 U	6.5	3.5	1	11/18/20 16:39	11/9/20	
Benzo(g,h,i)perylene	6.5 U	6.5	2.8	1	11/18/20 16:39	11/9/20	
Benzo(k)fluoranthene	6.5 U	6.5	3.8	1	11/18/20 16:39	11/9/20	
Biphenyl	33 U	33	8.2	1	11/18/20 16:39	11/9/20	
2,2'-Oxybis(1-chloropropane)	33 U	33	15	1	11/18/20 16:39	11/9/20	
Bis(2-chloroethoxy)methane	33 U	33	14	1	11/18/20 16:39	11/9/20	
Bis(2-chloroethyl) Ether	33 U	33	14	1	11/18/20 16:39	11/9/20	
Bis(2-ethylhexyl) Phthalate	**36 J**	600	30	1	11/18/20 16:39	11/9/20	
Butyl Benzyl Phthalate	170 U	170	17	1	11/18/20 16:39	11/9/20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2013666-01	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Caprolactam	33 U	33	25	1	11/18/20 16:39	11/9/20	
Carbazole	33 U	33	14	1	11/18/20 16:39	11/9/20	
Chrysene	6.5 U	6.5	2.7	1	11/18/20 16:39	11/9/20	
Di-n-butyl Phthalate	500 U	500	16	1	11/18/20 16:39	11/9/20	
Di-n-octyl Phthalate	170 U	170	29	1	11/18/20 16:39	11/9/20	
Dibenz(a,h)anthracene	6.5 U	6.5	2.7	1	11/18/20 16:39	11/9/20	
Dibenzofuran	6.5 U	6.5	3.0	1	11/18/20 16:39	11/9/20	
Diethyl Phthalate	200 U	200	18	1	11/18/20 16:39	11/9/20	
Dimethyl Phthalate	170 U	170	15	1	11/18/20 16:39	11/9/20	
Fluoranthene	6.5 U	6.5	4.9	1	11/18/20 16:39	11/9/20	
Fluorene	6.5 U	6.5	1.7	1	11/18/20 16:39	11/9/20	
Hexachlorobenzene	6.5 U	6.5	2.4	1	11/18/20 16:39	11/9/20	
Hexachlorobutadiene	33 U	33	13	1	11/18/20 16:39	11/9/20	
Hexachlorocyclopentadiene	33 U	33	23	1	11/18/20 16:39	11/9/20	
Hexachloroethane	33 U	33	12	1	11/18/20 16:39	11/9/20	
Indeno(1,2,3-cd)pyrene	6.5 U	6.5	2.9	1	11/18/20 16:39	11/9/20	
Isophorone	33 U	33	15	1	11/18/20 16:39	11/9/20	
N-Nitrosodi-n-propylamine	33 U	33	12	1	11/18/20 16:39	11/9/20	
N-Nitrosodiphenylamine	33 U	33	11	1	11/18/20 16:39	11/9/20	
Naphthalene	6.5 U	6.5	2.3	1	11/18/20 16:39	11/9/20	
Nitrobenzene	6.5 U	6.5	2.7	1	11/18/20 16:39	11/9/20	
Pentachlorophenol (PCP)	33 U	33	29	1	11/18/20 16:39	11/9/20	
Phenanthrene	6.5 U	6.5	3.5	1	11/18/20 16:39	11/9/20	
Phenol	33 U	33	8.8	1	11/18/20 16:39	11/9/20	
Pyrene	6.5 U	6.5	3.2	1	11/18/20 16:39	11/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	66	19 - 107	11/18/20 16:39	
2-Fluorobiphenyl	68	10 - 115	11/18/20 16:39	
2-Fluorophenol	56	10 - 97	11/18/20 16:39	
Nitrobenzene-d5	65	10 - 130	11/18/20 16:39	
Phenol-d6	66	17 - 135	11/18/20 16:39	
Terphenyl-d14	76	10 - 130	11/18/20 16:39	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2013740-01	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	33 U	33	14	1	11/11/20 16:43	11/10/20	
1,4-Dioxane	67 U	67	35	1	11/11/20 16:43	11/10/20	
2,3,4,6-Tetrachlorophenol	33 U	33	12	1	11/11/20 16:43	11/10/20	
2,4,5-Trichlorophenol	33 U	33	7.7	1	11/11/20 16:43	11/10/20	
2,4,6-Trichlorophenol	33 U	33	7.5	1	11/11/20 16:43	11/10/20	
2,4-Dichlorophenol	33 U	33	7.9	1	11/11/20 16:43	11/10/20	
2,4-Dimethylphenol	33 U	33	14	1	11/11/20 16:43	11/10/20	
2,4-Dinitrophenol	33 U	33	9.8	1	11/11/20 16:43	11/10/20	
2,4-Dinitrotoluene	33 U	33	16	1	11/11/20 16:43	11/10/20	
2,6-Dinitrotoluene	33 U	33	16	1	11/11/20 16:43	11/10/20	
2-Chloronaphthalene	33 U	33	13	1	11/11/20 16:43	11/10/20	
2-Chlorophenol	33 U	33	8.1	1	11/11/20 16:43	11/10/20	
2-Methylnaphthalene	6.6 U	6.6	2.0	1	11/11/20 16:43	11/10/20	
2-Methylphenol	33 U	33	7.6	1	11/11/20 16:43	11/10/20	
2-Nitroaniline	33 U	33	17	1	11/11/20 16:43	11/10/20	
2-Nitrophenol	33 U	33	7.9	1	11/11/20 16:43	11/10/20	
3,3'-Dichlorobenzidine	33 U	33	19	1	11/11/20 16:43	11/10/20	
3- and 4-Methylphenol Coelution	33 U	33	8.3	1	11/11/20 16:43	11/10/20	
3-Nitroaniline	33 U	33	7.6	1	11/11/20 16:43	11/10/20	
4,6-Dinitro-2-methylphenol	33 U	33	13	1	11/11/20 16:43	11/10/20	
4-Bromophenyl Phenyl Ether	33 U	33	14	1	11/11/20 16:43	11/10/20	
4-Chloro-3-methylphenol	33 U	33	15	1	11/11/20 16:43	11/10/20	
4-Chloroaniline	33 U	33	9.6	1	11/11/20 16:43	11/10/20	
4-Chlorophenyl Phenyl Ether	33 U	33	14	1	11/11/20 16:43	11/10/20	
4-Nitroaniline	33 U	33	18	1	11/11/20 16:43	11/10/20	
4-Nitrophenol	33 U	33	26	1	11/11/20 16:43	11/10/20	
Acenaphthene	6.6 U	6.6	1.7	1	11/11/20 16:43	11/10/20	
Acenaphthylene	6.6 U	6.6	1.9	1	11/11/20 16:43	11/10/20	
Acetophenone	33 U	33	12	1	11/11/20 16:43	11/10/20	
Anthracene	6.6 U	6.6	4.1	1	11/11/20 16:43	11/10/20	
Atrazine	33 U	33	8.8	1	11/11/20 16:43	11/10/20	
Benz(a)anthracene	**7.8**	6.7	5.1	1	11/11/20 16:43	11/10/20	
Benzaldehyde	33 U	33	15	1	11/11/20 16:43	11/10/20	
Benzo(a)pyrene	**8.8**	6.6	2.8	1	11/11/20 16:43	11/10/20	
Benzo(b)fluoranthene	**7.7**	6.6	3.6	1	11/11/20 16:43	11/10/20	
Benzo(g,h,i)perylene	**6.4 J**	6.6	2.9	1	11/11/20 16:43	11/10/20	
Benzo(k)fluoranthene	6.6 U	6.6	3.9	1	11/11/20 16:43	11/10/20	
Biphenyl	33 U	33	8.3	1	11/11/20 16:43	11/10/20	
2,2'-Oxybis(1-chloropropane)	33 U	33	15	1	11/11/20 16:43	11/10/20	
Bis(2-chloroethoxy)methane	33 U	33	14	1	11/11/20 16:43	11/10/20	
Bis(2-chloroethyl) Ether	33 U	33	14	1	11/11/20 16:43	11/10/20	
Bis(2-ethylhexyl) Phthalate	600 U	600	31	1	11/11/20 16:43	11/10/20	
Butyl Benzyl Phthalate	170 U	170	17	1	11/11/20 16:43	11/10/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2013740-01	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Caprolactam	33 U	33	26	1	11/11/20 16:43	11/10/20	
Carbazole	33 U	33	14	1	11/11/20 16:43	11/10/20	
Chrysene	**5.0 J**	6.6	2.8	1	11/11/20 16:43	11/10/20	
Di-n-butyl Phthalate	500 U	500	17	1	11/11/20 16:43	11/10/20	
Di-n-octyl Phthalate	170 U	170	30	1	11/11/20 16:43	11/10/20	
Dibenz(a,h)anthracene	6.6 U	6.6	2.8	1	11/11/20 16:43	11/10/20	
Dibenzofuran	6.6 U	6.6	3.0	1	11/11/20 16:43	11/10/20	
Diethyl Phthalate	200 U	200	19	1	11/11/20 16:43	11/10/20	
Dimethyl Phthalate	170 U	170	15	1	11/11/20 16:43	11/10/20	
Fluoranthene	**13**	6.6	5.0	1	11/11/20 16:43	11/10/20	
Fluorene	6.6 U	6.6	1.8	1	11/11/20 16:43	11/10/20	
Hexachlorobenzene	6.7 U	6.7	2.4	1	11/11/20 16:43	11/10/20	
Hexachlorobutadiene	33 U	33	14	1	11/11/20 16:43	11/10/20	
Hexachlorocyclopentadiene	33 U	33	24	1	11/11/20 16:43	11/10/20	
Hexachloroethane	33 U	33	12	1	11/11/20 16:43	11/10/20	
Indeno(1,2,3-cd)pyrene	**5.7 J**	6.6	3.0	1	11/11/20 16:43	11/10/20	
Isophorone	33 U	33	15	1	11/11/20 16:43	11/10/20	
N-Nitrosodi-n-propylamine	33 U	33	13	1	11/11/20 16:43	11/10/20	
N-Nitrosodiphenylamine	33 U	33	11	1	11/11/20 16:43	11/10/20	
Naphthalene	**12**	6.6	2.4	1	11/11/20 16:43	11/10/20	
Nitrobenzene	6.6 U	6.6	2.8	1	11/11/20 16:43	11/10/20	
Pentachlorophenol (PCP)	33 U	33	29	1	11/11/20 16:43	11/10/20	
Phenanthrene	**4.2 J**	6.6	3.6	1	11/11/20 16:43	11/10/20	
Phenol	33 U	33	8.9	1	11/11/20 16:43	11/10/20	
Pyrene	**9.3**	6.6	3.3	1	11/11/20 16:43	11/10/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	59	19 - 107	11/11/20 16:43	
2-Fluorobiphenyl	54	10 - 115	11/11/20 16:43	
2-Fluorophenol	47	10 - 97	11/11/20 16:43	
Nitrobenzene-d5	55	10 - 130	11/11/20 16:43	
Phenol-d6	54	17 - 135	11/11/20 16:43	
Terphenyl-d14	57	10 - 130	11/11/20 16:43	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2014703-01	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	33 U	33	14	1	12/11/20 04:09	11/30/20	
1,4-Dioxane	67 U	67	34	1	12/11/20 04:09	11/30/20	
2,3,4,6-Tetrachlorophenol	33 U	33	12	1	12/11/20 04:09	11/30/20	
2,4,5-Trichlorophenol	33 U	33	7.6	1	12/11/20 04:09	11/30/20	
2,4,6-Trichlorophenol	33 U	33	7.4	1	12/11/20 04:09	11/30/20	
2,4-Dichlorophenol	33 U	33	7.8	1	12/11/20 04:09	11/30/20	
2,4-Dimethylphenol	33 U	33	14	1	12/11/20 04:09	11/30/20	
2,4-Dinitrophenol	33 U	33	9.7	1	12/11/20 04:09	11/30/20	
2,4-Dinitrotoluene	33 U	33	15	1	12/11/20 04:09	11/30/20	
2,6-Dinitrotoluene	33 U	33	16	1	12/11/20 04:09	11/30/20	
2-Chloronaphthalene	33 U	33	13	1	12/11/20 04:09	11/30/20	
2-Chlorophenol	33 U	33	8.0	1	12/11/20 04:09	11/30/20	
2-Methylnaphthalene	6.6 U	6.6	1.9	1	12/11/20 04:09	11/30/20	
2-Methylphenol	33 U	33	7.5	1	12/11/20 04:09	11/30/20	
2-Nitroaniline	33 U	33	17	1	12/11/20 04:09	11/30/20	
2-Nitrophenol	33 U	33	7.8	1	12/11/20 04:09	11/30/20	
3,3'-Dichlorobenzidine	33 U	33	19	1	12/11/20 04:09	11/30/20	
3- and 4-Methylphenol Coelution	33 U	33	8.2	1	12/11/20 04:09	11/30/20	
3-Nitroaniline	33 U	33	7.5	1	12/11/20 04:09	11/30/20	
4,6-Dinitro-2-methylphenol	33 U	33	12	1	12/11/20 04:09	11/30/20	
4-Bromophenyl Phenyl Ether	33 U	33	14	1	12/11/20 04:09	11/30/20	
4-Chloro-3-methylphenol	33 U	33	15	1	12/11/20 04:09	11/30/20	
4-Chloroaniline	33 U	33	9.5	1	12/11/20 04:09	11/30/20	
4-Chlorophenyl Phenyl Ether	33 U	33	14	1	12/11/20 04:09	11/30/20	
4-Nitroaniline	33 U	33	17	1	12/11/20 04:09	11/30/20	
4-Nitrophenol	33 U	33	26	1	12/11/20 04:09	11/30/20	
Acenaphthene	6.6 U	6.6	1.7	1	12/11/20 04:09	11/30/20	
Acenaphthylene	6.6 U	6.6	1.8	1	12/11/20 04:09	11/30/20	
Acetophenone	33 U	33	11	1	12/11/20 04:09	11/30/20	
Anthracene	6.6 U	6.6	4.1	1	12/11/20 04:09	11/30/20	
Atrazine	33 U	33	8.7	1	12/11/20 04:09	11/30/20	
Benz(a)anthracene	6.6 U	6.6	5.0	1	12/11/20 04:09	11/30/20	
Benzaldehyde	33 U	33	15	1	12/11/20 04:09	11/30/20	
Benzo(a)pyrene	6.6 U	6.6	2.7	1	12/11/20 04:09	11/30/20	
Benzo(b)fluoranthene	6.6 U	6.6	3.5	1	12/11/20 04:09	11/30/20	
Benzo(g,h,i)perylene	6.6 U	6.6	2.8	1	12/11/20 04:09	11/30/20	
Benzo(k)fluoranthene	6.6 U	6.6	3.8	1	12/11/20 04:09	11/30/20	
Biphenyl	33 U	33	8.2	1	12/11/20 04:09	11/30/20	
2,2'-Oxybis(1-chloropropane)	33 U	33	15	1	12/11/20 04:09	11/30/20	
Bis(2-chloroethoxy)methane	33 U	33	14	1	12/11/20 04:09	11/30/20	
Bis(2-chloroethyl) Ether	33 U	33	14	1	12/11/20 04:09	11/30/20	
Bis(2-ethylhexyl) Phthalate	**37 J**	600	30	1	12/11/20 04:09	11/30/20	
Butyl Benzyl Phthalate	170 U	170	17	1	12/11/20 04:09	11/30/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2014703-01	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Caprolactam	33 U	33	25	1	12/11/20 04:09	11/30/20	
Carbazole	33 U	33	14	1	12/11/20 04:09	11/30/20	
Chrysene	6.6 U	6.6	2.7	1	12/11/20 04:09	11/30/20	
Di-n-butyl Phthalate	500 U	500	16	1	12/11/20 04:09	11/30/20	
Di-n-octyl Phthalate	170 U	170	29	1	12/11/20 04:09	11/30/20	
Dibenz(a,h)anthracene	6.6 U	6.6	2.7	1	12/11/20 04:09	11/30/20	
Dibenzofuran	6.6 U	6.6	3.0	1	12/11/20 04:09	11/30/20	
Diethyl Phthalate	200 U	200	18	1	12/11/20 04:09	11/30/20	
Dimethyl Phthalate	170 U	170	15	1	12/11/20 04:09	11/30/20	
Fluoranthene	6.6 U	6.6	4.9	1	12/11/20 04:09	11/30/20	
Fluorene	6.6 U	6.6	1.7	1	12/11/20 04:09	11/30/20	
Hexachlorobenzene	6.6 U	6.6	2.4	1	12/11/20 04:09	11/30/20	
Hexachlorobutadiene	33 U	33	13	1	12/11/20 04:09	11/30/20	
Hexachlorocyclopentadiene	33 U	33	23	1	12/11/20 04:09	11/30/20	
Hexachloroethane	33 U	33	12	1	12/11/20 04:09	11/30/20	
Indeno(1,2,3-cd)pyrene	6.6 U	6.6	2.9	1	12/11/20 04:09	11/30/20	
Isophorone	33 U	33	15	1	12/11/20 04:09	11/30/20	
N-Nitrosodi-n-propylamine	33 U	33	12	1	12/11/20 04:09	11/30/20	
N-Nitrosodiphenylamine	33 U	33	11	1	12/11/20 04:09	11/30/20	
Naphthalene	6.6 U	6.6	2.3	1	12/11/20 04:09	11/30/20	
Nitrobenzene	6.6 U	6.6	2.7	1	12/11/20 04:09	11/30/20	
Pentachlorophenol (PCP)	33 U	33	29	1	12/11/20 04:09	11/30/20	
Phenanthrene	6.6 U	6.6	3.5	1	12/11/20 04:09	11/30/20	
Phenol	33 U	33	8.8	1	12/11/20 04:09	11/30/20	
Pyrene	6.6 U	6.6	3.2	1	12/11/20 04:09	11/30/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	64	19 - 107	12/11/20 04:09	
2-Fluorobiphenyl	65	10 - 115	12/11/20 04:09	
2-Fluorophenol	62	10 - 97	12/11/20 04:09	
Nitrobenzene-d5	72	10 - 130	12/11/20 04:09	
Phenol-d6	62	17 - 135	12/11/20 04:09	
Terphenyl-d14	78	10 - 130	12/11/20 04:09	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010361
Project: Rochester REDI/1940100197 **Date Analyzed:** 11/18/20
Sample Matrix: Soil

Duplicate Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2013666-02			RQ2013666-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4,5-Tetrachlorobenzene	8270D	152	205	74	156	198	79	31-127	3	30
1,4-Dioxane	8270D	64.7 J	207	31	58.1 J	200	29	24-101	11	30
2,3,4,6-Tetrachlorophenol	8270D	132	204	65	127	197	65	37-156	3	30
2,4,5-Trichlorophenol	8270D	131	204	64	132	197	67	16-123	<1	30
2,4,6-Trichlorophenol	8270D	129	204	64	126	197	64	18-126	3	30
2,4-Dichlorophenol	8270D	134	204	66	140	197	71	17-128	4	30
2,4-Dimethylphenol	8270D	136	204	67	142	197	72	17-125	4	30
2,4-Dinitrophenol	8270D	61.7	204	30	108	197	55	10-118	55*	30
2,4-Dinitrotoluene	8270D	145	204	71	145	197	74	16-189	<1	30
2,6-Dinitrotoluene	8270D	142	204	70	147	197	75	53-131	4	30
2-Chloronaphthalene	8270D	136	204	67	139	197	70	13-116	2	30
2-Chlorophenol	8270D	124	204	61	122	197	62	10-122	1	30
2-Methylnaphthalene	8270D	139	204	68	141	197	72	13-116	1	30
2-Methylphenol	8270D	133	204	65	129	197	66	12-123	3	30
2-Nitroaniline	8270D	147	204	72	152	197	77	35-126	4	30
2-Nitrophenol	8270D	126	204	62	129	197	66	10-152	3	30
3,3'-Dichlorobenzidine	8270D	136	204	67	137	197	70	25-121	1	30
3- and 4-Methylphenol Coelution	8270D	132	204	65	127	197	64	14-119	4	30
3-Nitroaniline	8270D	127	204	62	139	197	70 *	22-69	9	30
4,6-Dinitro-2-methylphenol	8270D	115	204	56	126	197	64	10-150	9	30
4-Bromophenyl Phenyl Ether	8270D	151	204	74	151	197	77	36-165	<1	30
4-Chloro-3-methylphenol	8270D	138	204	68	140	197	71	23-128	2	30
4-Chloroaniline	8270D	137	204	67	141	197	72	12-78	3	30
4-Chlorophenyl Phenyl Ether	8270D	143	204	70	141	197	72	34-151	1	30
4-Nitroaniline	8270D	140	204	69	148	197	75	27-102	5	30
4-Nitrophenol	8270D	123	204	60	134	197	68	12-115	9	30
Acenaphthene	8270D	143	204	70	141	197	72	17-115	1	30
Acenaphthylene	8270D	146	204	72	144	197	73	15-123	1	30
Acetophenone	8270D	259	408	63	269	394	68	36-106	4	30
Anthracene	8270D	146	204	72	148	197	75	37-117	2	30
Atrazine	8270D	176	204	86	178	197	90	46-157	1	30
Benz(a)anthracene	8270D	131	204	64	130	197	66	39-105	1	30
Benzaldehyde	8270D	83.5	204	41	86.5	197	44	10-131	4	30

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Analyzed: 11/18/20

Duplicate Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2013666-02			RQ2013666-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Benzo(a)pyrene	8270D	168	204	82	166	197	84	38-130	<1	30
Benzo(b)fluoranthene	8270D	131	204	64	138	197	70	36-120	5	30
Benzo(g,h,i)perylene	8270D	144	204	71	147	197	75	36-140	2	30
Benzo(k)fluoranthene	8270D	145	204	71	146	197	74	40-125	<1	30
Biphenyl	8270D	141	204	69	144	197	73	19-133	2	30
2,2'-Oxybis(1-chloropropane)	8270D	130	204	64	133	197	68	32-112	2	30
Bis(2-chloroethoxy)methane	8270D	145	204	71	143	197	73	38-133	1	30
Bis(2-chloroethyl) Ether	8270D	139	204	68	138	197	70	30-121	<1	30
Bis(2-ethylhexyl) Phthalate	8270D	179 J	204	88	170 J	197	86	23-200	5	30
Butyl Benzyl Phthalate	8270D	143 J	204	70	143 J	197	73	41-117	<1	30
Caprolactam	8270D	153	204	75	161	197	82	36-111	5	30
Carbazole	8270D	170	204	83	174	197	88	36-128	2	30
Chrysene	8270D	140	204	69	140	197	71	40-120	<1	30
Di-n-butyl Phthalate	8270D	148 J	204	73	150 J	197	76	10-200	2	30
Di-n-octyl Phthalate	8270D	146 J	204	72	145 J	197	74	39-130	<1	30
Dibenz(a,h)anthracene	8270D	150	204	74	152	197	77	22-146	1	30
Dibenzofuran	8270D	139	204	68	140	197	71	22-114	1	30
Diethyl Phthalate	8270D	134 J	204	66	135 J	197	68	28-190	<1	30
Dimethyl Phthalate	8270D	141 J	204	69	146 J	197	74	30-106	4	30
Fluoranthene	8270D	141	204	69	146	197	74	41-110	3	30
Fluorene	8270D	142	204	70	143	197	73	25-106	<1	30
Hexachlorobenzene	8270D	139	204	68	138	197	70	36-122	<1	30
Hexachlorobutadiene	8270D	140	204	69	146	197	74	10-120	4	30
Hexachlorocyclopentadiene	8270D	112	204	55	123	197	62	10-104	9	30
Hexachloroethane	8270D	121	204	60	125	197	63	10-110	3	30
Indeno(1,2,3-cd)pyrene	8270D	140	204	68	141	197	72	41-137	1	30
Isophorone	8270D	121	204	59	129	197	65	37-145	6	30
N-Nitrosodi-n-propylamine	8270D	147	204	72	143	197	72	34-115	3	30
N-Nitrosodiphenylamine	8270D	167	204	82	173	197	88	48-135	4	30
Naphthalene	8270D	135	204	66	144	197	73	10-115	6	30
Nitrobenzene	8270D	129	204	63	130	197	66	10-115	1	30
Pentachlorophenol (PCP)	8270D	134	204	66	153	197	78	10-97	14	30
Phenanthrene	8270D	141	204	69	143	197	73	37-112	2	30

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Analyzed: 11/18/20

Duplicate Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2013666-02			RQ2013666-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Phenol	8270D	136	204	67	134	197	68	14-120	1	30
Pyrene	8270D	144	204	71	146	197	74	33-124	1	30

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010361
Project: Rochester REDI/1940100197 **Date Analyzed:** 11/11/20
Sample Matrix: Soil

Duplicate Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2013740-02			RQ2013740-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4,5-Tetrachlorobenzene	8270D	104	197	53	125	198	63	31-127	18	30
1,4-Dioxane	8270D	48.3 J	199	24	52.6 J	200	26	24-101	9	30
2,3,4,6-Tetrachlorophenol	8270D	88.1	196	45	117	197	59	37-156	28	30
2,4,5-Trichlorophenol	8270D	88.5	196	45	114	197	58	16-123	25	30
2,4,6-Trichlorophenol	8270D	89.3	196	46	113	197	58	18-126	24	30
2,4-Dichlorophenol	8270D	97.6	196	50	109	197	55	17-128	11	30
2,4-Dimethylphenol	8270D	99.3	196	51	121	197	62	17-125	20	30
2,4-Dinitrophenol	8270D	60.8	196	31	86.3	197	44	10-118	35*	30
2,4-Dinitrotoluene	8270D	104	196	53	131	197	67	16-189	23	30
2,6-Dinitrotoluene	8270D	98.6	196	50 *	124	197	63	53-131	23	30
2-Chloronaphthalene	8270D	90.2	196	46	110	197	56	13-116	20	30
2-Chlorophenol	8270D	96.0	196	49	118	197	60	10-122	21	30
2-Methylnaphthalene	8270D	100	196	51	124	197	63	13-116	21	30
2-Methylphenol	8270D	101	196	52	126	197	64	12-123	22	30
2-Nitroaniline	8270D	104	196	53	142	197	72	35-126	31*	30
2-Nitrophenol	8270D	107	196	54	135	197	68	10-152	23	30
3,3'-Dichlorobenzidine	8270D	108	196	55	148	197	75	25-121	31*	30
3- and 4-Methylphenol Coelution	8270D	109	196	55	126	197	64	14-119	15	30
3-Nitroaniline	8270D	82.8	196	42	110	197	56	22-69	28	30
4,6-Dinitro-2-methylphenol	8270D	89.4	196	46	133	197	68	10-150	39*	30
4-Bromophenyl Phenyl Ether	8270D	90.8	196	46	116	197	59	36-165	25	30
4-Chloro-3-methylphenol	8270D	108	196	55	130	197	66	23-128	18	30
4-Chloroaniline	8270D	73.8	196	38	97.6	197	50	12-78	28	30
4-Chlorophenyl Phenyl Ether	8270D	88.0	196	45	115	197	59	34-151	27	30
4-Nitroaniline	8270D	99.8	196	51	129	197	66	27-102	26	30
4-Nitrophenol	8270D	90.5	196	46	128	197	65	12-115	34*	30
Acenaphthene	8270D	97.8	196	50	122	197	62	17-115	22	30
Acenaphthylene	8270D	104	196	53	123	197	63	15-123	17	30
Acetophenone	8270D	201	392	51	244	393	62	36-106	20	30
Anthracene	8270D	92.5	196	47	119	197	61	37-117	25	30
Atrazine	8270D	121	196	62	150	197	76	46-157	21	30
Benz(a)anthracene	8270D	87.0	196	44	126	197	64	39-105	36*	30
Benzaldehyde	8270D	45.4	196	23	53.0	197	27	10-131	15	30

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Analyzed: 11/11/20

Duplicate Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2013740-02			RQ2013740-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Benzo(a)pyrene	8270D	113	196	57	165	197	84	38-130	38*	30
Benzo(b)fluoranthene	8270D	88.5	196	45	128	197	65	36-120	37*	30
Benzo(g,h,i)perylene	8270D	98.2	196	50	137	197	70	36-140	33*	30
Benzo(k)fluoranthene	8270D	93.1	196	47	125	197	63	40-125	29	30
Biphenyl	8270D	96.0	196	49	115	197	59	19-133	18	30
2,2'-Oxybis(1-chloropropane)	8270D	91.4	196	47	117	197	59	32-112	24	30
Bis(2-chloroethoxy)methane	8270D	97.6	196	50	130	197	66	38-133	28	30
Bis(2-chloroethyl) Ether	8270D	103	196	52	125	197	64	30-121	20	30
Bis(2-ethylhexyl) Phthalate	8270D	126 J	196	64	174 J	197	89	23-200	32*	30
Butyl Benzyl Phthalate	8270D	103 J	196	53	140 J	197	71	41-117	30	30
Caprolactam	8270D	121	196	62	156	197	79	36-111	25	30
Carbazole	8270D	109	196	56	143	197	73	36-128	27	30
Chrysene	8270D	91.8	196	47	132	197	67	40-120	36*	30
Di-n-butyl Phthalate	8270D	103 J	196	53	135 J	197	69	10-200	26	30
Di-n-octyl Phthalate	8270D	103 J	196	52	149 J	197	76	39-130	37*	30
Dibenz(a,h)anthracene	8270D	104	196	53	143	197	73	22-146	31*	30
Dibenzofuran	8270D	97.1	196	50	120	197	61	22-114	21	30
Diethyl Phthalate	8270D	88.7 J	196	45	118 J	197	60	28-190	28	30
Dimethyl Phthalate	8270D	87.6 J	196	45	115 J	197	58	30-106	27	30
Fluoranthene	8270D	97.1	196	50	148	197	75	41-110	41*	30
Fluorene	8270D	93.1	196	48	116	197	59	25-106	22	30
Hexachlorobenzene	8270D	89.6	196	46	113	197	57	36-122	23	30
Hexachlorobutadiene	8270D	98.6	196	50	123	197	63	10-120	22	30
Hexachlorocyclopentadiene	8270D	47.9	196	24	66.2	197	34	10-104	32*	30
Hexachloroethane	8270D	94.9	196	48	120	197	61	10-110	24	30
Indeno(1,2,3-cd)pyrene	8270D	98.0	196	50	141	197	72	41-137	36*	30
Isophorone	8270D	84.7	196	43	101	197	51	37-145	17	30
N-Nitrosodi-n-propylamine	8270D	108	196	55	134	197	68	34-115	22	30
N-Nitrosodiphenylamine	8270D	104	196	53	138	197	70	48-135	28	30
Naphthalene	8270D	101	196	51	120	197	61	10-115	17	30
Nitrobenzene	8270D	98.9	196	50	121	197	62	10-115	20	30
Pentachlorophenol (PCP)	8270D	73.1	196	37	95.4	197	49	10-97	26	30
Phenanthrene	8270D	88.1	196	45	117	197	59	37-112	28	30

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Analyzed: 11/11/20

Duplicate Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2013740-02			RQ2013740-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Phenol	8270D	101	196	51	116	197	59	14-120	15	30
Pyrene	8270D	97.4	196	50	150	197	76	33-124	42*	30

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Analyzed: 12/11/20

Duplicate Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2014703-02			RQ2014703-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4,5-Tetrachlorobenzene	8270D	211	204	104	160	203	79	31-127	27	30
1,4-Dioxane	8270D	166	206	81	44.3 J	205	22 *	24-101	116*	30
2,3,4,6-Tetrachlorophenol	8270D	124	203	61	142	202	70	37-156	14	30
2,4,5-Trichlorophenol	8270D	138	203	68	124	202	61	16-123	11	30
2,4,6-Trichlorophenol	8270D	121	203	60	106	202	53	18-126	13	30
2,4-Dichlorophenol	8270D	137	203	67	93.5	202	46	17-128	37*	30
2,4-Dimethylphenol	8270D	143	203	70	101	202	50	17-125	34*	30
2,4-Dinitrophenol	8270D	35.3	203	17	70.8	202	35	10-118	67*	30
2,4-Dinitrotoluene	8270D	162	203	80	168	202	83	16-189	3	30
2,6-Dinitrotoluene	8270D	179	203	88	172	202	85	53-131	4	30
2-Chloronaphthalene	8270D	156	203	77	127	202	63	13-116	21	30
2-Chlorophenol	8270D	131	203	65	55.5	202	27	10-122	81*	30
2-Methylnaphthalene	8270D	157	203	77	122	202	60	13-116	25	30
2-Methylphenol	8270D	154	203	76	84.1	202	42	12-123	59*	30
2-Nitroaniline	8270D	158	203	78	161	202	80	35-126	2	30
2-Nitrophenol	8270D	134	203	66	84.8	202	42	10-152	45*	30
3,3'-Dichlorobenzidine	8270D	129	203	64	125	202	62	25-121	3	30
3- and 4-Methylphenol Coelution	8270D	150	203	74	94.9	202	47	14-119	45*	30
3-Nitroaniline	8270D	121	203	60	121	202	60	22-69	<1	30
4,6-Dinitro-2-methylphenol	8270D	93.2	203	46	111	202	55	10-150	17	30
4-Bromophenyl Phenyl Ether	8270D	171	203	84	166	202	82	36-165	3	30
4-Chloro-3-methylphenol	8270D	148	203	73	125	202	62	23-128	17	30
4-Chloroaniline	8270D	89.4	203	44	87.7	202	43	12-78	2	30
4-Chlorophenyl Phenyl Ether	8270D	152	203	75	155	202	77	34-151	2	30
4-Nitroaniline	8270D	143	203	70	138	202	68	27-102	3	30
4-Nitrophenol	8270D	95.3	203	47	139	202	69	12-115	38*	30
Acenaphthene	8270D	161	203	80	144	202	71	17-115	11	30
Acenaphthylene	8270D	173	203	86	145	202	72	15-123	18	30
Acetophenone	8270D	278	405	69	183	404	45	36-106	41*	30
Anthracene	8270D	172	203	85	163	202	81	37-117	5	30
Atrazine	8270D	169	203	83	143	202	71	46-157	16	30
Benz(a)anthracene	8270D	153	203	76	159	202	79	39-105	4	30
Benzaldehyde	8270D	115	203	57	49.3	202	24	10-131	80*	30

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Analyzed: 12/11/20

Duplicate Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2014703-02			RQ2014703-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Benzo(a)pyrene	8270D	211	203	104	224	202	111	38-130	6	30
Benzo(b)fluoranthene	8270D	159	203	78	178	202	88	36-120	12	30
Benzo(g,h,i)perylene	8270D	186	203	92	202	202	100	36-140	8	30
Benzo(k)fluoranthene	8270D	178	203	88	187	202	92	40-125	5	30
Biphenyl	8270D	138	203	68	122	202	60	19-133	12	30
2,2'-Oxybis(1-chloropropane)	8270D	152	203	75	83.4	202	41	32-112	58*	30
Bis(2-chloroethoxy)methane	8270D	159	203	78	124	202	62	38-133	24	30
Bis(2-chloroethyl) Ether	8270D	152	203	75	76.1	202	38	30-121	66*	30
Bis(2-ethylhexyl) Phthalate	8270D	199 J	203	98	214 J	202	106	23-200	7	30
Butyl Benzyl Phthalate	8270D	163 J	203	81	175	202	86	41-117	7	30
Caprolactam	8270D	134	203	66	139	202	69	36-111	3	30
Carbazole	8270D	165	203	82	154	202	76	36-128	7	30
Chrysene	8270D	155	203	77	164	202	81	40-120	5	30
Di-n-butyl Phthalate	8270D	182 J	203	90	173 J	202	85	10-200	5	30
Di-n-octyl Phthalate	8270D	175	203	86	194	202	96	39-130	10	30
Dibenz(a,h)anthracene	8270D	188	203	93	193	202	95	22-146	2	30
Dibenzofuran	8270D	160	203	79	144	202	71	22-114	10	30
Diethyl Phthalate	8270D	165 J	203	82	167 J	202	83	28-190	1	30
Dimethyl Phthalate	8270D	167 J	203	83	166 J	202	82	30-106	<1	30
Fluoranthene	8270D	165	203	82	166	202	82	41-110	<1	30
Fluorene	8270D	158	203	78	158	202	78	25-106	<1	30
Hexachlorobenzene	8270D	163	203	80	168	202	83	36-122	3	30
Hexachlorobutadiene	8270D	158	203	78	85.8	202	42	10-120	59*	30
Hexachlorocyclopentadiene	8270D	54.1	203	27	29.8 J	202	15	10-104	58*	30
Hexachloroethane	8270D	129	203	63	47.8	202	24	10-110	92*	30
Indeno(1,2,3-cd)pyrene	8270D	177	203	87	184	202	91	41-137	4	30
Isophorone	8270D	133	203	66	110	202	54	37-145	19	30
N-Nitrosodi-n-propylamine	8270D	151	203	74	118	202	59	34-115	24	30
N-Nitrosodiphenylamine	8270D	165	203	82	154	202	76	48-135	7	30
Naphthalene	8270D	153	203	75	97.2	202	48	10-115	45*	30
Nitrobenzene	8270D	153	203	75	85.9	202	42	10-115	56*	30
Pentachlorophenol (PCP)	8270D	64.8	203	32	87.6	202	43	10-97	30	30
Phenanthrene	8270D	154	203	76	153	202	75	37-112	<1	30

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Analyzed: 12/11/20

Duplicate Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2014703-02			RQ2014703-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Phenol	8270D	133	203	66	72.0	202	36	14-120	60*	30
Pyrene	8270D	174	203	86	186	202	92	33-124	7	30

Semivolatile Organic Compounds by GC

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: Ramboll US Corp (Syracuse) **Service Request:** R2010361
Project: Rochester REDI/1940100197
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Extraction Method: EPA 3541

Sample Name	Lab Code	Decachlorobiphenyl 10-145	Tetrachloro-m-xylene 10-123
WGB-8-2-4-11032020	R2010361-001	69	65
EB1-Native-10-12-11042020	R2010361-002	40	49
EB1-Fill-0.5-2-11042020	R2010361-003	15	27
EB2-0-2-11062020	R2010361-004	38	40
WAB1-0-2-11062020	R2010361-005	23	24
WCB2-0-2-11062020	R2010361-006	49	53
Method Blank	RQ2013661-01	54	49
Method Blank	RQ2013843-01	58	57
Lab Control Sample	RQ2013661-02	60	55
Duplicate Lab Control Sample	RQ2013661-03	57	48
Lab Control Sample	RQ2013843-02	58	57
Duplicate Lab Control Sample	RQ2013843-03	56	55
WGB-8-2-4-11032020 MS	RQ2013661-06	41	53
WGB-8-2-4-11032020 DMS	RQ2013661-07	43	53

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/03/20
Sample Matrix:	Soil	**Date Received:**	11/03/20
		Date Analyzed:	11/16/20
		Date Extracted:	11/9/20

Duplicate Matrix Spike Summary
Organochlorine Pesticides by Gas Chromatography

Sample Name:	WGB-8-2-4-11032020	**Units:**	ug/Kg
Lab Code:	R2010361-001	**Basis:**	Dry
Analysis Method:	8081B		
Prep Method:	EPA 3541		

		Matrix Spike RQ2013661-06			Duplicate Matrix Spike RQ2013661-07					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
4,4'-DDD	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	10-165	NC	30
4,4'-DDE	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	10-200	NC	30
4,4'-DDT	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	10-200	NC	30
Aldrin	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	10-171	NC	30
Dieldrin	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	10-200	NC	30
Endosulfan I	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	10-174	NC	30
Endosulfan II	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	10-185	NC	30
Endosulfan Sulfate	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	10-155	NC	30
Endrin	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	10-200	NC	30
Endrin Aldehyde	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	10-148	NC	30
Endrin Ketone	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	10-197	NC	30
Heptachlor	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	12-160	NC	30
Heptachlor Epoxide	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	10-180	NC	30
Methoxychlor	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	10-200	NC	30
alpha-BHC	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	10-149	NC	30
alpha-Chlordane	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	10-175	NC	30
beta-BHC	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	10-162	NC	30
delta-BHC	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	10-157	NC	30
gamma-BHC (Lindane)	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	10-170	NC	30
gamma-Chlordane	19 U	19 DU	7.33	0 *	19 DU	7.45	0 *	10-176	NC	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:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2013661-01	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	
4,4'-DDE	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	
4,4'-DDT	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	
Aldrin	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	
Dieldrin	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	
Endosulfan I	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	
Endosulfan II	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	
Endosulfan Sulfate	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	
Endrin	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	
Endrin Aldehyde	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	
Endrin Ketone	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	
Heptachlor	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	
Heptachlor Epoxide	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	
Methoxychlor	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	
Toxaphene	33 U	33	20	1	11/13/20 17:08	11/9/20	
alpha-BHC	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	
alpha-Chlordane	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	
beta-BHC	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	
delta-BHC	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	
gamma-BHC (Lindane)	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	
gamma-Chlordane	1.7 U	1.7	0.85	1	11/13/20 17:08	11/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	54	10 - 145	11/13/20 17:08	
Tetrachloro-m-xylene	49	10 - 123	11/13/20 17:08	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2013843-01	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	
4,4'-DDE	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	
4,4'-DDT	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	
Aldrin	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	
Dieldrin	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	
Endosulfan I	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	
Endosulfan II	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	
Endosulfan Sulfate	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	
Endrin	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	
Endrin Aldehyde	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	
Endrin Ketone	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	
Heptachlor	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	
Heptachlor Epoxide	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	
Methoxychlor	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	
Toxaphene	33 U	33	19	1	11/17/20 11:52	11/11/20	
alpha-BHC	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	
alpha-Chlordane	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	
beta-BHC	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	
delta-BHC	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	
gamma-BHC (Lindane)	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	
gamma-Chlordane	1.7 U	1.7	0.84	1	11/17/20 11:52	11/11/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	58	10 - 145	11/17/20 11:52	
Tetrachloro-m-xylene	57	10 - 123	11/17/20 11:52	

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Analyzed: 11/13/20

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography

Units:ug/Kg
Basis: Dry

			Lab Control Sample			Duplicate Lab Control Sample				
			RQ2013661-02			RQ2013661-03				
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
4,4'-DDD	8081B	4.12	6.61	62	3.41	6.77	50	33-149	19	30
4,4'-DDE	8081B	4.04	6.61	61	3.47	6.77	51	38-147	15	30
4,4'-DDT	8081B	3.52	6.61	53	3.21	6.77	47	37-146	9	30
Aldrin	8081B	3.83	6.61	58	2.84	6.77	42	25-146	30	30
Dieldrin	8081B	4.01	6.61	61	0.86 U	6.77	0 *	40-140	NC	30
Endosulfan I	8081B	3.91	6.61	59	0.86 U	6.77	0 *	35-116	NC	30
Endosulfan II	8081B	3.92	6.61	59	0.86 U	6.77	0 *	39-122	NC	30
Endosulfan Sulfate	8081B	3.93	6.61	59	2.34	6.77	35	31-132	51*	30
Endrin	8081B	4.08	6.61	62	0.86 U	6.77	0 *	40-144	NC	30
Endrin Aldehyde	8081B	3.53	6.61	53	0.86 U	6.77	0 *	10-109	NC	30
Endrin Ketone	8081B	4.03	6.61	61	0.86 U	6.77	0 *	38-122	NC	30
Heptachlor	8081B	3.55	6.61	54	3.09	6.77	46	34-142	14	30
Heptachlor Epoxide	8081B	4.01	6.61	61	2.65	6.77	39	37-113	41*	30
Methoxychlor	8081B	3.47	6.61	53	0.86 U	6.77	0 *	41-152	NC	30
alpha-BHC	8081B	4.06	6.61	61	3.48	6.77	51	28-145	15	30
alpha-Chlordane	8081B	3.94	6.61	60	3.56	6.77	53	37-114	10	30
beta-BHC	8081B	4.15	6.61	63	3.17	6.77	47	38-144	27	30
delta-BHC	8081B	4.34	6.61	66	3.42	6.77	50	30-153	24	30
gamma-BHC (Lindane)	8081B	4.03	6.61	61	3.02	6.77	45	32-145	29	30
gamma-Chlordane	8081B	4.29	6.61	65	3.34	6.77	49	34-123	25	30

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Analyzed: 11/17/20

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2013843-02			RQ2013843-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
4,4'-DDD	8081B	4.13	6.79	61	3.85	6.72	57	33-149	7	30
4,4'-DDE	8081B	3.98	6.79	59	3.76	6.72	56	38-147	6	30
4,4'-DDT	8081B	3.82	6.79	56	3.61	6.72	54	37-146	6	30
Aldrin	8081B	3.91	6.79	58	3.72	6.72	55	25-146	5	30
Dieldrin	8081B	3.92	6.79	58	3.70	6.72	55	40-140	6	30
Endosulfan I	8081B	3.88	6.79	57	3.69	6.72	55	35-116	5	30
Endosulfan II	8081B	3.86	6.79	57	3.68	6.72	55	39-122	5	30
Endosulfan Sulfate	8081B	3.89	6.79	57	3.76	6.72	56	31-132	4	30
Endrin	8081B	4.02	6.79	59	3.79	6.72	56	40-144	6	30
Endrin Aldehyde	8081B	3.64	6.79	54	3.52	6.72	52	10-109	3	30
Endrin Ketone	8081B	4.03	6.79	59	3.86	6.72	57	38-122	4	30
Heptachlor	8081B	4.11	6.79	61	3.91	6.72	58	34-142	5	30
Heptachlor Epoxide	8081B	3.94	6.79	58	3.71	6.72	55	37-113	6	30
Methoxychlor	8081B	3.73	6.79	55	3.52	6.72	52	41-152	6	30
alpha-BHC	8081B	3.99	6.79	59	3.80	6.72	56	28-145	5	30
alpha-Chlordane	8081B	3.88	6.79	57	3.68	6.72	55	37-114	5	30
beta-BHC	8081B	4.08	6.79	60	3.87	6.72	58	38-144	5	30
delta-BHC	8081B	4.17	6.79	61	3.97	6.72	59	30-153	5	30
gamma-BHC (Lindane)	8081B	3.96	6.79	58	3.74	6.72	56	32-145	6	30
gamma-Chlordane	8081B	4.20	6.79	62	4.02	6.72	60	34-123	5	30

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010361
Project: Rochester REDI/1940100197
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Extraction Method: EPA 3541

Sample Name	Lab Code	Decachlorobiphenyl 22-128	Tetrachloro-m-xylene 14-119
EB2-0-2-11062020	R2010361-004	43	43
WAB1-0-2-11062020	R2010361-005	25	23
WCB2-0-2-11062020	R2010361-006	62	57
Method Blank	RQ2013661-01	58	60
Method Blank	RQ2013843-01	67	63
Lab Control Sample	RQ2013661-04	71	68
Duplicate Lab Control Sample	RQ2013661-05	57	57
Lab Control Sample	RQ2013843-04	72	69
Duplicate Lab Control Sample	RQ2013843-05	76	67
EB1-Fill-0.5-2-11042020 MS	RQ2013661-08	59	43
EB1-Fill-0.5-2-11042020 DMS	RQ2013661-09	67	67

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20
		Date Analyzed:	11/11/20
		Date Extracted:	11/9/20

Duplicate Matrix Spike Summary
Polychlorinated Biphenyls (PCBs) by GC

Sample Name:	EB1-Fill-0.5-2-11042020	**Units:**	ug/Kg
Lab Code:	R2010361-003	**Basis:**	Dry
Analysis Method:	8082A		
Prep Method:	EPA 3541		

		Matrix Spike			**Duplicate Matrix Spike**					
		RQ2013661-08			RQ2013661-09					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1016	40 U	107	202	53	143	200	71	26-137	29	30
Aroclor 1260	40 U	125	202	62	156	200	78	30-156	23	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:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2013661-01	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	33 U	33	18	1	11/11/20 03:00	11/9/20	
Aroclor 1221	68 U	68	18	1	11/11/20 03:00	11/9/20	
Aroclor 1232	33 U	33	18	1	11/11/20 03:00	11/9/20	
Aroclor 1242	33 U	33	18	1	11/11/20 03:00	11/9/20	
Aroclor 1248	33 U	33	18	1	11/11/20 03:00	11/9/20	
Aroclor 1254	33 U	33	18	1	11/11/20 03:00	11/9/20	
Aroclor 1260	33 U	33	18	1	11/11/20 03:00	11/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	58	22 - 128	11/11/20 03:00	
Tetrachloro-m-xylene	60	14 - 119	11/11/20 03:00	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2013843-01	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	33 U	33	17	1	11/16/20 19:39	11/11/20	
Aroclor 1221	67 U	67	17	1	11/16/20 19:39	11/11/20	
Aroclor 1232	33 U	33	17	1	11/16/20 19:39	11/11/20	
Aroclor 1242	33 U	33	17	1	11/16/20 19:39	11/11/20	
Aroclor 1248	33 U	33	17	1	11/16/20 19:39	11/11/20	
Aroclor 1254	33 U	33	17	1	11/16/20 19:39	11/11/20	
Aroclor 1260	33 U	33	17	1	11/16/20 19:39	11/11/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	67	22 - 128	11/16/20 19:39	
Tetrachloro-m-xylene	63	14 - 119	11/16/20 19:39	

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Analyzed: 11/17/20

Duplicate Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs) by GC

Units:ug/Kg
Basis: Dry

			Lab Control Sample			Duplicate Lab Control Sample				
			RQ2013661-04			RQ2013661-05				
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1016	8082A	119	166	71	97.8	165	59	41-127	19	30
Aroclor 1260	8082A	128	166	77	102	165	62	37-127	22	30

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Analyzed: 11/16/20

Duplicate Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs) by GC

Units:ug/Kg
Basis: Dry

			Lab Control Sample		Duplicate Lab Control Sample					
			RQ2013843-04		RQ2013843-05					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1016	8082A	114	167	69	116	168	69	41-127	2	30
Aroclor 1260	8082A	121	167	72	131	168	78	37-127	8	30

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: R2010361

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: WGB-8-2-4-11

Preparation Blank Matrix (soil/water): SOIL

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

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	120.00	U	120.00	U	120.00	U	120.00	U	12.000	U	P
Antimony	5.40	U	5.40	U	5.40	U	5.40	U	0.540	U	P
Arsenic	7.00	U	7.00	U	7.00	U	7.00	U	0.700	U	P
Barium	15.00	U	15.00	U	15.00	U	15.00	U	1.500	U	P
Beryllium	0.60	U	0.60	U	0.60	U	0.60	U	0.060	U	P
Cadmium	2.40	U	2.40	U	2.40	U	2.40	U	0.240	U	P
Mercury	0.078	U	0.078	U	0.078	U	0.078	U	0.013	U	CV
Calcium	320.00	U	320.00	U	320.00	U	320.00	U	32.000	U	P
Chromium	3.50	U	3.50	U	3.50	U	3.50	U	0.350	U	P
Cobalt	4.60	U	4.60	U	4.60	U	4.60	U	0.460	U	P
Copper	6.30	U	6.30	U	6.30	U	6.30	U	0.630	U	P
Iron	130.00	U	130.00	U	130.00	U	130.00	U	13.000	U	P
Lead	4.00	U	4.00	U	4.00	U	4.00	U	0.400	U	P
Magnesium	130.00	U	130.00	U	130.00	U	130.00	U	13.000	U	P
Manganese	15.00	U	15.00	U	15.00	U	15.00	U	1.500	U	P
Nickel	6.60	U	6.60	U	6.60	U	6.60	U	0.660	U	P
Potassium	500.00	U	500.00	U	500.00	U	500.00	U	50.000	U	P
Selenium	5.40	U	5.40	U	5.40	U	5.40	U	0.540	U	P
Silver	0.90	U	0.90	U	0.90	U	0.90	U	0.090	U	P
Sodium	520.00	U	520.00	U	520.00	U	520.00	U	52.000	U	P
Thallium	6.50	U	6.50	U	7.90	J	6.50	U	0.650	U	P
Vanadium	7.10	U	7.10	U	7.10	U	7.10	U	0.710	U	P
Zinc	14.00	U	14.00	U	14.00	U	14.00	U	1.400	U	P

Comments:

METALS

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BLANKS

Contract: R2010361

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: WGB-8-2-4-11

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			120.00	U	120.00	U	120.00	U			P
Antimony			5.40	U	5.40	U	5.40	U			P
Arsenic			7.00	U	7.00	U	7.00	U			P
Barium			15.00	U	15.00	U	15.00	U			P
Beryllium			0.60	U	0.60	U	0.60	U			P
Cadmium			2.40	U	2.40	U	2.40	U			P
Mercury			0.078	U							CV
Calcium			320.00	U	320.00	U	320.00	U			P
Chromium			3.50	U	3.50	U	3.50	U			P
Cobalt			4.60	U	4.60	U	4.60	U			P
Copper			6.30	U	6.30	U	6.30	U			P
Iron			130.00	U	130.00	U	130.00	U			P
Lead			4.00	U	4.00	U	4.00	U			P
Magnesium			130.00	U	130.00	U	130.00	U			P
Manganese			15.00	U	15.00	U	15.00	U			P
Nickel			6.60	U	6.60	U	6.60	U			P
Potassium			500.00	U	500.00	U	500.00	U			P
Selenium			5.40	U	5.40	U	5.40	U			P
Silver			0.90	U	0.90	U	0.90	U			P
Sodium			520.00	U	520.00	U	520.00	U			P
Thallium			6.50	U	6.50	U	6.50	U			P
Vanadium			7.10	U	7.10	U	7.10	U			P
Zinc			14.00	U	14.00	U	14.00	U			P

Comments:

METALS

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BLANKS

Contract: R2010361

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: WGB-8-2-4-11

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			120.00	U	120.00	U					P
Antimony			5.40	U	5.40	U					P
Arsenic			7.00	U	7.00	U					P
Barium			15.00	U	15.00	U					P
Beryllium			0.60	U	0.60	U					P
Cadmium			2.40	U	2.40	U					P
Calcium			320.00	U	320.00	U					P
Chromium			3.50	U	3.50	U					P
Cobalt			4.60	U	4.60	U					P
Copper			6.30	U	6.30	U					P
Iron			130.00	U	130.00	U					P
Lead			4.00	U	4.00	U					P
Magnesium			130.00	U	130.00	U					P
Manganese			15.00	U	15.00	U					P
Nickel			6.60	U	6.60	U					P
Potassium			500.00	U	500.00	U					P
Selenium			5.40	U	5.40	U					P
Silver			0.90	U	0.90	U					P
Sodium			520.00	U	520.00	U					P
Thallium			6.50	U	6.50	U					P
Vanadium			7.10	U	7.10	U					P
Zinc			14.00	U	14.00	U					P

Comments:

METALS

-5A-

SPIKE SAMPLE RECOVERY

SAMPLE NO.

WCB2-0-2-11062020S

Contract: R2010361

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: WGB-8-2-4-11

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

% Solids for Sample: 86.5

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum		10500.00		9770.00		231.0	316		P
Antimony	75 - 125	56.40		16.80		57.8	69	N	P
Arsenic	75 - 125	12.40		7.31		4.6	111		P
Barium	75 - 125	359.00		88.40		231.0	117		P
Beryllium	75 - 125	6.54		0.65		5.8	102		P
Cadmium	75 - 125	6.21		0.64		5.8	96		P
Calcium		29300.00		25200.00		231.0	1775		P
Chromium	75 - 125	47.30		16.60		23.1	133	N	P
Cobalt	75 - 125	60.60		5.80		57.8	95		P
Copper		550.00		1890.00		28.9	-4637		P
Iron		21500.00		19500.00		116.0	1724		P
Lead		1670.00		465.00		57.8	2085		P
Magnesium		10300.00		11900.00		231.0	-693		P
Manganese		464.00		311.00		57.8	265		P
Nickel	75 - 125	82.60		25.60		57.8	99		P
Potassium	75 - 125	3130.00		1160.00		2310.0	85		P
Selenium	75 - 125	102.00		0.62	U	117.0	87		P
Silver	75 - 125	7.38		1.94		5.8	94		P
Sodium	75 - 125	2360.00		120.00		2310.0	97		P
Thallium	75 - 125	217.00		0.75	U	231.0	94		P
Vanadium	75 - 125	71.30		17.60		57.8	93		P
Zinc		560.00		390.00		57.8	294		P

Comments: _____

METALS

-5A-

SPIKE SAMPLE RECOVERY

SAMPLE NO.

WCB2-0-2-11062020SD

Contract: R2010361

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: WGB-8-2-4-11

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

% Solids for Sample: 86.5

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum		8590.00		9770.00		231.0	-511		P
Antimony	75 - 125	59.10		16.80		57.8	73	N	P
Arsenic	75 - 125	11.10		7.31		4.6	82		P
Barium	75 - 125	312.00		88.40		231.0	97		P
Beryllium	75 - 125	6.32		0.65		5.8	98		P
Cadmium	75 - 125	6.16		0.64		5.8	95		P
Calcium		45700.00		25200.00		231.0	8874		P
Chromium	75 - 125	38.90		16.60		23.1	97		P
Cobalt	75 - 125	59.50		5.80		57.8	93		P
Copper		341.00		1890.00		28.9	-5360		P
Iron		18700.00		19500.00		116.0	-690		P
Lead		576.00		465.00		57.8	192		P
Magnesium		22800.00		11900.00		231.0	4719		P
Manganese		394.00		311.00		57.8	144		P
Nickel	75 - 125	69.90		25.60		57.8	77		P
Potassium	75 - 125	3190.00		1160.00		2310.0	88		P
Selenium	75 - 125	102.00		0.62	U	117.0	87		P
Silver	75 - 125	6.87		1.94		5.8	85		P
Sodium	75 - 125	2410.00		120.00		2310.0	99		P
Thallium	75 - 125	225.00		0.75	U	231.0	97		P
Vanadium	75 - 125	69.90		17.60		57.8	90		P
Zinc		411.00		390.00		57.8	36		P

Comments: _____

METALS
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DUPLICATES

SAMPLE NO.: WCB2-0-2-11062020SD

Contract: R2010361

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: WGB-8-2-4-11

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

% Solids for Sample: 86.5 % Solids for Duplicate: 86.5

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

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		10500.00		8590.00		20		P
Antimony		56.40		59.10		5		P
Arsenic		12.40		11.10		11		P
Barium		359.00		312.00		14		P
Beryllium		6.54		6.32		3		P
Cadmium		6.21		6.16		1		P
Calcium		29300.00		45700.00		44	*	P
Chromium		47.30		38.90		19		P
Cobalt		60.60		59.50		2		P
Copper		550.00		341.00		47	*	P
Iron		21500.00		18700.00		14		P
Lead		1670.00		576.00		97	*	P
Magnesium		10300.00		22800.00		76	*	P
Manganese		464.00		394.00		16		P
Nickel		82.60		69.90		17		P
Potassium		3130.00		3190.00		2		P
Selenium		102.00		102.00		0		P
Silver		7.38		6.87		7		P
Sodium		2360.00		2410.00		2		P
Thallium		217.00		225.00		4		P
Vanadium		71.30		69.90		2		P
Zinc		560.00		411.00		31	*	P

Comments: _____

METALS

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LABORATORY CONTROL SAMPLE

Contract: R2010361

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: WGB-8-2-4-11

Solid LCS Source: CPI

Aqueous LCS Source:

Analyte	Aqueous (ug/L True	Found	%R	Solid (mg/K True	Found	C	Limits		%R
Aluminum				200	199.46		160	240	100
Antimony				50	48.13		40	60	96
Arsenic				4	4.20		3.2	4.8	105
Barium				200	205.64		160	240	103
Beryllium				5	5.06		4	6	101
Cadmium				5	5.15		4	6	103
Mercury				0.166	0.17		.133	.199	102
Calcium				200	207.04		160	240	104
Chromium				20	20.84		16	24	104
Cobalt				50	51.88		40	60	104
Copper				25	25.64		20	30	103
Iron				100	101.86		80	120	102
Lead				50	51.02		40	60	102
Magnesium				200	199.59		160	240	100
Manganese				50	50.50		40	60	101
Nickel				50	51.34		40	60	103
Potassium				2000	1926.01		1600	2400	96
Selenium				101	90.59		80.8	121	90
Silver				5	4.91		4	6	98
Sodium				2000	1932.61		1600	2400	97
Thallium				200	187.81		160	240	94
Vanadium				50	50.62		40	60	101
Zinc				50	50.48		40	60	101

Comments:

General Chemistry

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

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	Dry
Lab Code:	R2010361-MB		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	0.30 U	mg/Kg	0.30	0.17	1	11/12/20 11:51	11/11/20	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20
Sample Matrix:	Soil	**Date Received:**	11/06/20
		Date Analyzed:	11/12/20
		Date Extracted:	11/11/20

Duplicate Matrix Spike Summary
Cyanide, Total

Sample Name:	WCB2-0-2-11062020	**Units:**	mg/Kg
Lab Code:	R2010361-006	**Basis:**	Dry
Analysis Method:	9012B		
Prep Method:	Method		

		Matrix Spike R2010361-006MS			**Duplicate Matrix Spike** R2010361-006DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Cyanide, Total	1.11	6.65	3.10	179 *	4.43	3.09	107	10-159	40*	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.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20
		Date Analyzed:	11/13/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	EB1-Fill-0.5-2-11042020	**Units:**	Percent
Lab Code:	R2010361-003	**Basis:**	As Received

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample R2010361-003DUP Result	Average	RPD	RPD Limit
Total Solids	ALS SOP	-	-	83.4	83.3	83.4	<1	20

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.

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Analyzed: 11/12/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/Kg
Basis: Dry

Lab Control Sample
R2010361-LCS1

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Cyanide, Total	9012B	2.87	3.00	96	85-115

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Analyzed: 11/12/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/Kg
Basis: Dry

Lab Control Sample
R2010361-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Cyanide, Total	9012B	16.9	18.0	94	85-115

Subcontracted Analytical Parameters

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

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

December 02, 2020 **Analytical Report for Service Request No:** R2010361

Janice Jaeger
ALS Environmental
1565 Jefferson Rd, Building 300
Suite 360
Rochester, NY 14623

RE: Rochester REDI / 1940100197

Dear Janice Jaeger,

Enclosed are the results of the sample(s) submitted to our laboratory November 04, 2020
For your reference, these analyses have been assigned our service request number **R2010361.**

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 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Mark Harris
Project Manager

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

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PFAS by HPLC/MS/MS

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
LOD	Limit of Detection
LOQ	Limit of Quantitation
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.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

1317 South 13th Ave, Kelso, WA 98626 | 1-360-577-7222 | www.alsglobal.com

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI
Sample Matrix: Soil

Service Request: R2010361
Date Received: 11/03/2020 - 11/06/2020

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 II requested by the client.

Sample Receipt:

Six soil samples were received for analysis at ALS Environmental on 11/03/2020 - 11/06/2020. 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.

Organic LC:

Method PFC/537M, 12/01/2020:The upper control criterion was exceeded for N-Ethyl perfluorooctane sulfonamidoacetic acid in Continuing Calibration Verification (CCV) KQ2019022-03. The field samples analyzed in this sequence did not contain the analytes in question. Since the apparent problem indicated a potential high bias, the data quality was not affected. No further corrective action was required.

Method PFC/537M, 12/01/2020:The control criteria were exceeded for 13C2-PFTeDA in Lab Control Sample LCS KQ2017896-07. The associated matrix spike recoveries of target compounds were in control, indicating the analysis was in control. The surrogate outlier was flagged accordingly. No further corrective action was appropriate.

Method PFC/537M, 12/01/2020:The control criteria was exceeded for one or more surrogates in Continuing Calibration Verification (CCV) KQ2019022-03. The recoveries of the associated native analytes were within control criteria, which indicated the analysis was in control. No further corrective action was appropriate.
Method PFC/537M, 12/01/2020:The upper control criterion was exceeded for one or more surrogates in samples EB1-Fill-0.5-2-11042020, WAB1-0-2-11062020, WCB2-0-2-11062020 and EB2-0-2-11062020. The associated native analytes were not detected above the Method Reporting Limit (MRL) in this sample. The error associated with an elevated recovery equated to a high bias. Assuming the native analytes performed similar to the labeled analogs, the effect on the reported results was minimal. The quality of the sample data was not significantly affected. No further corrective action was appropriate.
Method PFC/537M, 11/16/2020:Due to a laboratory oversight, a Duplicate Lab Control Sample (DLCS) was not prepared with the extraction batch 369716. The associated spike recoveries of target compounds in the LCS were within control criteria, which indicated analytical performance for the extraction batch was in control. The lack of a replicate LCS analysis prevented evaluation of analytical precision for this extraction batch. No further corrective action was feasible.

Approved by  Date 12/02/2020

Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Intra-Network Chain of Custody

1565 Jefferson Rd, Building 300 • Rochester, NY 14623 • 585-288-5380 • FAX 585-288-8475

ALS Contact: Janice Jaeger

Project Name: Rochester REDI
Project Number: 1940100197
Project Manager: Deborah Wright
Company: O'Brien & Gere Engineers, Incorporated
QAP: LAB QAP

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Date Received	Send To	PFAS PFC/537M
R2010361-001	WGB-8-2-4-11032020	1	Soil	11/3/20	0945	11/3/20	KELSO	IV
R2010361-002	EB1-Native-10-12-11042020	1	Soil	11/4/20		11/4/20	KELSO	IV
R2010361-003	EB1-Fill-0.5-2-11042020	1	Soil	11/4/20		11/4/20	KELSO	IV
R2010361-004	EB2-0-2-11062020	1	Soil	11/6/20	0915	11/6/20	KELSO	IV
R2010361-005	WAB1-0-2-11062020	1	Soil	11/6/20	1145	11/6/20	KELSO	IV
R2010361-006	WCB2-0-2-11062020	1	Soil	11/6/20	1225	11/6/20	KELSO	IV

Folder Comments:
MRL U need tier 2 and 4

Special Instructions/Comments

pH Checked _____

Turnaround Requirements

_____ **RUSH** (Surcharges Apply)

PLEASE CIRCLE WORK DAYS
1 2 3 4 5

X **STANDARD**

Requested FAX Date: _____

Requested Report Date: 11/25/20

Report Requirements

_____ I. Results Only

X II. Results + QC Summaries

_____ III. Results + QC and Calibration Summaries

X IV. Data Validation Report with Raw Data

PQL/MDL/J Y
EDD Y

Invoice Information

PO# 58R2010361

Bill to

Relinquished By: 11/12/2020 1210

Received By: AES 11/13/20 1030

Airbill Number: _____

PM NHH

Cooler Receipt and Preservation Form

Client ALS - Rochester Service Request ~~K20~~ R2010361

Received: 11/3/20 Opened: 11/3/20 By: [illegible] Unloaded: 11/3/20 By: [illegible]

1. Samples were received via? *USPS* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other*_____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 1 Front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N
4. Was a Temperature Blank present in cooler? NA (Y) N If yes, notate the temperature in the appropriate column below.
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA Y N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. NA Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
N/A	6.5	IR02		X	Yes	1730 2433 3808	

6. Packing material: *Inserts* (*Baggies*) *Bubble Wrap* *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
14. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

PFAS by HPLC/MS/MS

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Organic Compounds by HPLC/MS/MS

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/03/20 09:45
Sample Matrix:	Soil	**Date Received:**	11/03/20 17:00
Sample Name:	WGB-8-2-4-11032020	**Units:**	ng/g
Lab Code:	R2010361-001	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFSAs)								
Perfluorobutane sulfonic acid (PFBS)	1.1	U	1.1	0.24	1	12/01/20 01:43	11/16/20	
Perfluorohexane sulfonic acid (PFHxS)	1.1	U	1.1	0.33	1	12/01/20 01:43	11/16/20	
Perfluoroheptane sulfonic acid (PFHpS)	1.1	U	1.1	0.068	1	12/01/20 01:43	11/16/20	
Perfluorooctane sulfonic acid (PFOS)	**3.3**		1.1	0.15	1	12/01/20 01:43	11/16/20	
Perfluorodecane sulfonic acid (PFDS)	1.1	U	1.1	0.19	1	12/01/20 01:43	11/16/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)								
Perfluorobutanoic acid (PFBA)	1.1	U	1.1	0.43	1	12/01/20 01:43	11/16/20	
Perfluoropentanoic acid (PFPeA)	1.1	U	1.1	0.23	1	12/01/20 01:43	11/16/20	
Perfluorohexanoic acid (PFHxA)	1.1	U	1.1	0.34	1	12/01/20 01:43	11/16/20	
Perfluoroheptanoic acid (PFHpA)	1.1	U	1.1	0.21	1	12/01/20 01:43	11/16/20	
Perfluorooctanoic acid (PFOA)	**0.21**	**J**	1.1	0.15	1	12/01/20 01:43	11/16/20	
Perfluorononanoic acid (PFNA)	1.1	U	1.1	0.36	1	12/01/20 01:43	11/16/20	
Perfluorodecanoic acid (PFDA)	1.1	U	1.1	0.29	1	12/01/20 01:43	11/16/20	
Perfluoroundecanoic acid (PFUnDA)	1.1	U	1.1	0.20	1	12/01/20 01:43	11/16/20	
Perfluorododecanoic acid (PFDoDA)	1.1	U	1.1	0.30	1	12/01/20 01:43	11/16/20	
Perfluorotridecanoic acid (PFTrDA)	1.1	U	1.1	0.23	1	12/01/20 01:43	11/16/20	
Perfluorotetradecanoic acid (PFTeDA)	1.1	U	1.1	0.20	1	12/01/20 01:43	11/16/20	
Perfluoroalkyl Sulfonamido Substances								
Perfluorooctane sulfonamide (FOSA)	1.1	U	1.1	0.073	1	12/01/20 01:43	11/16/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	1.1	U	1.1	0.30	1	12/01/20 01:43	11/16/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	1.1	U	1.1	0.22	1	12/01/20 01:43	11/16/20	*
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)								
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	1.1	U	1.1	0.17	1	12/01/20 01:43	11/16/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	1.1	U	1.1	0.032	1	12/01/20 01:43	11/16/20	

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Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/03/20 09:45
Sample Matrix:	Soil	**Date Received:**	11/03/20 17:00
Sample Name:	WGB-8-2-4-11032020	**Units:**	ng/g
Lab Code:	R2010361-001	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	42	33 - 109	12/01/20 01:43	
18O2-PFHxS	52	36 - 120	12/01/20 01:43	
13C4-PFOS	60	32 - 130	12/01/20 01:43	
13C4-PFBA	60	34 - 116	12/01/20 01:43	
13C5-PFPeA	63	39 - 133	12/01/20 01:43	
13C2-PFHxA	71	32 - 136	12/01/20 01:43	
13C4-PFHpA	57	36 - 133	12/01/20 01:43	
13C4-PFOA	61	31 - 134	12/01/20 01:43	
13C5-PFNA	87	27 - 133	12/01/20 01:43	
13C2-PFDA	74	30 - 137	12/01/20 01:43	
13C2-PFUnDA	88	32 - 146	12/01/20 01:43	
13C2-PFDoDA	85	36 - 136	12/01/20 01:43	
13C2-PFTeDA	95	39 - 138	12/01/20 01:43	
13C8-FOSA	65	40 - 132	12/01/20 01:43	
D3-MeFOSAA	115	20 - 154	12/01/20 01:43	
D5-EtFOSAA	96	29 - 153	12/01/20 01:43	
13C2-6:2 FTS	72	30 - 140	12/01/20 01:43	
13C2-8:2 FTS	105	9 - 171	12/01/20 01:43	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Native-10-12-11042020	**Units:**	ng/g
Lab Code:	R2010361-002	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFSAs)							
Perfluorobutane sulfonic acid (PFBS)	1.1 U	1.1	0.26	1	12/01/20 01:54	11/16/20	
Perfluorohexane sulfonic acid (PFHxS)	1.1 U	1.1	0.35	1	12/01/20 01:54	11/16/20	
Perfluoroheptane sulfonic acid (PFHpS)	1.1 U	1.1	0.071	1	12/01/20 01:54	11/16/20	
Perfluorooctane sulfonic acid (PFOS)	1.1 U	1.1	0.15	1	12/01/20 01:54	11/16/20	
Perfluorodecane sulfonic acid (PFDS)	1.1 U	1.1	0.20	1	12/01/20 01:54	11/16/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	1.1 U	1.1	0.45	1	12/01/20 01:54	11/16/20	
Perfluoropentanoic acid (PFPeA)	1.1 U	1.1	0.24	1	12/01/20 01:54	11/16/20	
Perfluorohexanoic acid (PFHxA)	1.1 U	1.1	0.36	1	12/01/20 01:54	11/16/20	
Perfluoroheptanoic acid (PFHpA)	1.1 U	1.1	0.22	1	12/01/20 01:54	11/16/20	
Perfluorooctanoic acid (PFOA)	1.1 U	1.1	0.15	1	12/01/20 01:54	11/16/20	
Perfluorononanoic acid (PFNA)	1.1 U	1.1	0.38	1	12/01/20 01:54	11/16/20	
Perfluorodecanoic acid (PFDA)	1.1 U	1.1	0.30	1	12/01/20 01:54	11/16/20	
Perfluoroundecanoic acid (PFUnDA)	1.1 U	1.1	0.21	1	12/01/20 01:54	11/16/20	
Perfluorododecanoic acid (PFDoDA)	1.1 U	1.1	0.31	1	12/01/20 01:54	11/16/20	
Perfluorotridecanoic acid (PFTrDA)	1.1 U	1.1	0.24	1	12/01/20 01:54	11/16/20	
Perfluorotetradecanoic acid (PFTeDA)	1.1 U	1.1	0.21	1	12/01/20 01:54	11/16/20	
Perfluoroalkyl Sulfonamido Substances							
Perfluorooctane sulfonamide (FOSA)	1.1 U	1.1	0.077	1	12/01/20 01:54	11/16/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	1.1 U	1.1	0.31	1	12/01/20 01:54	11/16/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	1.1 U	1.1	0.23	1	12/01/20 01:54	11/16/20	*
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	1.1 U	1.1	0.18	1	12/01/20 01:54	11/16/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	1.1 U	1.1	0.034	1	12/01/20 01:54	11/16/20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Native-10-12-11042020	**Units:**	ng/g
Lab Code:	R2010361-002	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	51	33 - 109	12/01/20 01:54	
18O2-PFHxS	71	36 - 120	12/01/20 01:54	
13C4-PFOS	70	32 - 130	12/01/20 01:54	
13C4-PFBA	70	34 - 116	12/01/20 01:54	
13C5-PFPeA	76	39 - 133	12/01/20 01:54	
13C2-PFHxA	76	32 - 136	12/01/20 01:54	
13C4-PFHpA	77	36 - 133	12/01/20 01:54	
13C4-PFOA	72	31 - 134	12/01/20 01:54	
13C5-PFNA	88	27 - 133	12/01/20 01:54	
13C2-PFDA	78	30 - 137	12/01/20 01:54	
13C2-PFUnDA	86	32 - 146	12/01/20 01:54	
13C2-PFDoDA	95	36 - 136	12/01/20 01:54	
13C2-PFTeDA	109	39 - 138	12/01/20 01:54	
13C8-FOSA	77	40 - 132	12/01/20 01:54	
D3-MeFOSAA	126	20 - 154	12/01/20 01:54	
D5-EtFOSAA	94	29 - 153	12/01/20 01:54	
13C2-6:2 FTS	78	30 - 140	12/01/20 01:54	
13C2-8:2 FTS	87	9 - 171	12/01/20 01:54	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Fill-0.5-2-11042020	**Units:**	ng/g
Lab Code:	R2010361-003	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFSAs)							
Perfluorobutane sulfonic acid (PFBS)	1.2 U	1.2	0.27	1	12/01/20 02:05	11/16/20	
Perfluorohexane sulfonic acid (PFHxS)	1.2 U	1.2	0.36	1	12/01/20 02:05	11/16/20	
Perfluoroheptane sulfonic acid (PFHpS)	1.2 U	1.2	0.074	1	12/01/20 02:05	11/16/20	
Perfluorooctane sulfonic acid (PFOS)	1.2 U	1.2	0.16	1	12/01/20 02:05	11/16/20	
Perfluorodecane sulfonic acid (PFDS)	1.2 U	1.2	0.21	1	12/01/20 02:05	11/16/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	1.2 U	1.2	0.47	1	12/01/20 02:05	11/16/20	
Perfluoropentanoic acid (PFPeA)	1.2 U	1.2	0.26	1	12/01/20 02:05	11/16/20	
Perfluorohexanoic acid (PFHxA)	1.2 U	1.2	0.37	1	12/01/20 02:05	11/16/20	
Perfluoroheptanoic acid (PFHpA)	1.2 U	1.2	0.23	1	12/01/20 02:05	11/16/20	
Perfluorooctanoic acid (PFOA)	1.2 U	1.2	0.16	1	12/01/20 02:05	11/16/20	
Perfluorononanoic acid (PFNA)	1.2 U	1.2	0.40	1	12/01/20 02:05	11/16/20	
Perfluorodecanoic acid (PFDA)	1.2 U	1.2	0.32	1	12/01/20 02:05	11/16/20	
Perfluoroundecanoic acid (PFUnDA)	1.2 U	1.2	0.22	1	12/01/20 02:05	11/16/20	
Perfluorododecanoic acid (PFDoDA)	1.2 U	1.2	0.33	1	12/01/20 02:05	11/16/20	
Perfluorotridecanoic acid (PFTrDA)	1.2 U	1.2	0.26	1	12/01/20 02:05	11/16/20	
Perfluorotetradecanoic acid (PFTeDA)	1.2 U	1.2	0.22	1	12/01/20 02:05	11/16/20	
Perfluoroalkyl Sulfonamido Substances							
Perfluorooctane sulfonamide (FOSA)	1.2 U	1.2	0.080	1	12/01/20 02:05	11/16/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	1.2 U	1.2	0.33	1	12/01/20 02:05	11/16/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	1.2 U	1.2	0.24	1	12/01/20 02:05	11/16/20	*
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	1.2 U	1.2	0.18	1	12/01/20 02:05	11/16/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	1.2 U	1.2	0.035	1	12/01/20 02:05	11/16/20	

ALS Group USA, Corp.
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Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/04/20
Sample Matrix:	Soil	**Date Received:**	11/04/20 17:30
Sample Name:	EB1-Fill-0.5-2-11042020	**Units:**	ng/g
Lab Code:	R2010361-003	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	68	33 - 109	12/01/20 02:05	
18O2-PFHxS	79	36 - 120	12/01/20 02:05	
13C4-PFOS	92	32 - 130	12/01/20 02:05	
13C4-PFBA	87	34 - 116	12/01/20 02:05	
13C5-PFPeA	97	39 - 133	12/01/20 02:05	
13C2-PFHxA	97	32 - 136	12/01/20 02:05	
13C4-PFHpA	84	36 - 133	12/01/20 02:05	
13C4-PFOA	84	31 - 134	12/01/20 02:05	
13C5-PFNA	103	27 - 133	12/01/20 02:05	
13C2-PFDA	92	30 - 137	12/01/20 02:05	
13C2-PFUnDA	92	32 - 146	12/01/20 02:05	
13C2-PFDoDA	118	36 - 136	12/01/20 02:05	
13C2-PFTeDA	144	39 - 138	12/01/20 02:05	*
13C8-FOSA	100	40 - 132	12/01/20 02:05	
D3-MeFOSAA	134	20 - 154	12/01/20 02:05	
D5-EtFOSAA	133	29 - 153	12/01/20 02:05	
13C2-6:2 FTS	85	30 - 140	12/01/20 02:05	
13C2-8:2 FTS	112	9 - 171	12/01/20 02:05	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 09:15
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	EB2-0-2-11062020	**Units:**	ng/g
Lab Code:	R2010361-004	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFSAs)							
Perfluorobutane sulfonic acid (PFBS)	1.4 U	1.4	0.31	1	12/01/20 02:16	11/16/20	
Perfluorohexane sulfonic acid (PFHxS)	1.4 U	1.4	0.42	1	12/01/20 02:16	11/16/20	
Perfluoroheptane sulfonic acid (PFHpS)	1.4 U	1.4	0.087	1	12/01/20 02:16	11/16/20	
Perfluorooctane sulfonic acid (PFOS)	**1.7**	1.4	0.19	1	12/01/20 02:16	11/16/20	
Perfluorodecane sulfonic acid (PFDS)	1.4 U	1.4	0.24	1	12/01/20 02:16	11/16/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	1.4 U	1.4	0.55	1	12/01/20 02:16	11/16/20	
Perfluoropentanoic acid (PFPeA)	1.4 U	1.4	0.30	1	12/01/20 02:16	11/16/20	
Perfluorohexanoic acid (PFHxA)	1.4 U	1.4	0.44	1	12/01/20 02:16	11/16/20	
Perfluoroheptanoic acid (PFHpA)	1.4 U	1.4	0.27	1	12/01/20 02:16	11/16/20	
Perfluorooctanoic acid (PFOA)	**0.27 J**	1.4	0.19	1	12/01/20 02:16	11/16/20	
Perfluorononanoic acid (PFNA)	1.4 U	1.4	0.47	1	12/01/20 02:16	11/16/20	
Perfluorodecanoic acid (PFDA)	1.4 U	1.4	0.37	1	12/01/20 02:16	11/16/20	
Perfluoroundecanoic acid (PFUnDA)	1.4 U	1.4	0.26	1	12/01/20 02:16	11/16/20	
Perfluorododecanoic acid (PFDoDA)	1.4 U	1.4	0.38	1	12/01/20 02:16	11/16/20	
Perfluorotridecanoic acid (PFTrDA)	1.4 U	1.4	0.30	1	12/01/20 02:16	11/16/20	
Perfluorotetradecanoic acid (PFTeDA)	1.4 U	1.4	0.26	1	12/01/20 02:16	11/16/20	
Perfluoroalkyl Sulfonamido Substances							
Perfluorooctane sulfonamide (FOSA)	1.4 U	1.4	0.094	1	12/01/20 02:16	11/16/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	1.4 U	1.4	0.38	1	12/01/20 02:16	11/16/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	1.4 U	1.4	0.28	1	12/01/20 02:16	11/16/20	*
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	1.4 U	1.4	0.21	1	12/01/20 02:16	11/16/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	1.4 U	1.4	0.041	1	12/01/20 02:16	11/16/20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 09:15
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	EB2-0-2-11062020	**Units:**	ng/g
Lab Code:	R2010361-004	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	81	33 - 109	12/01/20 02:16	
18O2-PFHxS	145	36 - 120	12/01/20 02:16	*
13C4-PFOS	122	32 - 130	12/01/20 02:16	
13C4-PFBA	125	34 - 116	12/01/20 02:16	*
13C5-PFPeA	136	39 - 133	12/01/20 02:16	*
13C2-PFHxA	157	32 - 136	12/01/20 02:16	*
13C4-PFHpA	173	36 - 133	12/01/20 02:16	*
13C4-PFOA	128	31 - 134	12/01/20 02:16	
13C5-PFNA	164	27 - 133	12/01/20 02:16	*
13C2-PFDA	151	30 - 137	12/01/20 02:16	*
13C2-PFUnDA	93	32 - 146	12/01/20 02:16	
13C2-PFDoDA	158	36 - 136	12/01/20 02:16	*
13C2-PFTeDA	202	39 - 138	12/01/20 02:16	*
13C8-FOSA	129	40 - 132	12/01/20 02:16	
D3-MeFOSAA	194	20 - 154	12/01/20 02:16	*
D5-EtFOSAA	247	29 - 153	12/01/20 02:16	*
13C2-6:2 FTS	133	30 - 140	12/01/20 02:16	
13C2-8:2 FTS	170	9 - 171	12/01/20 02:16	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 11:45
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WAB1-0-2-11062020	**Units:**	ng/g
Lab Code:	R2010361-005	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFSAs)							
Perfluorobutane sulfonic acid (PFBS)	1.1 U	1.1	0.24	1	12/01/20 02:26	11/16/20	
Perfluorohexane sulfonic acid (PFHxS)	1.1 U	1.1	0.33	1	12/01/20 02:26	11/16/20	
Perfluoroheptane sulfonic acid (PFHpS)	1.1 U	1.1	0.067	1	12/01/20 02:26	11/16/20	
Perfluorooctane sulfonic acid (PFOS)	**0.33 J**	1.1	0.15	1	12/01/20 02:26	11/16/20	
Perfluorodecane sulfonic acid (PFDS)	1.1 U	1.1	0.19	1	12/01/20 02:26	11/16/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	1.1 U	1.1	0.43	1	12/01/20 02:26	11/16/20	
Perfluoropentanoic acid (PFPeA)	**0.24 J**	1.1	0.23	1	12/01/20 02:26	11/16/20	
Perfluorohexanoic acid (PFHxA)	1.1 U	1.1	0.34	1	12/01/20 02:26	11/16/20	
Perfluoroheptanoic acid (PFHpA)	**0.22 J**	1.1	0.21	1	12/01/20 02:26	11/16/20	
Perfluorooctanoic acid (PFOA)	**0.19 J**	1.1	0.15	1	12/01/20 02:26	11/16/20	
Perfluorononanoic acid (PFNA)	1.1 U	1.1	0.36	1	12/01/20 02:26	11/16/20	
Perfluorodecanoic acid (PFDA)	1.1 U	1.1	0.29	1	12/01/20 02:26	11/16/20	
Perfluoroundecanoic acid (PFUnDA)	1.1 U	1.1	0.20	1	12/01/20 02:26	11/16/20	
Perfluorododecanoic acid (PFDoDA)	1.1 U	1.1	0.30	1	12/01/20 02:26	11/16/20	
Perfluorotridecanoic acid (PFTrDA)	1.1 U	1.1	0.23	1	12/01/20 02:26	11/16/20	
Perfluorotetradecanoic acid (PFTeDA)	1.1 U	1.1	0.20	1	12/01/20 02:26	11/16/20	
Perfluoroalkyl Sulfonamido Substances							
Perfluorooctane sulfonamide (FOSA)	1.1 U	1.1	0.073	1	12/01/20 02:26	11/16/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	1.1 U	1.1	0.30	1	12/01/20 02:26	11/16/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	1.1 U	1.1	0.22	1	12/01/20 02:26	11/16/20	*
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	1.1 U	1.1	0.17	1	12/01/20 02:26	11/16/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	1.1 U	1.1	0.032	1	12/01/20 02:26	11/16/20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 11:45
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WAB1-0-2-11062020	**Units:**	ng/g
Lab Code:	R2010361-005	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	87	33 - 109	12/01/20 02:26	
18O2-PFHxS	118	36 - 120	12/01/20 02:26	
13C4-PFOS	130	32 - 130	12/01/20 02:26	
13C4-PFBA	112	34 - 116	12/01/20 02:26	
13C5-PFPeA	119	39 - 133	12/01/20 02:26	
13C2-PFHxA	134	32 - 136	12/01/20 02:26	
13C4-PFHpA	106	36 - 133	12/01/20 02:26	
13C4-PFOA	113	31 - 134	12/01/20 02:26	
13C5-PFNA	148	27 - 133	12/01/20 02:26	*
13C2-PFDA	120	30 - 137	12/01/20 02:26	
13C2-PFUnDA	97	32 - 146	12/01/20 02:26	
13C2-PFDoDA	152	36 - 136	12/01/20 02:26	*
13C2-PFTeDA	176	39 - 138	12/01/20 02:26	*
13C8-FOSA	122	40 - 132	12/01/20 02:26	
D3-MeFOSAA	172	20 - 154	12/01/20 02:26	*
D5-EtFOSAA	204	29 - 153	12/01/20 02:26	*
13C2-6:2 FTS	123	30 - 140	12/01/20 02:26	
13C2-8:2 FTS	147	9 - 171	12/01/20 02:26	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 12:25
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WCB2-0-2-11062020	**Units:**	ng/g
Lab Code:	R2010361-006	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFSAs)								
Perfluorobutane sulfonic acid (PFBS)	1.1	U	1.1	0.24	1	12/01/20 02:37	11/16/20	
Perfluorohexane sulfonic acid (PFHxS)	1.1	U	1.1	0.32	1	12/01/20 02:37	11/16/20	
Perfluoroheptane sulfonic acid (PFHpS)	1.1	U	1.1	0.067	1	12/01/20 02:37	11/16/20	
Perfluorooctane sulfonic acid (PFOS)	**0.84**	**J**	1.1	0.14	1	12/01/20 02:37	11/16/20	
Perfluorodecane sulfonic acid (PFDS)	1.1	U	1.1	0.19	1	12/01/20 02:37	11/16/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)								
Perfluorobutanoic acid (PFBA)	1.1	U	1.1	0.42	1	12/01/20 02:37	11/16/20	
Perfluoropentanoic acid (PFPeA)	**0.24**	**J**	1.1	0.23	1	12/01/20 02:37	11/16/20	
Perfluorohexanoic acid (PFHxA)	1.1	U	1.1	0.34	1	12/01/20 02:37	11/16/20	
Perfluoroheptanoic acid (PFHpA)	**0.43**	**J**	1.1	0.21	1	12/01/20 02:37	11/16/20	
Perfluorooctanoic acid (PFOA)	**0.82**	**J**	1.1	0.14	1	12/01/20 02:37	11/16/20	
Perfluorononanoic acid (PFNA)	1.1	U	1.1	0.36	1	12/01/20 02:37	11/16/20	
Perfluorodecanoic acid (PFDA)	1.1	U	1.1	0.28	1	12/01/20 02:37	11/16/20	
Perfluoroundecanoic acid (PFUnDA)	1.1	U	1.1	0.20	1	12/01/20 02:37	11/16/20	
Perfluorododecanoic acid (PFDoDA)	1.1	U	1.1	0.29	1	12/01/20 02:37	11/16/20	
Perfluorotridecanoic acid (PFTrDA)	1.1	U	1.1	0.23	1	12/01/20 02:37	11/16/20	
Perfluorotetradecanoic acid (PFTeDA)	1.1	U	1.1	0.20	1	12/01/20 02:37	11/16/20	
Perfluoroalkyl Sulfonamido Substances								
Perfluorooctane sulfonamide (FOSA)	1.1	U	1.1	0.072	1	12/01/20 02:37	11/16/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	1.1	U	1.1	0.29	1	12/01/20 02:37	11/16/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	**0.38**	**J**	1.1	0.22	1	12/01/20 02:37	11/16/20	*
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)								
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	1.1	U	1.1	0.16	1	12/01/20 02:37	11/16/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	1.1	U	1.1	0.031	1	12/01/20 02:37	11/16/20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	11/06/20 12:25
Sample Matrix:	Soil	**Date Received:**	11/06/20 15:15
Sample Name:	WCB2-0-2-11062020	**Units:**	ng/g
Lab Code:	R2010361-006	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	59	33 - 109	12/01/20 02:37	
18O2-PFHxS	89	36 - 120	12/01/20 02:37	
13C4-PFOS	85	32 - 130	12/01/20 02:37	
13C4-PFBA	85	34 - 116	12/01/20 02:37	
13C5-PFPeA	91	39 - 133	12/01/20 02:37	
13C2-PFHxA	109	32 - 136	12/01/20 02:37	
13C4-PFHpA	88	36 - 133	12/01/20 02:37	
13C4-PFOA	81	31 - 134	12/01/20 02:37	
13C5-PFNA	129	27 - 133	12/01/20 02:37	
13C2-PFDA	103	30 - 137	12/01/20 02:37	
13C2-PFUnDA	93	32 - 146	12/01/20 02:37	
13C2-PFDoDA	114	36 - 136	12/01/20 02:37	
13C2-PFTeDA	130	39 - 138	12/01/20 02:37	
13C8-FOSA	81	40 - 132	12/01/20 02:37	
D3-MeFOSAA	137	20 - 154	12/01/20 02:37	
D5-EtFOSAA	170	29 - 153	12/01/20 02:37	*
13C2-6:2 FTS	83	30 - 140	12/01/20 02:37	
13C2-8:2 FTS	109	9 - 171	12/01/20 02:37	

QC Summary Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Organic Compounds by HPLC/MS/MS

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010361
Project: Rochester REDI/1940100197
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Extraction Method: ALS SOP

Surrogate	Control Limits	WGB-8-2-4-11032020 R2010361-001	EB1-Native-10-12-11042020 R2010361-002	EB1-Fill-0.5-2-11042020 R2010361-003
13C3-PFBS	33-109	42	51	68
18O2-PFHxS	36-120	52	71	79
13C4-PFOS	32-130	60	70	92
13C4-PFBA	34-116	60	70	87
13C5-PFPeA	39-133	63	76	97
13C2-PFHxA	32-136	71	76	97
13C4-PFHpA	36-133	57	77	84
13C4-PFOA	31-134	61	72	84
13C5-PFNA	27-133	87	88	103
13C2-PFDA	30-137	74	78	92
13C2-PFUnDA	32-146	88	86	92
13C2-PFDoDA	36-136	85	95	118
13C2-PFTeDA	39-138	95	109	144*
13C8-FOSA	40-132	65	77	100
D3-MeFOSAA	20-154	115	126	134
D5-EtFOSAA	29-153	96	94	133
13C2-6:2 FTS	30-140	72	78	85
13C2-8:2 FTS	9-171	105	87	112

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with an pound (#) indicate the control criteria is not acceptable.

ALS Group USA, Corp.
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QA/QC Report

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010361
Project: Rochester REDI/1940100197
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Extraction Method: ALS SOP

Surrogate	Control Limits	EB2-0-2-11062020 R2010361-004	WAB1-0-2-11062020 R2010361-005	WCB2-0-2-11062020 R2010361-006
13C3-PFBS	33-109	81	87	59
18O2-PFHxS	36-120	145*	118	89
13C4-PFOS	32-130	122	130	85
13C4-PFBA	34-116	125*	112	85
13C5-PFPeA	39-133	136*	119	91
13C2-PFHxA	32-136	157*	134	109
13C4-PFHpA	36-133	173*	106	88
13C4-PFOA	31-134	128	113	81
13C5-PFNA	27-133	164*	148*	129
13C2-PFDA	30-137	151*	120	103
13C2-PFUnDA	32-146	93	97	93
13C2-PFDoDA	36-136	158*	152*	114
13C2-PFTeDA	39-138	202*	176*	130
13C8-FOSA	40-132	129	122	81
D3-MeFOSAA	20-154	194*	172*	137
D5-EtFOSAA	29-153	247*	204*	170*
13C2-6:2 FTS	30-140	133	123	83
13C2-8:2 FTS	9-171	170	147	109

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with an pound (#) indicate the control criteria is not acceptable.

QA/QC Report

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010361
Project: Rochester REDI/1940100197
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Extraction Method: ALS SOP

Surrogate	Control Limits	Method Blank KQ2017896-08	Lab Control Sample KQ2017896-07
13C3-PFBS	33-109	47	64
18O2-PFHxS	36-120	72	115
13C4-PFOS	32-130	73	88
13C4-PFBA	34-116	78	89
13C5-PFPeA	39-133	87	105
13C2-PFHxA	32-136	89	105
13C4-PFHpA	36-133	71	121
13C4-PFOA	31-134	76	84
13C5-PFNA	27-133	87	103
13C2-PFDA	30-137	72	81
13C2-PFUnDA	32-146	83	79
13C2-PFDoDA	36-136	96	110
13C2-PFTeDA	39-138	117	152*
13C8-FOSA	40-132	88	101
D3-MeFOSAA	20-154	111	135
D5-EtFOSAA	29-153	79	127
13C2-6:2 FTS	30-140	82	91
13C2-8:2 FTS	9-171	76	89

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with an pound (#) indicate the control criteria is not acceptable.

ALS Group USA, Corp.
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Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/g
Lab Code:	KQ2017896-08	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFSAs)							
Perfluorobutane sulfonic acid (PFBS)	1.0 U	1.0	0.22	1	12/01/20 01:11	11/16/20	
Perfluorohexane sulfonic acid (PFHxS)	1.0 U	1.0	0.30	1	12/01/20 01:11	11/16/20	
Perfluoroheptane sulfonic acid (PFHpS)	1.0 U	1.0	0.062	1	12/01/20 01:11	11/16/20	
Perfluorooctane sulfonic acid (PFOS)	1.0 U	1.0	0.13	1	12/01/20 01:11	11/16/20	
Perfluorodecane sulfonic acid (PFDS)	1.0 U	1.0	0.17	1	12/01/20 01:11	11/16/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	1.0 U	1.0	0.39	1	12/01/20 01:11	11/16/20	
Perfluoropentanoic acid (PFPeA)	1.0 U	1.0	0.21	1	12/01/20 01:11	11/16/20	
Perfluorohexanoic acid (PFHxA)	1.0 U	1.0	0.31	1	12/01/20 01:11	11/16/20	
Perfluoroheptanoic acid (PFHpA)	1.0 U	1.0	0.19	1	12/01/20 01:11	11/16/20	
Perfluorooctanoic acid (PFOA)	**0.13 J**	1.0	0.13	1	12/01/20 01:11	11/16/20	
Perfluorononanoic acid (PFNA)	1.0 U	1.0	0.33	1	12/01/20 01:11	11/16/20	
Perfluorodecanoic acid (PFDA)	1.0 U	1.0	0.26	1	12/01/20 01:11	11/16/20	
Perfluoroundecanoic acid (PFUnDA)	1.0 U	1.0	0.18	1	12/01/20 01:11	11/16/20	
Perfluorododecanoic acid (PFDoDA)	1.0 U	1.0	0.27	1	12/01/20 01:11	11/16/20	
Perfluorotridecanoic acid (PFTrDA)	1.0 U	1.0	0.21	1	12/01/20 01:11	11/16/20	
Perfluorotetradecanoic acid (PFTeDA)	1.0 U	1.0	0.18	1	12/01/20 01:11	11/16/20	
Perfluoroalkyl Sulfonamido Substances							
Perfluorooctane sulfonamide (FOSA)	1.0 U	1.0	0.067	1	12/01/20 01:11	11/16/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	1.0 U	1.0	0.27	1	12/01/20 01:11	11/16/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	1.0 U	1.0	0.20	1	12/01/20 01:11	11/16/20	
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	1.0 U	1.0	0.15	1	12/01/20 01:11	11/16/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	1.0 U	1.0	0.029	1	12/01/20 01:11	11/16/20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/g
Lab Code:	KQ2017896-08	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	47	33 - 109	12/01/20 01:11	
18O2-PFHxS	72	36 - 120	12/01/20 01:11	
13C4-PFOS	73	32 - 130	12/01/20 01:11	
13C4-PFBA	78	34 - 116	12/01/20 01:11	
13C5-PFPeA	87	39 - 133	12/01/20 01:11	
13C2-PFHxA	89	32 - 136	12/01/20 01:11	
13C4-PFHpA	71	36 - 133	12/01/20 01:11	
13C4-PFOA	76	31 - 134	12/01/20 01:11	
13C5-PFNA	87	27 - 133	12/01/20 01:11	
13C2-PFDA	72	30 - 137	12/01/20 01:11	
13C2-PFUnDA	83	32 - 146	12/01/20 01:11	
13C2-PFDoDA	96	36 - 136	12/01/20 01:11	
13C2-PFTeDA	117	39 - 138	12/01/20 01:11	
13C8-FOSA	88	40 - 132	12/01/20 01:11	
D3-MeFOSAA	111	20 - 154	12/01/20 01:11	
D5-EtFOSAA	79	29 - 153	12/01/20 01:11	
13C2-6:2 FTS	82	30 - 140	12/01/20 01:11	
13C2-8:2 FTS	76	9 - 171	12/01/20 01:11	

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QA/QC Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010361
Project:	Rochester REDI/1940100197	**Date Analyzed:**	12/01/20
Sample Matrix:	Soil	**Date Extracted:**	11/16/20

Lab Control Sample Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method:	PFC/537M	**Units:**	ng/g
Prep Method:	ALS SOP	**Basis:**	Dry
		Analysis Lot:	705346

Lab Control Sample
KQ2017896-07

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	7.77	7.61	102	69-147
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	7.63	7.68	99	66-141
N-Ethyl perfluorooctane sulfonamidoacetic acid	8.68	8.00	108	57-159
N-Methyl perfluorooctane sulfonamidoacetic acid	7.45	8.00	93	69-162
Perfluorobutane sulfonic acid (PFBS)	6.71	7.10	95	48-148
Perfluorobutanoic acid (PFBA)	9.36	8.00	117	29-179
Perfluorodecane sulfonic acid (PFDS)	9.97	7.72	129	83-152
Perfluorodecanoic acid (PFDA)	9.42	8.00	118	73-142
Perfluorododecanoic acid (PFDoDA)	8.23	8.00	103	69-150
Perfluoroheptane sulfonic acid (PFHpS)	6.55	7.63	86	69-173
Perfluoroheptanoic acid (PFHpA)	7.42	8.00	93	73-136
Perfluorohexane sulfonic acid (PFHxS)	6.81	7.30	93	75-142
Perfluorohexanoic acid (PFHxA)	8.96	8.00	112	68-148
Perfluorononanoic acid (PFNA)	8.66	8.00	108	63-160
Perfluorooctane sulfonamide (FOSA)	8.14	8.00	102	63-138
Perfluorooctane sulfonic acid (PFOS)	8.14	7.43	109	72-141
Perfluorooctanoic acid (PFOA)	9.02	8.00	113	77-151
Perfluoropentanoic acid (PFPeA)	8.19	8.00	102	64-131
Perfluorotetradecanoic acid (PFTeDA)	7.09	8.00	89	70-143
Perfluorotridecanoic acid (PFTrDA)	6.94	8.00	87	63-134
Perfluoroundecanoic acid (PFUnDA)	8.69	8.00	109	69-147

December 21, 2020 Service Request No:R2010643

Ms. Deborah Wright
O'Brien & Gere Engineers, Incorporated
333 West Washington Street
Syracuse, NY 13221

Laboratory Results for: Rochester REDI

Dear Ms.Wright,

Enclosed are the results of the sample(s) submitted to our laboratory November 10, 2020
For your reference, these analyses have been assigned our service request number **R2010643.**

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: Amanda Young

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

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI
Sample Matrix: Soil

Service Request: R2010643
Date Received: 11/10/2020

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:

Two soil samples were received for analysis at ALS Environmental on 11/10/2020. 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.

Semivoa GC:

No significant anomalies were noted with this analysis.

General Chemistry:

No significant anomalies were noted with this analysis.

Subcontracted Analytical Parameters:

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

Approved by _____ Date 12/21/2020

SAMPLE DETECTION SUMMARY

CLIENT ID: WEB4-0-2-11102020			Lab ID: R2010643-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Cyanide, Total	1.63			0.29	mg/Kg	9012B
pH	8.21				pH Units	9045D
Total Solids	85.5				Percent	ALS SOP

CLIENT ID: WF2B6-2-4-11102020			Lab ID: R2010643-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Cyanide, Total	2.08			0.30	mg/Kg	9012B
pH	7.50				pH Units	9045D
Total Solids	82.0				Percent	ALS SOP

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: Ramboll US Corp (Syracuse) **Service Request:**R2010643
Project: Rochester REDI/1940100197

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2010643-001	WEB4-0-2-11102020	11/10/2020	1148
R2010643-002	WF2B6-2-4-11102020	11/10/2020	1400

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com
BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com
MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
NEWCASTLE 5/585 Maitland Rd Mayfield West NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com
NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 02 4423 2063 E: nowra@alsglobal.com
PERTH 10 Hod Way, Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com
WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: Ramboll	TURNAROUND REQUIREMENTS: ☒ Standard TAT (List due date): Standard TAT	FOR LABORATORY USE ONLY (Circle)
OFFICE: Rochester, NY	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
PROJECT: Rochester REDI	ALS QUOTE NO.: Rochester REDI Quote	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: Deb Wright/Rick Duff CONTACT PH: 315-546-4541	OF: 1 2 3 4 5 6 7	Other comment:
SAMPLER: Veronica Davies SAMPLER MOBILE: 8569700012	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (NO) EDD FORMAT (or default):	Veronica Davies	Deborah Wright
Email Reports to (will default to PM if no other addresses are listed): deborah.wright@ramboll.com/ amanda.young@ramboll.com	DATE/TIME: 11/10/2020	DATE/TIME: 11/10/2020 1630
Email Invoice to (will default to PM if no other addresses are listed): AccountspayableUS@Ramboll.com	RELINQUISHED BY: DATE/TIME:	RECEIVED BY: DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED Including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).													Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	TCLP SV 8270D, Pest 8081, Herb 8151, Metals 6010C	TCLP 8260C	Ignitability 1030	Reactivity 9010/ Corrosivity 1110	TCN 9014	PCB 8082			8260 VOCs + 10	SV 8270D +20, Pest 8081B, PCB 8082, SV 8270+20 SIM	TAL Metals 6010B, Hg 7471A, , CN 9010B	PFAS 537.1		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	WEB4-0-2-11102020	11/10/20 11:48	S	Soil	12	X	X	X	X	X	X			X	X	X	X	X	Terra Kit 1 (4 containers)
	WE2B6 24-11102020	11/10/2020 14200	S	Soil	12	X	X	X	X	X	X			X	X	X	X	X	Terra Kit 1 (4 containers)
				TOTAL															

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

R2010643 5
O'Brien & Gere Engineers, Incorporated
Rochester REDI

R2010643 5
O'Brien & Gere Engineers, Incorporated
Rochester REDI

Cooler Receipt and Preservation Check Form

Project/Client Ramboll Folder Number

Cooler received on 11/10/2020 by: @

COURIER: ALS UPS FEDEX VELOCITY (CLIENT)

1	Were **Custody seals** on outside of cooler?	Y (N)	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/ROC) 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: 11/10/2020 Time: 1635 ID: IR#7 (IR#10) From: (Temp Blank) Sample Bottle

Observed Temp (°C)	5.0						
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: R-002 by @ on 11/10/20 at 1639
5035 samples placed in storage location: _____ by _____ on _____ at _____ within 48 hours of sampling? (Y) N

Cooler Breakdown/Preservation Check**: Date: 11/11/2020 Time: 1455 by: @

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		HNO_3								
≤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	-	-						
		HCl	**	**						

**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: 081020-ISR, 081720-ITW
Explain all Discrepancies/ Other Comments:

Read 5035 kit labels completely blank.

HPROD	BULK
HTR	FLDT
(SUB)	HGFB
ALS	LL3541

Labels secondary reviewed by: @
PC Secondary Review: _____ 11/13/20 *significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
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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 Method Reporting Limit. Also known as:
LOQ Limit of Quantitation (LOQ)
The lowest concentration at which the method analyte may be reliably quantified under the method conditions.

MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).

LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.

ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State 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: Ramboll US Corp (Syracuse) **Service Request:** R2010643
Project: Rochester REDI/1940100197

Non-Certified Analytes

Certifying Agency: New York Department of Health

Method	Matrix	Analyte
ALS SOP	Soil	Total Solids

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010643
Project: Rochester REDI/1940100197

Sample Name: WEB4-0-2-11102020 **Date Collected:** 11/10/20
Lab Code: R2010643-001 **Date Received:** 11/10/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
8082A	KSERCU	BALLGEIER
9012B	GNITAJOUPPI	GNITAJOUPPI
9045D		STALARICO
ALS SOP		KAWONG

Sample Name: WF2B6-2-4-11102020 **Date Collected:** 11/10/20
Lab Code: R2010643-002 **Date Received:** 11/10/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
8082A	KSERCU	BALLGEIER
9012B	GNITAJOUPPI	GNITAJOUPPI
9045D		STALARICO
ALS SOP		KAWONG

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

Semivolatile Organic Compounds by GC

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

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010643
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Units:**	ug/Kg
Lab Code:	R2010643-001	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	39 U	39	1	11/24/20 16:13	11/13/20	
Aroclor 1221	79 U	79	1	11/24/20 16:13	11/13/20	
Aroclor 1232	39 U	39	1	11/24/20 16:13	11/13/20	
Aroclor 1242	39 U	39	1	11/24/20 16:13	11/13/20	
Aroclor 1248	39 U	39	1	11/24/20 16:13	11/13/20	
Aroclor 1254	39 U	39	1	11/24/20 16:13	11/13/20	
Aroclor 1260	39 U	39	1	11/24/20 16:13	11/13/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	79	22 - 128	11/24/20 16:13	
Tetrachloro-m-xylene	60	14 - 119	11/24/20 16:13	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010643
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 14:00
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WF2B6-2-4-11102020	**Units:**	ug/Kg
Lab Code:	R2010643-002	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	41 U	41	1	11/24/20 16:33	11/13/20	
Aroclor 1221	83 U	83	1	11/24/20 16:33	11/13/20	
Aroclor 1232	41 U	41	1	11/24/20 16:33	11/13/20	
Aroclor 1242	41 U	41	1	11/24/20 16:33	11/13/20	
Aroclor 1248	41 U	41	1	11/24/20 16:33	11/13/20	
Aroclor 1254	41 U	41	1	11/24/20 16:33	11/13/20	
Aroclor 1260	41 U	41	1	11/24/20 16:33	11/13/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	68	22 - 128	11/24/20 16:33	
Tetrachloro-m-xylene	56	14 - 119	11/24/20 16:33	

General Chemistry

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www.alsglobal.com

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010643
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Basis:**	Dry
Lab Code:	R2010643-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	**1.63**	mg/Kg	0.29	1	11/19/20 11:17	11/17/20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010643
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Basis:**	As Received
Lab Code:	R2010643-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
pH	9045D	**8.21**	pH Units	-	1	11/12/20 14:45	NA	H
Total Solids	ALS SOP	**85.5**	Percent	-	1	11/21/20 05:15	NA	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010643
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 14:00
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WF2B6-2-4-11102020	**Basis:**	Dry
Lab Code:	R2010643-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	**2.08**	mg/Kg	0.30	1	11/19/20 11:18	11/17/20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010643
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 14:00
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WF2B6-2-4-11102020	**Basis:**	As Received
Lab Code:	R2010643-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
pH	9045D	**7.50**	pH Units	-	1	11/12/20 14:45	NA	H
Total Solids	ALS SOP	**82.0**	Percent	-	1	11/21/20 05:15	NA	

QC Summary Forms

ALS Environmental—Rochester Laboratory
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Semivolatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory
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Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010643
Project: Rochester REDI/1940100197
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Extraction Method: EPA 3541

Sample Name	Lab Code	Decachlorobiphenyl 22-128	Tetrachloro-m-xylene 14-119
WEB4-0-2-11102020	R2010643-001	79	60
WF2B6-2-4-11102020	R2010643-002	68	56
Method Blank	RQ2013972-01	78	58
Lab Control Sample	RQ2013972-04	84	59
Duplicate Lab Control Sample	RQ2013972-05	87	78

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010643
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2013972-01	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	33 U	33	1	11/24/20 14:35	11/13/20	
Aroclor 1221	68 U	68	1	11/24/20 14:35	11/13/20	
Aroclor 1232	33 U	33	1	11/24/20 14:35	11/13/20	
Aroclor 1242	33 U	33	1	11/24/20 14:35	11/13/20	
Aroclor 1248	33 U	33	1	11/24/20 14:35	11/13/20	
Aroclor 1254	33 U	33	1	11/24/20 14:35	11/13/20	
Aroclor 1260	33 U	33	1	11/24/20 14:35	11/13/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	78	22 - 128	11/24/20 14:35	
Tetrachloro-m-xylene	58	14 - 119	11/24/20 14:35	

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010643
Date Analyzed: 11/24/20

Duplicate Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs) by GC

Units:ug/Kg
Basis: Dry

			Lab Control Sample		Duplicate Lab Control Sample					
			RQ2013972-04		RQ2013972-05					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1016	8082A	113	166	68	127	168	76	41-127	12	30
Aroclor 1260	8082A	129	166	78	131	168	78	37-127	2	30

General Chemistry

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Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010643
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	Dry
Lab Code:	R2010643-MB		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	0.30 U	mg/Kg	0.30	1	11/19/20 11:13	11/17/20	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010643
Project	Rochester REDI/1940100197	**Date Collected:**	11/10/20
Sample Matrix:	Soil	**Date Received:**	11/10/20
		Date Analyzed:	11/12/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	WEB4-0-2-11102020	**Units:**	pH Units
Lab Code:	R2010643-001	**Basis:**	As Received

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample R2010643-001DUP Result	Average	RPD	RPD Limit
pH	9045D	-	8.21	8.21	8.21	<1	0.10

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.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010643
Project	Rochester REDI/1940100197	**Date Collected:**	11/10/20
Sample Matrix:	Soil	**Date Received:**	11/10/20
		Date Analyzed:	11/21/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	WF2B6-2-4-11102020	**Units:**	Percent
Lab Code:	R2010643-002	**Basis:**	As Received

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample R2010643-002DUP Result	Average	RPD	RPD Limit
Total Solids	ALS SOP	-	82.0	82.3	82.1	<1	20

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.

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010643
Date Analyzed: 11/19/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/Kg
Basis: Dry

Lab Control Sample
R2010643-LCS1

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Cyanide, Total	9012B	3.12	3.00	104	85-115

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010643
Date Analyzed: 11/19/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/Kg
Basis: Dry

Lab Control Sample
R2010643-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Cyanide, Total	9012B	17.5	18.0	97	85-115

Subcontracted Analytical Parameters

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November 24, 2020

Reports and Invoices
ALS Environmental
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Building 300, Suite 360
Rochester, NY 14623

Certificate of Analysis

Project Name:	**Custom EDD & QC, No MDL**	Workorder:	**3140796**
Purchase Order:	**58-R2010643**	Workorder ID:	**AER529|R2010643**

Dear Reports Invoices:

Enclosed are the analytical results for samples received by the laboratory on Friday, November 13, 2020.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Sarah S Leung (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. Michael Chevalier , Mr. Brady Kalkman , Ms. Janice Jaeger

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Ms. Sarah S Leung
Project Coordinator

SAMPLE SUMMARY

Workorder: 3140796 AER529|R2010643

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3140796001	WEB4-0-2-11102020	Solid	11/10/2020 11:48	11/13/2020 08:50	Collected by Client
3140796002	WF2B6-2-4-11102020	Solid	11/10/2020 14:00	11/13/2020 08:50	Collected by Client

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SAMPLE SUMMARY

Workorder: 3140796 AER529|R2010643

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
-- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

PROJECT SUMMARY

Workorder: 3140796 AER529|R2010643

Sample Comments

Lab ID: 3140796001 **Sample ID:** WEB4-0-2-11102020 **Sample Type:** SAMPLE

The analysis for ignitability is performed using a modified method 1010A that provides a flashpoint temperature for a solid sample.

Lab ID: 3140796002 **Sample ID:** WF2B6-2-4-11102020 **Sample Type:** SAMPLE

The analysis for ignitability is performed using a modified method 1010A that provides a flashpoint temperature for a solid sample.

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ANALYTICAL RESULTS

Workorder: 3140796 AER529|R2010643

Lab ID: **3140796001** Date Collected: 11/10/2020 11:48 Matrix: Solid

Sample ID: **WEB4-0-2-11102020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 VOLATILE ORGANIC										
Benzene	ND		ug/L	20.0	SW846 8260C			11/19/20 13:40	DPC	C
2-Butanone	ND		ug/L	200	SW846 8260C			11/19/20 13:40	DPC	C
Carbon Tetrachloride	ND		ug/L	20.0	SW846 8260C			11/19/20 13:40	DPC	C
Chlorobenzene	ND		ug/L	20.0	SW846 8260C			11/19/20 13:40	DPC	C
Chloroform	ND		ug/L	20.0	SW846 8260C			11/19/20 13:40	DPC	C
1,2-Dichloroethane	ND		ug/L	20.0	SW846 8260C			11/19/20 13:40	DPC	C
1,1-Dichloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 13:40	DPC	C
Tetrachloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 13:40	DPC	C
Trichloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 13:40	DPC	C
Vinyl Chloride	ND		ug/L	20.0	SW846 8260C			11/19/20 13:40	DPC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	96.6		%	62 - 133	SW846 8260C			11/19/20 13:40	DPC	C
4-Bromofluorobenzene (S)	102		%	79 - 114	SW846 8260C			11/19/20 13:40	DPC	C
Dibromofluoromethane (S)	92.4		%	78 - 116	SW846 8260C			11/19/20 13:40	DPC	C
Toluene-d8 (S)	91.2		%	76 - 127	SW846 8260C			11/19/20 13:40	DPC	C
TCLP EPA 1311 PESTICIDES										
gamma-BHC	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:48	KJH	A
Chlordane	ND		ug/L	10.0	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:48	KJH	A
Endrin	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:48	KJH	A
Heptachlor	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:48	KJH	A
Heptachlor Epoxide	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:48	KJH	A
Methoxychlor	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:48	KJH	A
Toxaphene	ND		ug/L	20.0	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:48	KJH	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	120		%	30 - 140	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:48	KJH	A
Decachlorobiphenyl. (S)	119		%	30 - 140	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:48	KJH	A
Tetrachloro-m-xylene (S)	19.1	6	%	30 - 123	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:48	KJH	A
Tetrachloro-m-xylene. (S)	19.2	7	%	30 - 123	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:48	KJH	A
WET CHEMISTRY										
Cyanide, Reactive	ND		mg/kg	10	SW-846 7.3CN	11/22/20 15:10	VXF	11/23/20 14:06	CTD	A
Ignitability	See Comment	1,2	Deg. F		SW-846 1010AM			11/20/20 07:30	II	C
Moisture	13.7		%	0.1	S2540G-11			11/14/20 06:15	AXD	
Sulfide, Reactive	6.4		mg/kg	6.2	SW846 7.3	11/22/20 15:10	VXF	11/22/20 19:35	VXF	A
Total Solids	86.3		%	0.1	S2540G-11			11/14/20 06:15	AXD	

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ANALYTICAL RESULTS

Workorder: 3140796 AER529|R2010643

Lab ID: **3140796001** Date Collected: 11/10/2020 11:48 Matrix: Solid

Sample ID: **WEB4-0-2-11102020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 METALS										
Arsenic, Total	ND		mg/L	0.14	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:35	SRT	A
Barium, Total	ND		mg/L	2.8	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:35	SRT	A
Cadmium, Total	ND		mg/L	0.011	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:35	SRT	A
Chromium, Total	ND		mg/L	0.028	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:35	SRT	A
Lead, Total	ND		mg/L	0.033	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:35	SRT	A
Mercury, Total	ND		mg/L	0.0020	SW846 7470A	11/19/20 05:54	MSA	11/19/20 16:43	MSA	A
Selenium, Total	ND		mg/L	0.11	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:35	SRT	A
Silver, Total	ND		mg/L	0.022	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:35	SRT	A
TCLP EPA 1311 SEMI-VOLATILES										
mp-Cresol	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:08	DHF	C
o-Cresol	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:08	DHF	C
1,4-Dichlorobenzene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:08	DHF	C
2,4-Dinitrotoluene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:08	DHF	C
Hexachlorobenzene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:08	DHF	C
Hexachlorobutadiene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:08	DHF	C
Hexachloroethane	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:08	DHF	C
Nitrobenzene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:08	DHF	C
Pentachlorophenol	ND		ug/L	120	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:08	DHF	C
Pyridine	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:08	DHF	C
2,4,5-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:08	DHF	C
2,4,6-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:08	DHF	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	70.1		%	47 - 128	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:08	DHF	C
2-Fluorobiphenyl (S)	34	3,4, 5	%	52 - 118	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:08	DHF	C
2-Fluorophenol (S)	43.4		%	20 - 87	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:08	DHF	C
Nitrobenzene-d5 (S)	63.4		%	27 - 139	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:08	DHF	C
Phenol-d5 (S)	29.5		%	10 - 81	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:08	DHF	C
Terphenyl-d14 (S)	89.3		%	46 - 133	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:08	DHF	C
TCLP EPA 1311 HERBICIDES										
2,4-D	ND		ug/L	20.0	SW846 8151A	11/19/20 16:25	DXL	11/20/20 17:56	AK	A
2,4,5-TP	ND		ug/L	4.0	SW846 8151A	11/19/20 16:25	DXL	11/20/20 17:56	AK	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4-Dichlorophenylacetic acid (S)	84.7		%	14 - 172	SW846 8151A	11/19/20 16:25	DXL	11/20/20 17:56	AK	A

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ANALYTICAL RESULTS

Workorder: 3140796 AER529|R2010643

Lab ID: **3140796001** Date Collected: 11/10/2020 11:48 Matrix: Solid

Sample ID: **WEB4-0-2-11102020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*

Ms. Sarah S Leung
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3140796 AER529|R2010643

Lab ID: **3140796002** Date Collected: 11/10/2020 14:00 Matrix: Solid

Sample ID: **WF2B6-2-4-11102020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 VOLATILE ORGANIC										
Benzene	ND		ug/L	20.0	SW846 8260C			11/19/20 14:02	DPC	C
2-Butanone	ND		ug/L	200	SW846 8260C			11/19/20 14:02	DPC	C
Carbon Tetrachloride	ND		ug/L	20.0	SW846 8260C			11/19/20 14:02	DPC	C
Chlorobenzene	ND		ug/L	20.0	SW846 8260C			11/19/20 14:02	DPC	C
Chloroform	ND		ug/L	20.0	SW846 8260C			11/19/20 14:02	DPC	C
1,2-Dichloroethane	ND		ug/L	20.0	SW846 8260C			11/19/20 14:02	DPC	C
1,1-Dichloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 14:02	DPC	C
Tetrachloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 14:02	DPC	C
Trichloroethene	ND		ug/L	20.0	SW846 8260C			11/19/20 14:02	DPC	C
Vinyl Chloride	ND		ug/L	20.0	SW846 8260C			11/19/20 14:02	DPC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	95.3		%	62 - 133	SW846 8260C			11/19/20 14:02	DPC	C
4-Bromofluorobenzene (S)	102		%	79 - 114	SW846 8260C			11/19/20 14:02	DPC	C
Dibromofluoromethane (S)	90.6		%	78 - 116	SW846 8260C			11/19/20 14:02	DPC	C
Toluene-d8 (S)	91.6		%	76 - 127	SW846 8260C			11/19/20 14:02	DPC	C
TCLP EPA 1311 PESTICIDES										
gamma-BHC	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:59	KJH	A
Chlordane	ND		ug/L	10.0	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:59	KJH	A
Endrin	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:59	KJH	A
Heptachlor	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:59	KJH	A
Heptachlor Epoxide	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:59	KJH	A
Methoxychlor	ND		ug/L	0.40	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:59	KJH	A
Toxaphene	ND		ug/L	20.0	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:59	KJH	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	117		%	30 - 140	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:59	KJH	A
Decachlorobiphenyl. (S)	117		%	30 - 140	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:59	KJH	A
Tetrachloro-m-xylene (S)	33.3		%	30 - 123	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:59	KJH	A
Tetrachloro-m-xylene. (S)	32.9		%	30 - 123	SW846 8081B	11/19/20 13:10	LEH	11/20/20 16:59	KJH	A
WET CHEMISTRY										
Cyanide, Reactive	ND		mg/kg	10	SW-846 7.3CN	11/22/20 15:10	VXF	11/23/20 14:06	CTD	A
Ignitability	See Comment	1,2	Deg. F		SW-846 1010AM			11/20/20 07:30	II	C
Moisture	16.8		%	0.1	S2540G-11			11/14/20 06:15	AXD	
Sulfide, Reactive	ND		mg/kg	6.2	SW846 7.3	11/22/20 15:10	VXF	11/22/20 19:35	VXF	A
Total Solids	83.2		%	0.1	S2540G-11			11/14/20 06:15	AXD	

ANALYTICAL RESULTS

Workorder: 3140796 AER529|R2010643

Lab ID: **3140796002** Date Collected: 11/10/2020 14:00 Matrix: Solid

Sample ID: **WF2B6-2-4-11102020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 METALS										
Arsenic, Total	ND		mg/L	0.14	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:39	SRT	A
Barium, Total	ND		mg/L	2.8	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:39	SRT	A
Cadmium, Total	ND		mg/L	0.011	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:39	SRT	A
Chromium, Total	ND		mg/L	0.028	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:39	SRT	A
Lead, Total	ND		mg/L	0.033	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:39	SRT	A
Mercury, Total	ND		mg/L	0.0020	SW846 7470A	11/19/20 05:54	MSA	11/19/20 16:45	MSA	A
Selenium, Total	ND		mg/L	0.11	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:39	SRT	A
Silver, Total	ND		mg/L	0.022	SW846 6010C	11/18/20 16:15	SXC	11/19/20 14:39	SRT	A
TCLP EPA 1311 SEMI-VOLATILES										
mp-Cresol	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:35	DHF	C
o-Cresol	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:35	DHF	C
1,4-Dichlorobenzene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:35	DHF	C
2,4-Dinitrotoluene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:35	DHF	C
Hexachlorobenzene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:35	DHF	C
Hexachlorobutadiene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:35	DHF	C
Hexachloroethane	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:35	DHF	C
Nitrobenzene	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:35	DHF	C
Pentachlorophenol	ND		ug/L	120	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:35	DHF	C
Pyridine	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:35	DHF	C
2,4,5-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:35	DHF	C
2,4,6-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:35	DHF	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	46.9	6	%	47 - 128	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:35	DHF	C
2-Fluorobiphenyl (S)	32.5	3,4, 5	%	52 - 118	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:35	DHF	C
2-Fluorophenol (S)	30.4		%	20 - 87	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:35	DHF	C
Nitrobenzene-d5 (S)	67.1		%	27 - 139	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:35	DHF	C
Phenol-d5 (S)	28		%	10 - 81	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:35	DHF	C
Terphenyl-d14 (S)	97.2		%	46 - 133	SW846 8270D	11/19/20 10:35	MXL	11/21/20 11:35	DHF	C
TCLP EPA 1311 HERBICIDES										
2,4-D	ND		ug/L	20.0	SW846 8151A	11/19/20 16:25	DXL	11/20/20 18:22	AK	A
2,4,5-TP	ND		ug/L	4.0	SW846 8151A	11/19/20 16:25	DXL	11/20/20 18:22	AK	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4-Dichlorophenylacetic acid (S)	87.1		%	14 - 172	SW846 8151A	11/19/20 16:25	DXL	11/20/20 18:22	AK	A

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3140796 AER529|R2010643

Lab ID: **3140796002** Date Collected: 11/10/2020 14:00 Matrix: Solid

Sample ID: **WF2B6-2-4-11102020** Date Received: 11/13/2020 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*

Ms. Sarah S Leung
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3140796 AER529|R2010643

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3140796001	1	WEB4-0-2-11102020	SW-846 1010AM	Ignitability
According to Pa/USEPA regulations, this sample is not considered to be ignitable. (Ref 40 CFR 261.21)				
3140796001	2	WEB4-0-2-11102020	SW-846 1010AM	Ignitability
Sample did not flash up to 199°F				
3140796001	3	WEB4-0-2-11102020	SW846 8270D	2-Fluorobiphenyl
The surrogate 2-Fluorobiphenyl for method SW846 8270D was outside of control limits in the batch method blank. The % Recovery was reported as 37.8 and the control limits were 52 to 118. This result was reported at a dilution of 1.				
3140796001	4	WEB4-0-2-11102020	SW846 8270D	2-Fluorobiphenyl
The surrogate 2-Fluorobiphenyl for method EPA 625.1 was outside of control limits in the batch laboratory control spike. The % Recovery was reported as 51.4 and the control limits were 52 to 118. This result was reported at a dilution of 1.				
3140796001	5	WEB4-0-2-11102020	SW846 8270D	2-Fluorobiphenyl
The surrogate 2-Fluorobiphenyl for method SW846 8270D was outside of control limits. The % Recovery was reported as 34 and the control limits were 52 to 118. This result was reported at a dilution of 1.				
3140796001	6	WEB4-0-2-11102020	SW846 8081B	Tetrachloro-m-xylene
The surrogate Tetrachloro-m-xylene for method SW846 8081B was outside of control limits. The % Recovery was reported as 19.1 and the control limits were 30 to 123. This result was reported at a dilution of 1.				
3140796001	7	WEB4-0-2-11102020	SW846 8081B	Tetrachloro-m-xylene.
The surrogate Tetrachloro-m-xylene. for method SW846 8081B was outside of control limits. The % Recovery was reported as 19.2 and the control limits were 30 to 123. This result was reported at a dilution of 1.				
3140796002	1	WF2B6-2-4-11102020	SW-846 1010AM	Ignitability
According to Pa/USEPA regulations, this sample is not considered to be ignitable. (Ref 40 CFR 261.21)				
3140796002	2	WF2B6-2-4-11102020	SW-846 1010AM	Ignitability
Sample did not flash up to 199°F				
3140796002	3	WF2B6-2-4-11102020	SW846 8270D	2-Fluorobiphenyl
The surrogate 2-Fluorobiphenyl for method SW846 8270D was outside of control limits in the batch method blank. The % Recovery was reported as 37.8 and the control limits were 52 to 118. This result was reported at a dilution of 1.				
3140796002	4	WF2B6-2-4-11102020	SW846 8270D	2-Fluorobiphenyl
The surrogate 2-Fluorobiphenyl for method EPA 625.1 was outside of control limits in the batch laboratory control spike. The % Recovery was reported as 51.4 and the control limits were 52 to 118. This result was reported at a dilution of 1.				
3140796002	5	WF2B6-2-4-11102020	SW846 8270D	2-Fluorobiphenyl
The surrogate 2-Fluorobiphenyl for method SW846 8270D was outside of control limits. The % Recovery was reported as 32.5 and the control limits were 52 to 118. This result was reported at a dilution of 1.				
3140796002	6	WF2B6-2-4-11102020	SW846 8270D	2,4,6-Tribromophenol
The surrogate 2,4,6-Tribromophenol for method SW846 8270D was outside of control limits. The % Recovery was reported as 46.9 and the control limits were 47 to 128. This result was reported at a dilution of 1.				

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3140796 AER529|R2010643

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3140796001	WEB4-0-2-11102020	S2540G-11		
3140796001	WEB4-0-2-11102020	SW-846 1010AM		
3140796001	WEB4-0-2-11102020	SW-846 7.3CN	SW-846 7.3CN	
3140796001	WEB4-0-2-11102020	SW846 6010C	SW846 3015	SW846 1311
3140796001	WEB4-0-2-11102020	SW846 7.3	SW846 7.3	
3140796001	WEB4-0-2-11102020	SW846 7470A	SW846 7470A	SW846 1311
3140796001	WEB4-0-2-11102020	SW846 8081B	SW846 3511	SW846 1311
3140796001	WEB4-0-2-11102020	SW846 8151A	SW846 8151A	SW846 1311
3140796001	WEB4-0-2-11102020	SW846 8260C		SW846 1311
3140796001	WEB4-0-2-11102020	SW846 8270D	SW846 3510C	SW846 1311
3140796002	WF2B6-2-4-11102020	S2540G-11		
3140796002	WF2B6-2-4-11102020	SW-846 1010AM		
3140796002	WF2B6-2-4-11102020	SW-846 7.3CN	SW-846 7.3CN	
3140796002	WF2B6-2-4-11102020	SW846 6010C	SW846 3015	SW846 1311
3140796002	WF2B6-2-4-11102020	SW846 7.3	SW846 7.3	
3140796002	WF2B6-2-4-11102020	SW846 7470A	SW846 7470A	SW846 1311
3140796002	WF2B6-2-4-11102020	SW846 8081B	SW846 3511	SW846 1311
3140796002	WF2B6-2-4-11102020	SW846 8151A	SW846 8151A	SW846 1311
3140796002	WF2B6-2-4-11102020	SW846 8260C		SW846 1311
3140796002	WF2B6-2-4-11102020	SW846 8270D	SW846 3510C	SW846 1311

QUALITY CONTROL DATA

Workorder: 3140796 AER529|R2010643

QC Batch: EXTR/62710 **Analysis Method:** SW846 8270D

QC Batch Method: SW846 3510C

Associated Lab Samples: 3140796001, 3140796002

METHOD BLANK: 3235991

Parameter	Blank Result	Units	Reporting Limit
mp-Cresol	ND	ug/L	3.0
o-Cresol	ND	ug/L	3.0
1,4-Dichlorobenzene	ND	ug/L	3.0
2,4-Dinitrotoluene	ND	ug/L	3.0
Hexachlorobenzene	ND	ug/L	3.0
Hexachlorobutadiene	ND	ug/L	3.0
Hexachloroethane	ND	ug/L	3.0
Nitrobenzene	ND	ug/L	3.0
Pentachlorophenol	ND	ug/L	6.0
Pyridine	ND	ug/L	3.0
2,4,5-Trichlorophenol	ND	ug/L	3.0
2,4,6-Trichlorophenol	ND	ug/L	3.0
2,4,6-Tribromophenol (S)	78.6	%	47 - 128
2-Fluorobiphenyl (S)	37.8	%	52 - 118
2-Fluorophenol (S)	42.3	%	20 - 87
Nitrobenzene-d5 (S)	65.5	%	27 - 139
Phenol-d5 (S)	27.2	%	10 - 81
Terphenyl-d14 (S)	89.5	%	46 - 133

LABORATORY CONTROL SAMPLE: 3235992

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
mp-Cresol	77.2	ug/L	100	77.2	28 - 128
o-Cresol	83.9	ug/L	100	83.9	34 - 136
1,4-Dichlorobenzene	55.2	ug/L	50	27.6	5 - 116
2,4-Dinitrotoluene	93.3	ug/L	50	46.7	49 - 138
Hexachlorobenzene	80.7	ug/L	50	40.4	59 - 109
Hexachlorobutadiene	57.4	ug/L	50	28.7	5 - 126
Hexachloroethane	49	ug/L	50	24.5	5 - 111
Nitrobenzene	84.9	ug/L	50	42.4	41 - 128
Pentachlorophenol	98.3	ug/L	100	98.3	41 - 149
Pyridine	58.3	ug/L	50	29.2	5 - 115
2,4,5-Trichlorophenol	96.6	ug/L	100	96.6	44 - 148
2,4,6-Trichlorophenol	90.9	ug/L	100	90.9	41 - 148
2,4,6-Tribromophenol (S)	92.7	%			47 - 128

QUALITY CONTROL DATA

Workorder: 3140796 AER529|R2010643

2-Fluorobiphenyl (S)	51.4*	%	52 - 118
2-Fluorophenol (S)	59.4	%	20 - 87
Nitrobenzene-d5 (S)	83.2	%	27 - 139
Phenol-d5 (S)	40.7	%	10 - 81
Terphenyl-d14 (S)	99.4	%	46 - 133

QUALITY CONTROL DATA

Workorder: 3140796 AER529|R2010643

QC Batch: EXTR/62721 **Analysis Method:** SW846 8081B

QC Batch Method: SW846 3511

Associated Lab Samples: 3140796001, 3140796002

METHOD BLANK: 3236314

Parameter	Blank Result	Units	Reporting Limit
gamma-BHC	ND	ug/L	0.020
Chlordane	ND	ug/L	0.50
Endrin	ND	ug/L	0.020
Heptachlor	ND	ug/L	0.020
Heptachlor Epoxide	ND	ug/L	0.020
Methoxychlor	ND	ug/L	0.020
Toxaphene	ND	ug/L	1.0
Decachlorobiphenyl (S)	134	%	30 - 140
Decachlorobiphenyl. (S)	130	%	30 - 140
Tetrachloro-m-xylene (S)	37.1	%	30 - 123
Tetrachloro-m-xylene. (S)	37.2	%	30 - 123

LABORATORY CONTROL SAMPLE: 3236315

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
gamma-BHC	96.5	ug/L	.5	0.48	58 - 138
Chlordane		ug/L		ND	
Endrin	95.9	ug/L	.5	0.48	58 - 143
Heptachlor	77.2	ug/L	.5	0.39	41 - 124
Heptachlor Epoxide	105	ug/L	.5	0.52	62 - 131
Methoxychlor	118	ug/L	.5	0.59	56 - 140
Toxaphene		ug/L		ND	
Decachlorobiphenyl (S)	113	%			30 - 140
Decachlorobiphenyl. (S)	110	%			30 - 140
Tetrachloro-m-xylene (S)	32.4	%			30 - 123
Tetrachloro-m-xylene. (S)	32.8	%			30 - 123

MATRIX SPIKE: 3236316 DUPLICATE: 3236317 ORIGINAL: 3140621002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
gamma-BHC	0	ug/L	10	11.5116	9.9086	115	99.1	58 - 138	15	30

QUALITY CONTROL DATA

Workorder: 3140796 AER529|R2010643

Endrin	0	ug/L	10	10.8384	9.4517	108	94.5	58 - 143	13.7	28
Heptachlor	0	ug/L	10	9.5101	8.0663	95.1	80.7	41 - 124	16.4	28
Heptachlor Epoxide	0	ug/L	10	12.2207	10.6958	122	107	62 - 131	13.3	27
Methoxychlor	0	ug/L	10	12.6252	11.4411	126	114	56 - 140	9.84	21
Decachlorobiphenyl (S)	72.9	%				72.9	87.6	30 - 140		
Decachlorobiphenyl. (S)	72.6	%				72.6	86.1	30 - 140		
Tetrachloro-m-xylene (S)	50.8	%				50.8	37.9	30 - 123		
Tetrachloro-m-xylene. (S)	51.6	%				51.6	38.4	30 - 123		

MATRIX SPIKE: 3236318 DUPLICATE: 3236319 ORIGINAL: 3140621001

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
gamma-BHC	0	ug/L	10	9.3912	9.2194	93.9	92.2	58 - 138	1.85	30
Endrin	0	ug/L	10	8.9511	8.7367	89.5	87.4	58 - 143	2.42	28
Heptachlor	0	ug/L	10	8.0732	7.3255	80.7	73.3	41 - 124	9.71	28
Heptachlor Epoxide	0	ug/L	10	10.0617	10.3537	101	104	62 - 131	2.86	27
Methoxychlor	0	ug/L	10	11.1297	10.3433	111	103	56 - 140	7.32	21
Decachlorobiphenyl (S)	127	%				127	120	30 - 140		
Decachlorobiphenyl. (S)	125	%				125	117	30 - 140		
Tetrachloro-m-xylene (S)	65.2	%				65.2	47.8	30 - 123		
Tetrachloro-m-xylene. (S)	63.3	%				63.3	46.9	30 - 123		

QUALITY CONTROL DATA

Workorder: 3140796 AER529|R2010643

QC Batch: EXTR/62722 **Analysis Method:** SW846 8151A

QC Batch Method: SW846 8151A

Associated Lab Samples: 3140796001, 3140796002

METHOD BLANK: 3236346

Parameter	Blank Result	Units	Reporting Limit
2,4-D	ND	ug/L	1.0
2,4,5-TP	ND	ug/L	0.20
2,4-Dichlorophenylacetic acid (S)	85.7	%	14 - 172

LABORATORY CONTROL SAMPLE: 3236347

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
2,4-D	95.6	ug/L	2	1.9	56 - 156
2,4,5-TP	104	ug/L	2	2.1	58 - 123
2,4-Dichlorophenylacetic acid (S)	96.4	%			14 - 172

MATRIX SPIKE: 3236348 DUPLICATE: 3236349 ORIGINAL: 3140621002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
2,4-D	0	ug/L	40	34.6263	33.306	86.6	83.3	56 - 156	3.89	17
2,4,5-TP	0	ug/L	40	39.8398	35.4263	99.6	88.6	58 - 123	11.7	16
2,4-Dichlorophenylacetic acid (S)	101	%				101	107	14 - 172		

MATRIX SPIKE: 3236350 DUPLICATE: 3236351 ORIGINAL: 3140621001

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
2,4-D	2.0072	ug/L	40	32.145	37.4734	75.3	88.7	56 - 156	15.3	17
2,4,5-TP	0	ug/L	40	41.8559	36.8034	105	92	58 - 123	12.8	16
2,4-Dichlorophenylacetic acid (S)	265	%				265*	164	14 - 172		

QUALITY CONTROL DATA

Workorder: 3140796 AER529|R2010643

QUALITY CONTROL DATA

Workorder: 3140796 AER529|R2010643

QC Batch: MDIG/86916 **Analysis Method:** SW846 6010C

QC Batch Method: SW846 3015

Associated Lab Samples: 3140796001, 3140796002

METHOD BLANK: 3235535

Parameter	Blank Result	Units	Reporting Limit
Arsenic, Total	ND	mg/L	0.028
Barium, Total	ND	mg/L	0.56
Cadmium, Total	ND	mg/L	0.0022
Chromium, Total	ND	mg/L	0.0056
Lead, Total	ND	mg/L	0.0067
Selenium, Total	ND	mg/L	0.022
Silver, Total	ND	mg/L	0.0044

LABORATORY CONTROL SAMPLE: 3235536

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Arsenic, Total	104	mg/L	.11	0.12	80 - 120
Barium, Total	105	mg/L	1.1	1.2	80 - 120
Cadmium, Total	103	mg/L	.11	0.11	80 - 120
Chromium, Total	103	mg/L	.11	0.11	80 - 120
Lead, Total	104	mg/L	.11	0.12	80 - 120
Selenium, Total	102	mg/L	1.1	1.1	80 - 120
Silver, Total	87.2	mg/L	.11	0.097	80 - 120

MATRIX SPIKE: 3235539 DUPLICATE: 3235540 ORIGINAL: 3140621002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Arsenic, Total	.02222	mg/L	.11	.14222	.13389	108	100	50 - 150	6.04	20
Barium, Total	.13055	mg/L	1.1	1.30888	1.28665	106	104	50 - 150	1.71	20
Cadmium, Total	.00889	mg/L	.11	.12778	.12667	107	106	50 - 150	.87	20
Chromium, Total	.04389	mg/L	.11	.15944	.15833	104	103	50 - 150	.7	20
Lead, Total	.06833	mg/L	.11	.19055	.18611	110	106	50 - 150	2.36	20
Selenium, Total	0	mg/L	1.1	1.15054	1.13443	104	102	50 - 150	1.41	20
Silver, Total	.00389	mg/L	.11	.03889	.05111	31.5*	42.5*	50 - 150	27.2	20

QUALITY CONTROL DATA

Workorder: 3140796 AER529|R2010643

QC Batch: MDIG/86937 **Analysis Method:** SW846 7470A

QC Batch Method: SW846 7470A

Associated Lab Samples: 3140796001, 3140796002

METHOD BLANK: 3235965

Parameter	Blank Result	Units	Reporting Limit
Mercury, Total	ND	mg/L	0.0020

LABORATORY CONTROL SAMPLE: 3235966

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Mercury, Total	111	mg/L	.002	0.0022	85 - 115

MATRIX SPIKE: 3235969 DUPLICATE: 3235970 ORIGINAL: 3140621002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Mercury, Total	0	mg/L	.005	.00563	.00533	113	107	70 - 130	5.47	20

QUALITY CONTROL DATA

Workorder: 3140796 AER529|R2010643

QC Batch: VOMS/57258 **Analysis Method:** SW846 8260C

QC Batch Method: SW846 8260C

Associated Lab Samples: 3140796001, 3140796002

METHOD BLANK: 3236198

Parameter	Blank Result	Units	Reporting Limit
Benzene	ND	ug/L	1.0
2-Butanone	ND	ug/L	10.0
Carbon Tetrachloride	ND	ug/L	1.0
Chlorobenzene	ND	ug/L	1.0
Chloroform	ND	ug/L	1.0
1,2-Dichloroethane	ND	ug/L	1.0
1,1-Dichloroethene	ND	ug/L	1.0
Tetrachloroethene	ND	ug/L	1.0
Trichloroethene	ND	ug/L	1.0
Vinyl Chloride	ND	ug/L	1.0
1,2-Dichloroethane-d4 (S)	95.2	%	62 - 133
4-Bromofluorobenzene (S)	103	%	79 - 114
Dibromofluoromethane (S)	92.2	%	78 - 116
Toluene-d8 (S)	92.5	%	76 - 127

LABORATORY CONTROL SAMPLE: 3236199

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Benzene	111	ug/L	20	22.1	80 - 124
2-Butanone	97.3	ug/L	100	97.3	50 - 152
Carbon Tetrachloride	104	ug/L	20	20.7	62 - 132
Chlorobenzene	101	ug/L	20	20.1	85 - 117
Chloroform	106	ug/L	20	21.1	78 - 122
1,2-Dichloroethane	105	ug/L	20	21.1	70 - 133
1,1-Dichloroethene	119	ug/L	20	23.8	63 - 128
Tetrachloroethene	101	ug/L	20	20.2	72 - 124
Trichloroethene	100	ug/L	20	20.0	77 - 124
Vinyl Chloride	110	ug/L	20	22.0	27 - 138
1,2-Dichloroethane-d4 (S)	93.4	%			62 - 133
4-Bromofluorobenzene (S)	99.3	%			79 - 114
Dibromofluoromethane (S)	92.8	%			78 - 116
Toluene-d8 (S)	92	%			76 - 127

QUALITY CONTROL DATA

Workorder: 3140796 AER529|R2010643

QC Batch: WCPR/53089 **Analysis Method:** SW-846 7.3CN

QC Batch Method: SW-846 7.3CN

Associated Lab Samples: 3140796001, 3140796002

METHOD BLANK: 3237773

Parameter	Blank Result	Units	Reporting Limit
Cyanide, Reactive	ND	mg/kg	10

LABORATORY CONTROL SAMPLE: 3237774

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Cyanide, Reactive	10.3	mg/kg	9.9	ND	0 - 92

SAMPLE DUPLICATE: 3237775 ORIGINAL: 3142329001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Cyanide, Reactive	0	mg/kg	0	NC	20

QUALITY CONTROL DATA

Workorder: 3140796 AER529|R2010643

QC Batch: WCPR/53090 **Analysis Method:** SW846 7.3

QC Batch Method: SW846 7.3

Associated Lab Samples: 3140796001, 3140796002

METHOD BLANK: 3237781

Parameter	Blank Result	Units	Reporting Limit
Sulfide, Reactive	ND	mg/kg	6.2

LABORATORY CONTROL SAMPLE: 3237782

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Sulfide, Reactive	67.4	mg/kg	568	383	49 - 148

SAMPLE DUPLICATE: 3237783 ORIGINAL: 3142329001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Sulfide, Reactive	5.58047	mg/kg	7.98403	35.4*	20

QUALITY CONTROL DATA

Workorder: 3140796 AER529|R2010643

QC Batch: WETC/246967 **Analysis Method:** S2540G-11

QC Batch Method: S2540G-11

Associated Lab Samples: 3140796001, 3140796002

SAMPLE DUPLICATE: 3233463 ORIGINAL: 3140478004

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	99.7017	%	99.7448	.04	10
Total Solids	.2982	%	.2551	15.6*	5

SAMPLE DUPLICATE: 3233464 ORIGINAL: 3140621003

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	79.5814	%	79.8013	.28	10
Total Solids	20.4185	%	20.1986	1.08	5

SAMPLE DUPLICATE: 3233465 ORIGINAL: 3140730002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	99.2361	%	99.2502	.01	10
Total Solids	.7638	%	.7497	1.86	5

SAMPLE DUPLICATE: 3233466 ORIGINAL: 3140763001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	82.02	%	81.8571	.2	10
Total Solids	17.9799	%	18.1428	.9	5

SAMPLE DUPLICATE: 3233467 ORIGINAL: 3140793002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	22.0238	%	22.0058	.08	10
Total Solids	77.9761	%	77.9941	.02	5

QUALITY CONTROL DATA

Workorder: 3140796 AER529|R2010643

QC Batch: WETC/247311 **Analysis Method:** SW846 7.3

QC Batch Method: SW846 7.3

Associated Lab Samples:

METHOD BLANK: 3237814

Parameter	Blank Result	Units	Reporting Limit
Sulfide, Reactive	ND	mg/kg	6.3

METHOD BLANK: 3237816

Parameter	Blank Result	Units	Reporting Limit
Sulfide, Reactive	ND	mg/kg	6.3

METHOD BLANK: 3237818

Parameter	Blank Result	Units	Reporting Limit
Sulfide, Reactive	ND	mg/kg	6.3

METHOD BLANK: 3237820

Parameter	Blank Result	Units	Reporting Limit
Sulfide, Reactive	ND	mg/kg	6.3

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 3140796 AER529|R2010643

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
3140796001	WEB4-0-2-11102020			S2540G-11	WETC/246967
3140796002	WF2B6-2-4-11102020			S2540G-11	WETC/246967
3140796001	WEB4-0-2-11102020	SW846 3015	MDIG/86916	SW846 6010C	META/77570
3140796002	WF2B6-2-4-11102020	SW846 3015	MDIG/86916	SW846 6010C	META/77570
3140796001	WEB4-0-2-11102020	SW846 7470A	MDIG/86937	SW846 7470A	META/77591
3140796002	WF2B6-2-4-11102020	SW846 7470A	MDIG/86937	SW846 7470A	META/77591
3140796001	WEB4-0-2-11102020	SW846 3510C	EXTR/62710	SW846 8270D	SVMS/37386
3140796002	WF2B6-2-4-11102020	SW846 3510C	EXTR/62710	SW846 8270D	SVMS/37386
3140796001	WEB4-0-2-11102020			SW846 8260C	VOMS/57258
3140796002	WF2B6-2-4-11102020			SW846 8260C	VOMS/57258
3140796001	WEB4-0-2-11102020	SW846 3511	EXTR/62721	SW846 8081B	SVGC/58928
3140796002	WF2B6-2-4-11102020	SW846 3511	EXTR/62721	SW846 8081B	SVGC/58928
3140796001	WEB4-0-2-11102020	SW846 8151A	EXTR/62722	SW846 8151A	SVGC/58932
3140796002	WF2B6-2-4-11102020	SW846 8151A	EXTR/62722	SW846 8151A	SVGC/58932
3140796001	WEB4-0-2-11102020	SW-846 7.3CN	WCPR/53089	SW-846 7.3CN	WETC/247264
3140796002	WF2B6-2-4-11102020	SW-846 7.3CN	WCPR/53089	SW-846 7.3CN	WETC/247264
3140796001	WEB4-0-2-11102020	SW846 7.3	WCPR/53090	SW846 7.3	WETC/247311
3140796002	WF2B6-2-4-11102020	SW846 7.3	WCPR/53090	SW846 7.3	WETC/247311

ALS Environmental Chain of Custody

1565 Jefferson Rd, Building 300 • Rochester, NY 14623 • 585-288-5380 • FAX 585-288-8475

ALS Co

3140796

Project Number: R2010643
Project Manager: Janice Jaeger
QAP: LAB QAP

Lab Code	Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Lab ID	Ag TCLP 6010C	As TCLP 6010C	Ba TCLP 6010C	Cd TCLP 6010C	CN React 9014	Cr TCLP 6010C	Flash 1010A Modif	HERB_TCLP 8151A	Hg TCLP 7470A
~~R2010643-001~~	WEB4-0-2-11102020	3	Soil	11/10/20	1148	Middletown ALS	X	X	X	X	X	X	X	X	X
~~R2010643-002~~	WF2B6-2-4-11102020	3	Soil	11/10/20	1400	Middletown ALS	X	X	X	X	X	X	X	X	X

Folder Comments:
MRL U need tier 2 and 4

2° 309

Special Instructions/Comments
nysdec eguis v4 edd

H - Test is On Hold P - Test is Authorized for Prep Only

Turnaround Requirements
___ **RUSH** (Surcharges Apply)
PLEASE CIRCLE WORK DAYS
1 2 3 4 5
X **STANDARD**
Requested FAX Date: _____
Requested Report Date: 11/27/20

Report Requirements
___ I. Results Only
X II. Results + QC Summaries
___ III. Results + QC and Calibration Summaries
X IV. Data Validation Report with Raw Data
PQL/MDL/J N
EDD Y

Invoice Information
PO# 58R2010643
Bill to

Relinquished By: [signature] 11/12/2020/ 1320 Received By: Fedex Airbill Number: _____

Fedex 11/13/20 0850 SEC 11/13/20 0850

R2010643-001	WEB4-0-2-11102020		Soil	11/10/20	1148	Middletown ALS	X	X	X	X	X	X	X	X	X
R2010643-002	WF2B6-2-4-11102020		Soil	11/10/20	1400	Middletown ALS	X	X	X	X	X	X	X	X	X

R2010643

X **Ship To: Middletown ALS**
ALS Environmental - Middletown
301 Fulling Mill Rd.
Middletown, PA 17057

PC [signature] Date 11/11/20
SMO _____ Date _____

Instructions:

Ice _____
Dry Ice _____
No Ice _____

Shipping:

Overnight _____
2nd Day _____
Ground _____

Bill to Client Account _____

Comments:

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

301 Fulling Mill Road
Middletown, PA 17057
P: (717) 944-5541
F: (717) 944-1430

Condition of Sample Receipt Form

Client: ALS Rochester | Work Order #: 3140796 | Initials: SEC | Date: 11/13/20

1. Were airbills / tracking numbers present and recorded?	NONE	(YES)	NO
Tracking number: 1730 2433 3852			
2. Are Custody Seals on shipping containers intact?	(NONE)	YES	NO
3. Are Custody Seals on sample containers intact?	(NONE)	YES	NO
4. Is there a COC (Chain-of-Custody) present?		(YES)	NO
5. Are the COC and bottle labels complete, legible and in agreement?		YES	(NO)
5a. Does the COC contain sample locations?		(YES)	NO
5b. Does the COC contain date and time of sample collection for all samples?		(YES)	NO
5c. Does the COC contain sample collectors name?		YES	(NO)
5d. Does the COC note the type(s) of preservation for all bottles?		YES	(NO)
5e. Does the COC note the number of bottles submitted for each sample?		(YES)	NO
5f. Does the COC note the type of sample, composite or grab?		YES	(NO)
5g. Does the COC note the matrix of the sample(s)?		(YES)	NO
6. Are all aqueous samples requiring preservation preserved correctly?[1]	N/A	(YES)	NO
7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?		(YES)	NO
8. Are all samples within holding times for the requested analyses?		(YES)	NO
9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)		(YES)	NO
10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?	(N/A)	YES	NO
11. Were the samples received on ice?		(YES)	NO
12. Were sample temperatures measured at 0.0-6.0°C		(YES)	NO
13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below		YES	(NO)
13a. Are the samples required for SDWA compliance reporting?	(N/A)	YES	NO
13b. Did the client provide a SDWA PWS ID#?	(N/A)	YES	NO
13c. Are all aqueous unpreserved SDWA samples pH 5-9?	(N/A)	YES	NO
13d. Did the client provide the SDWA sample location ID/Description?	(N/A)	YES	NO
13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?	(N/A)	YES	NO

Cooler #: _____

Temperature (°C): 2.0

Thermometer ID: 309

Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

[1]Final determination of correct preservation for analysis such as volatiles, microbiology, and oil and grease is made in the analytical department at the time of or following the analysis

Rev 1/20/2020

December 24, 2020 Service Request No:R2010644

Ms. Deborah Wright
O'Brien & Gere Engineers, Incorporated
333 West Washington Street
Syracuse, NY 13221

Laboratory Results for: Rochester REDI

Dear Ms.Wright,

Enclosed are the results of the sample(s) submitted to our laboratory November 10, 2020
For your reference, these analyses have been assigned our service request number **R2010644.**

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: Amanda Young

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: Ramboll US Corp (Syracuse) **Service Request:** R2010644
Project: Rochester REDI **Date Received:** 11/10/2020
Sample Matrix: Soil

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:

Two soil samples were received for analysis at ALS Environmental on 11/10/2020. 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.

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

Semivolatiles by GC/MS:

Method 8270D, 11/25/2020: The Method Blank contained a low level of one or more analytes at concentrations above the Method Detection Limit (MDL). Since there were no detections of the analyte(s) in the associated field samples, the data quality was not significantly affected and no further corrective action was taken.

Method 8270D, 11/25/2020: 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.

Method 8270D, 12/17/2020: 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.

Instrument quantitation and calibration conditions were not able to be maintained for hexachlorocyclopentadiene due to the matrix of samples in this or a preceding analytical batch. “This analyte exhibits known difficulties with reproducibility, response, recovery, stability, and/or chromatography that may reduce the overall quality or confidence in the result when using this preparation method combined with analysis by Method 8270” (Section 1.1 of EPA Method 8270E, rev 6, June 2018, SW-846 Update VI).

Method 8270D, R2010644-001: The control limits for one or more surrogates in the sample are not applicable. The analysis of the sample required a dilution, which resulted in a surrogate concentration below the Method Reporting Limit (MRL). No further corrective action was appropriate.

Method 8270D, 12/17/2020: The matrix spike recovery of one or more of the spiked analytes was outside of control limits because of sample sample. The sample contained a background concentration of the analyte such that sample heterogeneity significantly affected the spike recovery calculation. No further corrective action was required.

Method 8270D, R2010644-001: The upper control limit was exceeded for one or more surrogates due to sample matrix.

Semivoa GC:

Method 8081B, 11/20/2020: 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 8081B, 11/20/2020: The control limits were exceeded for analytes in the Continuing Calibration Verification (CCV). The

Approved by _____ Date 12/24/2020

QC failure was most likely due to the composition of the sample(s) immediately preceding the failing CCV. In order to protect the integrity of the instrument, no further corrective action was taken. Results should be considered estimated. Samples ran 2x with the same results to the closing ccv.

Method 8081B, 12/16/2020: The control limits were exceeded for analytes in the Continuing Calibration Verification (CCV). The QC failure was most likely due to the composition of the sample(s) immediately preceding the failing CCV. In order to protect the integrity of the instrument, no further corrective action was taken. Results should be considered estimated. Sample ran 2x with the same result to the closing ccv.

Method 8081B, r2010644-001,002: The Method Reporting Limit (MRL) was elevated due to dark matrix of the sample that required a dilution.

Method 8081B, r2010644-001,002: The control limits were exceeded for one or more surrogates due to suspected matrix interferences. Due to the dark color of the matix is suspected of adversely affecting the recovery. No further corrective action was appropriate.

Method 8081B, 11/19/2020: The lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. The analytes affected are flagged in the LCS Summary.
Samples to be re-extracted.
Method 8081B, 11/19/2020: 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 8081B, 11/19/2020: 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 8081B, 11/19/2020: The control limits were exceeded for analytes in the Continuing Calibration Verification (CCV). The QC failure was most likely due to the composition of the sample(s) immediately preceding the failing CCV. In order to protect the integrity of the instrument, no further corrective action was taken. Results should be considered estimated. Samples ran 2X with the same result to the closing ccv.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

No significant anomalies were noted with this analysis.

Subcontracted Analytical Parameters:

No significant anomalies were noted with this analysis.

Volatiles by GC/MS:

Method 8260C, 11/15/2020: 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, 11/15/2020: 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, 11/15/2020, R2010644-002: The recovery of one or more internal standards was outside control limits because

Approved by _____ Date 12/24/2020

ALS Environmental

of suspected matrix interference. The sample was re-extracted and reanalyzed, but produced similar results. No further corrective action was appropriate.

Method 8260C, 11/15/2020: 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 12/24/2020

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: Ramboll US Corp (Syracuse) **Service Request:**R2010644
Project: Rochester REDI/1940100197

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2010644-001	WEB4-0-2-11102020	11/10/2020	1148
R2010644-002	WF2B6-2-4-11102020	11/10/2020	1400

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com
BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com
MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
NEWCASTLE 5/585 Maitland Rd Mayfield West NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com
NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com
PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com
WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: Ramboll	TURNAROUND REQUIREMENTS: (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	☒ Standard TAT (List due date): Standard TAT ☐ Non Standard or urgent TAT (List due date):
OFFICE: Rochester, NY		
PROJECT: Rochester REDI	ALS QUOTE NO.: Rochester REDI Quote	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7
ORDER NUMBER:		OF: 1 2 3 4 5 6 7
PROJECT MANAGER: Deb Wright/Rick Duff	CONTACT PH: 315-546-4541	
SAMPLER: Veronica Davies	SAMPLER MOBILE: 856 470 0042	
COC emailed to ALS? (NO)	EDD FORMAT (or default):	
Email Reports to (will default to PM if no other addresses are listed): deborah.wright@ramboll.com/ emanda.young@ramboll.com		
Email Invoice to (will default to PM if no other addresses are listed): AccountspayableUS@Ramboll.com		

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:	°C		
Other comment:			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Veronica Davies			
DATE/TIME: 11/10/2020	DATE/TIME: 11/10/2020 1630	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).													Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	TCLP SV 8270D, Pest 8081, Herb 8151, Metals 6010C	TCLP 8260C	Ignitability 1030	Reactivity 9010/ Corrosivity 1110	TCN 9014	PCB 8082			8260 VOCs + 10	SV 8270D +20, Pest 8081B, PCB 8082, SV 8270+20 SIM	TAL Metals 6010B, Hg 7471A, CN 9010B	PFAS 537.1		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	WEB4-0-2-11102020	11/10/20 11:48	S	Soil	12	X	X	X	X	X	X			X	X	X	X	X	Terra Kit 1 (4 containers)
	WF2B6 24-11102020	11/10/2020 14:00	S	Soil	12	X	X	X	X	X	X			X	X	X	X	X	Terra Kit 1 (4 containers)
				TOTAL															

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic; [illegible] Preserved Glass; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; [illegible]; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

R2010644 5
O'Brien & Gere Engineers, Incorporated
Rochester REDI

R2010644 5
O'Brien & Gere Engineers, Incorporated
Rochester REDI

Cooler Receipt and Preservation Check Form

Project/Client Rochester Folder Number

Cooler received on 11/10/2020 by: @

COURIER: ALS UPS FEDEX VELOCITY (CLIENT)

1	Were Custody seals on outside of cooler?	Y (N)	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/ROC) 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: 11/10/2020 Time: 1635 ID: IR#7 (IR#10) From: (Temp Blank) Sample Bottle

Observed Temp (°C)	5.0						
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: R-002 by @ on 11/10/20 at 1629

5035 samples placed in storage location: _____ by _____ on _____ at _____ within 48 hours of sampling? (Y) N

Cooler Breakdown/Preservation Check**: Date: 11/11/2020 Time: 1507 by: @

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		HNO_3								
≤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	-	-						
		HCl	**	**						

**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: 090720-1SR, 081720-1TW

Explain all Discrepancies/ Other Comments:

Rec'd 5035 kits labels completely blank

HPROD	BULK
HTR	FLDT
(SUB)	HGFB
ALS	LL3541

Labels secondary reviewed by: @

PC Secondary Review: CNA 11/12/20

*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 Method Reporting Limit. Also known as:
LOQ Limit of Quantitation (LOQ)
The lowest concentration at which the method analyte may be reliably quantified under the method conditions.

MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).

LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.

ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State 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: Ramboll US Corp (Syracuse) **Service Request:** R2010644
Project: Rochester REDI/1940100197

Non-Certified Analytes

Certifying Agency: New York Department of Health

Method	Matrix	Analyte
ALS SOP	Soil	Total Solids

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010644
Project: Rochester REDI/1940100197

Sample Name: WEB4-0-2-11102020 **Date Collected:** 11/10/20
Lab Code: R2010644-001 **Date Received:** 11/10/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
160.3 Modified		LAGUILAR
6010C	AKONZEL	KMCLAEN
7471B	AKONZEL	KMCLAEN
8081B	KSERCU	BALLGEIER
8082A	KSERCU	BALLGEIER
8260C		FNAEGLER
8270D	KSERCU	JMISIUREWICZ
9012B	GNITAJOUPPI	GNITAJOUPPI
ALS SOP		KAWONG
PFC/537M	MSESSIONS	CCONOVER

Sample Name: WEB4-0-2-11102020 **Date Collected:** 11/10/20
Lab Code: R2010644-001.R01 **Date Received:** 11/10/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
8081B	KSERCU	BALLGEIER
8270D	KSERCU	JMISIUREWICZ

Sample Name: WEB4-0-2-11102020 **Date Collected:** 11/10/20
Lab Code: R2010644-001.R02 **Date Received:** 11/10/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
8270D	KSERCU	JMISIUREWICZ

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010644
Project: Rochester REDI/1940100197

Sample Name: WF2B6-2-4-11102020 **Date Collected:** 11/10/20
Lab Code: R2010644-002 **Date Received:** 11/10/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
160.3 Modified		LAGUILAR
6010C	AKONZEL	KMCLAEN
7471B	AKONZEL	KMCLAEN
8081B	KSERCU	BALLGEIER
8082A	KSERCU	BALLGEIER
8260C		FNAEGLER
8270D	KSERCU	JMISIUREWICZ
9012B	GNITAJOUPPI	GNITAJOUPPI
ALS SOP		KAWONG
PFC/537M	MSESSIONS	CCONOVER

Sample Name: WF2B6-2-4-11102020 **Date Collected:** 11/10/20
Lab Code: R2010644-002.R01 **Date Received:** 11/10/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
8081B	KSERCU	BALLGEIER
8260C		FNAEGLER

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

Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
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www.alsglobal.com

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-001	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
1,1,2,2-Tetrachloroethane	6.0 U	6.0	0.54	1.04	11/15/20 14:14	
1,1,2-Trichloroethane	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
1,1,2-Trichloro-1,2,2-trifluoroethane	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
1,1-Dichloroethane (1,1-DCA)	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
1,1-Dichloroethene (1,1-DCE)	6.0 U	6.0	0.35	1.04	11/15/20 14:14	
1,2,3-Trichlorobenzene	6.0 U	6.0	0.63	1.04	11/15/20 14:14	
1,2,4-Trichlorobenzene	6.0 U	6.0	0.51	1.04	11/15/20 14:14	
1,2-Dibromo-3-chloropropane (DBCP)	6.0 U	6.0	0.91	1.04	11/15/20 14:14	
1,2-Dibromoethane	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
1,2-Dichlorobenzene	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
1,2-Dichloroethane	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
1,2-Dichloropropane	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
1,3-Dichlorobenzene	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
1,4-Dichlorobenzene	6.0 U	6.0	0.27	1.04	11/15/20 14:14	
1,4-Dioxane	120 U	120	25	1.04	11/15/20 14:14	
2-Butanone (MEK)	6.0 U	6.0	2.5	1.04	11/15/20 14:14	
2-Hexanone	6.0 U	6.0	0.44	1.04	11/15/20 14:14	
4-Methyl-2-pentanone	6.0 U	6.0	0.28	1.04	11/15/20 14:14	
Acetone	**8.4**	6.0	5.7	1.04	11/15/20 14:14	
Benzene	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
Bromochloromethane	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
Bromodichloromethane	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
Bromoform	6.0 U	6.0	0.61	1.04	11/15/20 14:14	
Bromomethane	6.0 U	6.0	2.6	1.04	11/15/20 14:14	
Carbon Disulfide	6.0 U	6.0	0.35	1.04	11/15/20 14:14	
Carbon Tetrachloride	6.0 U	6.0	0.32	1.04	11/15/20 14:14	
Chlorobenzene	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
Chloroethane	6.0 U	6.0	0.50	1.04	11/15/20 14:14	
Chloroform	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
Chloromethane	6.0 U	6.0	1.7	1.04	11/15/20 14:14	
Cyclohexane	6.0 U	6.0	0.32	1.04	11/15/20 14:14	
Dibromochloromethane	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
Dichlorodifluoromethane (CFC 12)	6.0 U	6.0	0.40	1.04	11/15/20 14:14	
Dichloromethane	6.0 U	6.0	3.4	1.04	11/15/20 14:14	
Ethylbenzene	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
Isopropylbenzene (Cumene)	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
Methyl Acetate	6.0 U	6.0	1.1	1.04	11/15/20 14:14	
Methyl tert-Butyl Ether	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
Methylcyclohexane	6.0 U	6.0	0.38	1.04	11/15/20 14:14	
Styrene	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
Tetrachloroethene (PCE)	6.0 U	6.0	0.28	1.04	11/15/20 14:14	
Toluene	6.0 U	6.0	0.25	1.04	11/15/20 14:14	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-001	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	6.0 U	6.0	0.27	1.04	11/15/20 14:14	
Trichlorofluoromethane (CFC 11)	6.0 U	6.0	0.32	1.04	11/15/20 14:14	
Vinyl Chloride	6.0 U	6.0	0.56	1.04	11/15/20 14:14	
cis-1,2-Dichloroethene	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
cis-1,3-Dichloropropene	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
m,p-Xylenes	12 U	12	0.45	1.04	11/15/20 14:14	
o-Xylene	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
trans-1,2-Dichloroethene	6.0 U	6.0	0.25	1.04	11/15/20 14:14	
trans-1,3-Dichloropropene	6.0 U	6.0	0.25	1.04	11/15/20 14:14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	89	31 - 154	11/15/20 14:14	
Dibromofluoromethane	121	63 - 138	11/15/20 14:14	
Toluene-d8	111	66 - 138	11/15/20 14:14	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 14:00
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WF2B6-2-4-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-002	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
1,1,2,2-Tetrachloroethane	7.6 U	7.6	0.68	1.27	11/15/20 15:24	
1,1,2-Trichloroethane	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
1,1,2-Trichloro-1,2,2-trifluoroethane	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
1,1-Dichloroethane (1,1-DCA)	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
1,1-Dichloroethene (1,1-DCE)	7.6 U	7.6	0.45	1.27	11/15/20 15:24	
1,2,3-Trichlorobenzene	7.6 U	7.6	0.80	1.27	11/15/20 15:24	
1,2,4-Trichlorobenzene	7.6 U	7.6	0.65	1.27	11/15/20 15:24	
1,2-Dibromo-3-chloropropane (DBCP)	7.6 U	7.6	1.2	1.27	11/15/20 15:24	
1,2-Dibromoethane	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
1,2-Dichlorobenzene	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
1,2-Dichloroethane	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
1,2-Dichloropropane	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
1,3-Dichlorobenzene	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
1,4-Dichlorobenzene	7.6 U	7.6	0.34	1.27	11/15/20 15:24	
1,4-Dioxane	150 U	150	31	1.27	11/15/20 15:24	
2-Butanone (MEK)	**3.6 J**	7.6	3.1	1.27	11/15/20 15:24	
2-Hexanone	7.6 U	7.6	0.55	1.27	11/15/20 15:24	
4-Methyl-2-pentanone	7.6 U	7.6	0.36	1.27	11/15/20 15:24	
Acetone	**27**	7.6	7.2	1.27	11/15/20 15:24	
Benzene	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
Bromochloromethane	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
Bromodichloromethane	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
Bromoform	7.6 U	7.6	0.77	1.27	11/15/20 15:24	
Bromomethane	7.6 U	7.6	3.3	1.27	11/15/20 15:24	
Carbon Disulfide	7.6 U	7.6	0.45	1.27	11/15/20 15:24	
Carbon Tetrachloride	7.6 U	7.6	0.40	1.27	11/15/20 15:24	
Chlorobenzene	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
Chloroethane	7.6 U	7.6	0.63	1.27	11/15/20 15:24	
Chloroform	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
Chloromethane	7.6 U	7.6	2.2	1.27	11/15/20 15:24	
Cyclohexane	**0.58 J**	7.6	0.40	1.27	11/15/20 15:24	
Dibromochloromethane	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
Dichlorodifluoromethane (CFC 12)	7.6 U	7.6	0.51	1.27	11/15/20 15:24	
Dichloromethane	7.6 U	7.6	4.3	1.27	11/15/20 15:24	
Ethylbenzene	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
Isopropylbenzene (Cumene)	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
Methyl Acetate	7.6 U	7.6	1.3	1.27	11/15/20 15:24	
Methyl tert-Butyl Ether	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
Methylcyclohexane	**1.1 J**	7.6	0.48	1.27	11/15/20 15:24	
Styrene	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
Tetrachloroethene (PCE)	7.6 U	7.6	0.36	1.27	11/15/20 15:24	
Toluene	7.6 U	7.6	0.31	1.27	11/15/20 15:24	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 14:00
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WF2B6-2-4-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-002	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	7.6 U	7.6	0.34	1.27	11/15/20 15:24	
Trichlorofluoromethane (CFC 11)	**1.9 J**	7.6	0.40	1.27	11/15/20 15:24	
Vinyl Chloride	7.6 U	7.6	0.71	1.27	11/15/20 15:24	
cis-1,2-Dichloroethene	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
cis-1,3-Dichloropropene	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
m,p-Xylenes	15 U	15	0.57	1.27	11/15/20 15:24	
o-Xylene	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
trans-1,2-Dichloroethene	7.6 U	7.6	0.31	1.27	11/15/20 15:24	
trans-1,3-Dichloropropene	7.6 U	7.6	0.31	1.27	11/15/20 15:24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	48	31 - 154	11/15/20 15:24	
Dibromofluoromethane	131	63 - 138	11/15/20 15:24	
Toluene-d8	106	66 - 138	11/15/20 15:24	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 14:00
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WF2B6-2-4-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-002	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
1,1,2,2-Tetrachloroethane	7.7 U	7.7	0.68	1.28	11/15/20 15:01	
1,1,2-Trichloroethane	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
1,1,2-Trichloro-1,2,2-trifluoroethane	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
1,1-Dichloroethane (1,1-DCA)	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
1,1-Dichloroethene (1,1-DCE)	7.7 U	7.7	0.45	1.28	11/15/20 15:01	
1,2,3-Trichlorobenzene	7.7 U	7.7	0.80	1.28	11/15/20 15:01	
1,2,4-Trichlorobenzene	7.7 U	7.7	0.65	1.28	11/15/20 15:01	
1,2-Dibromo-3-chloropropane (DBCP)	7.7 U	7.7	1.2	1.28	11/15/20 15:01	
1,2-Dibromoethane	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
1,2-Dichlorobenzene	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
1,2-Dichloroethane	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
1,2-Dichloropropane	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
1,3-Dichlorobenzene	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
1,4-Dichlorobenzene	7.7 U	7.7	0.34	1.28	11/15/20 15:01	
1,4-Dioxane	150 U	150	31	1.28	11/15/20 15:01	
2-Butanone (MEK)	7.7 U	7.7	3.1	1.28	11/15/20 15:01	
2-Hexanone	7.7 U	7.7	0.56	1.28	11/15/20 15:01	
4-Methyl-2-pentanone	7.7 U	7.7	0.36	1.28	11/15/20 15:01	
Acetone	**16**	7.7	7.3	1.28	11/15/20 15:01	
Benzene	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
Bromochloromethane	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
Bromodichloromethane	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
Bromoform	7.7 U	7.7	0.77	1.28	11/15/20 15:01	
Bromomethane	7.7 U	7.7	3.3	1.28	11/15/20 15:01	
Carbon Disulfide	7.7 U	7.7	0.45	1.28	11/15/20 15:01	
Carbon Tetrachloride	7.7 U	7.7	0.40	1.28	11/15/20 15:01	
Chlorobenzene	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
Chloroethane	7.7 U	7.7	0.64	1.28	11/15/20 15:01	
Chloroform	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
Chloromethane	7.7 U	7.7	2.2	1.28	11/15/20 15:01	
Cyclohexane	**1.5 J**	7.7	0.40	1.28	11/15/20 15:01	
Dibromochloromethane	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
Dichlorodifluoromethane (CFC 12)	7.7 U	7.7	0.51	1.28	11/15/20 15:01	
Dichloromethane	7.7 U	7.7	4.4	1.28	11/15/20 15:01	
Ethylbenzene	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
Isopropylbenzene (Cumene)	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
Methyl Acetate	7.7 U	7.7	1.3	1.28	11/15/20 15:01	
Methyl tert-Butyl Ether	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
Methylcyclohexane	**2.1 J**	7.7	0.48	1.28	11/15/20 15:01	
Styrene	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
Tetrachloroethene (PCE)	7.7 U	7.7	0.36	1.28	11/15/20 15:01	
Toluene	7.7 U	7.7	0.31	1.28	11/15/20 15:01	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 14:00
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WF2B6-2-4-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-002	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	7.7 U	7.7	0.34	1.28	11/15/20 15:01	
Trichlorofluoromethane (CFC 11)	**1.8 J**	7.7	0.40	1.28	11/15/20 15:01	
Vinyl Chloride	7.7 U	7.7	0.71	1.28	11/15/20 15:01	
cis-1,2-Dichloroethene	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
cis-1,3-Dichloropropene	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
m,p-Xylenes	15 U	15	0.57	1.28	11/15/20 15:01	
o-Xylene	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
trans-1,2-Dichloroethene	7.7 U	7.7	0.31	1.28	11/15/20 15:01	
trans-1,3-Dichloropropene	7.7 U	7.7	0.31	1.28	11/15/20 15:01	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	47	31 - 154	11/15/20 15:01	
Dibromofluoromethane	130	63 - 138	11/15/20 15:01	
Toluene-d8	108	66 - 138	11/15/20 15:01	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Semivolatile Organic Compounds by GC/MS

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

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-001	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	38 U	38	16	1	12/17/20 22:51	11/13/20	
1,4-Dioxane	78 U	78	40	1	12/17/20 22:51	11/13/20	
2,3,4,6-Tetrachlorophenol	38 U	38	14	1	12/17/20 22:51	11/13/20	
2,4,5-Trichlorophenol	38 U	38	8.9	1	12/17/20 22:51	11/13/20	
2,4,6-Trichlorophenol	38 U	38	8.6	1	12/17/20 22:51	11/13/20	
2,4-Dichlorophenol	38 U	38	9.1	1	12/17/20 22:51	11/13/20	
2,4-Dimethylphenol	**41**	38	16	1	12/17/20 22:51	11/13/20	
2,4-Dinitrophenol	39 U	39	12	1	12/17/20 22:51	11/13/20	
2,4-Dinitrotoluene	38 U	38	18	1	12/17/20 22:51	11/13/20	
2,6-Dinitrotoluene	38 U	38	19	1	12/17/20 22:51	11/13/20	
2-Chloronaphthalene	38 U	38	15	1	12/17/20 22:51	11/13/20	
2-Chlorophenol	38 U	38	9.3	1	12/17/20 22:51	11/13/20	
2-Methylnaphthalene	**930 E**	7.7	2.3	1	12/17/20 22:51	11/13/20	
2-Methylphenol	**15 J**	38	8.8	1	12/17/20 22:51	11/13/20	
2-Nitroaniline	38 U	38	20	1	12/17/20 22:51	11/13/20	
2-Nitrophenol	38 U	38	9.1	1	12/17/20 22:51	11/13/20	
3,3'-Dichlorobenzidine	38 U	38	22	1	12/17/20 22:51	11/13/20	
3- and 4-Methylphenol Coelution	**57**	38	9.6	1	12/17/20 22:51	11/13/20	
3-Nitroaniline	38 U	38	8.8	1	12/17/20 22:51	11/13/20	
4,6-Dinitro-2-methylphenol	38 U	38	14	1	12/17/20 22:51	11/13/20	
4-Bromophenyl Phenyl Ether	38 U	38	17	1	12/17/20 22:51	11/13/20	
4-Chloro-3-methylphenol	38 U	38	17	1	12/17/20 22:51	11/13/20	
4-Chloroaniline	38 U	38	12	1	12/17/20 22:51	11/13/20	
4-Chlorophenyl Phenyl Ether	38 U	38	16	1	12/17/20 22:51	11/13/20	
4-Nitroaniline	38 U	38	20	1	12/17/20 22:51	11/13/20	
4-Nitrophenol	38 U	38	30	1	12/17/20 22:51	11/13/20	
Acenaphthene	**1700 E**	7.7	2.0	1	12/17/20 22:51	11/13/20	
Acenaphthylene	**570**	7.7	2.1	1	12/17/20 22:51	11/13/20	
Acetophenone	38 U	38	13	1	12/17/20 22:51	11/13/20	
Anthracene	**3000 E**	7.7	4.7	1	12/17/20 22:51	11/13/20	
Atrazine	38 U	38	11	1	12/17/20 22:51	11/13/20	
Benz(a)anthracene	**8400 E**	7.7	5.8	1	12/17/20 22:51	11/13/20	
Benzaldehyde	38 U	38	18	1	12/17/20 22:51	11/13/20	
Benzo(a)pyrene	**11000 E**	7.7	3.2	1	12/17/20 22:51	11/13/20	
Benzo(b)fluoranthene	**15000 E**	7.7	4.1	1	12/17/20 22:51	11/13/20	
Benzo(g,h,i)perylene	**2800 E**	7.7	3.3	1	12/17/20 22:51	11/13/20	
Benzo(k)fluoranthene	**2700 E**	7.7	4.4	1	12/17/20 22:51	11/13/20	
Biphenyl	**210**	38	9.6	1	12/17/20 22:51	11/13/20	
2,2'-Oxybis(1-chloropropane)	38 U	38	17	1	12/17/20 22:51	11/13/20	
Bis(2-chloroethoxy)methane	38 U	38	16	1	12/17/20 22:51	11/13/20	
Bis(2-chloroethyl) Ether	38 U	38	16	1	12/17/20 22:51	11/13/20	
Bis(2-ethylhexyl) Phthalate	700 U	700	35	1	12/17/20 22:51	11/13/20	
Butyl Benzyl Phthalate	200 U	200	20	1	12/17/20 22:51	11/13/20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-001	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Caprolactam	38 U	38	30	1	12/17/20 22:51	11/13/20	
Carbazole	**1200 E**	38	17	1	12/17/20 22:51	11/13/20	
Chrysene	**6600 E**	7.7	3.2	1	12/17/20 22:51	11/13/20	
Di-n-butyl Phthalate	580 U	580	19	1	12/17/20 22:51	11/13/20	
Di-n-octyl Phthalate	200 U	200	34	1	12/17/20 22:51	11/13/20	
Dibenz(a,h)anthracene	**1100 E**	7.7	3.2	1	12/17/20 22:51	11/13/20	
Dibenzofuran	**1400 E**	7.7	3.4	1	12/17/20 22:51	11/13/20	
Diethyl Phthalate	230 U	230	21	1	12/17/20 22:51	11/13/20	
Dimethyl Phthalate	200 U	200	17	1	12/17/20 22:51	11/13/20	
Fluoranthene	**7500 E**	7.7	5.7	1	12/17/20 22:51	11/13/20	
Fluorene	**1900 E**	7.7	2.0	1	12/17/20 22:51	11/13/20	
Hexachlorobenzene	7.7 U	7.7	2.8	1	12/17/20 22:51	11/13/20	
Hexachlorobutadiene	38 U	38	16	1	12/17/20 22:51	11/13/20	
Hexachlorocyclopentadiene	39 U	39	27	1	12/17/20 22:51	11/13/20	
Hexachloroethane	38 U	38	14	1	12/17/20 22:51	11/13/20	
Indeno(1,2,3-cd)pyrene	**2900 E**	7.7	3.4	1	12/17/20 22:51	11/13/20	
Isophorone	38 U	38	17	1	12/17/20 22:51	11/13/20	
N-Nitrosodi-n-propylamine	38 U	38	14	1	12/17/20 22:51	11/13/20	
N-Nitrosodiphenylamine	38 U	38	13	1	12/17/20 22:51	11/13/20	
Naphthalene	**1900 E**	7.7	2.7	1	12/17/20 22:51	11/13/20	
Nitrobenzene	7.7 U	7.7	3.2	1	12/17/20 22:51	11/13/20	
Pentachlorophenol (PCP)	39 U	39	34	1	12/17/20 22:51	11/13/20	
Phenanthrene	**7100 E**	7.7	4.1	1	12/17/20 22:51	11/13/20	
Phenol	**17 J**	38	11	1	12/17/20 22:51	11/13/20	
Pyrene	**7300 E**	7.7	3.8	1	12/17/20 22:51	11/13/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	113 *	19 - 107	12/17/20 22:51	*
2-Fluorobiphenyl	97	10 - 115	12/17/20 22:51	
2-Fluorophenol	84	10 - 97	12/17/20 22:51	
Nitrobenzene-d5	109	10 - 130	12/17/20 22:51	
Phenol-d6	84	17 - 135	12/17/20 22:51	
Terphenyl-d14	109	10 - 130	12/17/20 22:51	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-001	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	380 U	380	160	10	12/17/20 23:20	11/13/20	
1,4-Dioxane	780 U	780	400	10	12/17/20 23:20	11/13/20	
2,3,4,6-Tetrachlorophenol	380 U	380	140	10	12/17/20 23:20	11/13/20	
2,4,5-Trichlorophenol	380 U	380	89	10	12/17/20 23:20	11/13/20	
2,4,6-Trichlorophenol	380 U	380	86	10	12/17/20 23:20	11/13/20	
2,4-Dichlorophenol	380 U	380	91	10	12/17/20 23:20	11/13/20	
2,4-Dimethylphenol	380 U	380	160	10	12/17/20 23:20	11/13/20	
2,4-Dinitrophenol	390 U	390	120	10	12/17/20 23:20	11/13/20	
2,4-Dinitrotoluene	380 U	380	180	10	12/17/20 23:20	11/13/20	
2,6-Dinitrotoluene	380 U	380	190	10	12/17/20 23:20	11/13/20	
2-Chloronaphthalene	380 U	380	150	10	12/17/20 23:20	11/13/20	
2-Chlorophenol	380 U	380	93	10	12/17/20 23:20	11/13/20	
2-Methylnaphthalene	**790 D**	77	23	10	12/17/20 23:20	11/13/20	
2-Methylphenol	380 U	380	88	10	12/17/20 23:20	11/13/20	
2-Nitroaniline	380 U	380	200	10	12/17/20 23:20	11/13/20	
2-Nitrophenol	380 U	380	91	10	12/17/20 23:20	11/13/20	
3,3'-Dichlorobenzidine	380 U	380	220	10	12/17/20 23:20	11/13/20	
3- and 4-Methylphenol Coelution	380 U	380	96	10	12/17/20 23:20	11/13/20	
3-Nitroaniline	380 U	380	88	10	12/17/20 23:20	11/13/20	
4,6-Dinitro-2-methylphenol	380 U	380	140	10	12/17/20 23:20	11/13/20	
4-Bromophenyl Phenyl Ether	380 U	380	170	10	12/17/20 23:20	11/13/20	
4-Chloro-3-methylphenol	380 U	380	170	10	12/17/20 23:20	11/13/20	
4-Chloroaniline	380 U	380	120	10	12/17/20 23:20	11/13/20	
4-Chlorophenyl Phenyl Ether	380 U	380	160	10	12/17/20 23:20	11/13/20	
4-Nitroaniline	380 U	380	200	10	12/17/20 23:20	11/13/20	
4-Nitrophenol	380 U	380	300	10	12/17/20 23:20	11/13/20	
Acenaphthene	**1300 D**	77	20	10	12/17/20 23:20	11/13/20	
Acenaphthylene	**460 D**	77	21	10	12/17/20 23:20	11/13/20	
Acetophenone	380 U	380	130	10	12/17/20 23:20	11/13/20	
Anthracene	**4000 D**	77	47	10	12/17/20 23:20	11/13/20	
Atrazine	380 U	380	110	10	12/17/20 23:20	11/13/20	
Benz(a)anthracene	**9100 E**	77	58	10	12/17/20 23:20	11/13/20	
Benzaldehyde	380 U	380	180	10	12/17/20 23:20	11/13/20	
Benzo(a)pyrene	**8000 E**	77	32	10	12/17/20 23:20	11/13/20	
Benzo(b)fluoranthene	**8300 E**	77	41	10	12/17/20 23:20	11/13/20	
Benzo(g,h,i)perylene	**3400 D**	77	33	10	12/17/20 23:20	11/13/20	
Benzo(k)fluoranthene	**2800 D**	77	44	10	12/17/20 23:20	11/13/20	
Biphenyl	**180 J**	380	96	10	12/17/20 23:20	11/13/20	
2,2'-Oxybis(1-chloropropane)	380 U	380	170	10	12/17/20 23:20	11/13/20	
Bis(2-chloroethoxy)methane	380 U	380	160	10	12/17/20 23:20	11/13/20	
Bis(2-chloroethyl) Ether	380 U	380	160	10	12/17/20 23:20	11/13/20	
Bis(2-ethylhexyl) Phthalate	7000 U	7000	350	10	12/17/20 23:20	11/13/20	
Butyl Benzyl Phthalate	2000 U	2000	200	10	12/17/20 23:20	11/13/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-001	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Caprolactam	380	U	380	300	10	12/17/20 23:20	11/13/20	
Carbazole	**1000**	**D**	380	170	10	12/17/20 23:20	11/13/20	
Chrysene	**8100**	**E**	77	32	10	12/17/20 23:20	11/13/20	
Di-n-butyl Phthalate	5800	U	5800	190	10	12/17/20 23:20	11/13/20	
Di-n-octyl Phthalate	2000	U	2000	340	10	12/17/20 23:20	11/13/20	
Dibenz(a,h)anthracene	**1300**	**D**	77	32	10	12/17/20 23:20	11/13/20	
Dibenzofuran	**1200**	**D**	77	34	10	12/17/20 23:20	11/13/20	
Diethyl Phthalate	2300	U	2300	210	10	12/17/20 23:20	11/13/20	
Dimethyl Phthalate	2000	U	2000	170	10	12/17/20 23:20	11/13/20	
Fluoranthene	**19000**	**E**	77	57	10	12/17/20 23:20	11/13/20	
Fluorene	**1600**	**D**	77	20	10	12/17/20 23:20	11/13/20	
Hexachlorobenzene	77	U	77	28	10	12/17/20 23:20	11/13/20	
Hexachlorobutadiene	380	U	380	160	10	12/17/20 23:20	11/13/20	
Hexachlorocyclopentadiene	390	U	390	270	10	12/17/20 23:20	11/13/20	
Hexachloroethane	380	U	380	140	10	12/17/20 23:20	11/13/20	
Indeno(1,2,3-cd)pyrene	**4000**	**D**	77	34	10	12/17/20 23:20	11/13/20	
Isophorone	380	U	380	170	10	12/17/20 23:20	11/13/20	
N-Nitrosodi-n-propylamine	380	U	380	140	10	12/17/20 23:20	11/13/20	
N-Nitrosodiphenylamine	380	U	380	130	10	12/17/20 23:20	11/13/20	
Naphthalene	**1400**	**D**	77	27	10	12/17/20 23:20	11/13/20	
Nitrobenzene	77	U	77	32	10	12/17/20 23:20	11/13/20	
Pentachlorophenol (PCP)	390	U	390	340	10	12/17/20 23:20	11/13/20	
Phenanthrene	**18000**	**E**	77	41	10	12/17/20 23:20	11/13/20	
Phenol	380	U	380	110	10	12/17/20 23:20	11/13/20	
Pyrene	**16000**	**E**	77	38	10	12/17/20 23:20	11/13/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	118 *	19 - 107	12/17/20 23:20	*
2-Fluorobiphenyl	95	10 - 115	12/17/20 23:20	
2-Fluorophenol	69	10 - 97	12/17/20 23:20	
Nitrobenzene-d5	101	10 - 130	12/17/20 23:20	
Phenol-d6	84	17 - 135	12/17/20 23:20	
Terphenyl-d14	104	10 - 130	12/17/20 23:20	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-001	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	3800 U	3800	1600	100	12/17/20 23:49	11/13/20	
1,4-Dioxane	7800 U	7800	4000	100	12/17/20 23:49	11/13/20	
2,3,4,6-Tetrachlorophenol	3800 U	3800	1400	100	12/17/20 23:49	11/13/20	
2,4,5-Trichlorophenol	3800 U	3800	890	100	12/17/20 23:49	11/13/20	
2,4,6-Trichlorophenol	3800 U	3800	860	100	12/17/20 23:49	11/13/20	
2,4-Dichlorophenol	3800 U	3800	910	100	12/17/20 23:49	11/13/20	
2,4-Dimethylphenol	3800 U	3800	1600	100	12/17/20 23:49	11/13/20	
2,4-Dinitrophenol	3900 U	3900	1200	100	12/17/20 23:49	11/13/20	
2,4-Dinitrotoluene	3800 U	3800	1800	100	12/17/20 23:49	11/13/20	
2,6-Dinitrotoluene	3800 U	3800	1900	100	12/17/20 23:49	11/13/20	
2-Chloronaphthalene	3800 U	3800	1500	100	12/17/20 23:49	11/13/20	
2-Chlorophenol	3800 U	3800	930	100	12/17/20 23:49	11/13/20	
2-Methylnaphthalene	**740 DJ**	770	230	100	12/17/20 23:49	11/13/20	
2-Methylphenol	3800 U	3800	880	100	12/17/20 23:49	11/13/20	
2-Nitroaniline	3800 U	3800	2000	100	12/17/20 23:49	11/13/20	
2-Nitrophenol	3800 U	3800	910	100	12/17/20 23:49	11/13/20	
3,3'-Dichlorobenzidine	3800 U	3800	2200	100	12/17/20 23:49	11/13/20	
3- and 4-Methylphenol Coelution	3800 U	3800	960	100	12/17/20 23:49	11/13/20	
3-Nitroaniline	3800 U	3800	880	100	12/17/20 23:49	11/13/20	
4,6-Dinitro-2-methylphenol	3800 U	3800	1400	100	12/17/20 23:49	11/13/20	
4-Bromophenyl Phenyl Ether	3800 U	3800	1700	100	12/17/20 23:49	11/13/20	
4-Chloro-3-methylphenol	3800 U	3800	1700	100	12/17/20 23:49	11/13/20	
4-Chloroaniline	3800 U	3800	1200	100	12/17/20 23:49	11/13/20	
4-Chlorophenyl Phenyl Ether	3800 U	3800	1600	100	12/17/20 23:49	11/13/20	
4-Nitroaniline	3800 U	3800	2000	100	12/17/20 23:49	11/13/20	
4-Nitrophenol	3800 U	3800	3000	100	12/17/20 23:49	11/13/20	
Acenaphthene	**1300 D**	770	200	100	12/17/20 23:49	11/13/20	
Acenaphthylene	**800 D**	770	210	100	12/17/20 23:49	11/13/20	
Acetophenone	3800 U	3800	1300	100	12/17/20 23:49	11/13/20	
Anthracene	**3900 D**	770	470	100	12/17/20 23:49	11/13/20	
Atrazine	3800 U	3800	1100	100	12/17/20 23:49	11/13/20	
Benz(a)anthracene	**9300 D**	770	580	100	12/17/20 23:49	11/13/20	
Benzaldehyde	3800 U	3800	1800	100	12/17/20 23:49	11/13/20	
Benzo(a)pyrene	**7700 D**	770	320	100	12/17/20 23:49	11/13/20	
Benzo(b)fluoranthene	**8000 D**	770	410	100	12/17/20 23:49	11/13/20	
Benzo(g,h,i)perylene	**3800 D**	770	330	100	12/17/20 23:49	11/13/20	
Benzo(k)fluoranthene	**3000 D**	770	440	100	12/17/20 23:49	11/13/20	
Biphenyl	3800 U	3800	960	100	12/17/20 23:49	11/13/20	
2,2'-Oxybis(1-chloropropane)	3800 U	3800	1700	100	12/17/20 23:49	11/13/20	
Bis(2-chloroethoxy)methane	3800 U	3800	1600	100	12/17/20 23:49	11/13/20	
Bis(2-chloroethyl) Ether	3800 U	3800	1600	100	12/17/20 23:49	11/13/20	
Bis(2-ethylhexyl) Phthalate	70000 U	70000	3500	100	12/17/20 23:49	11/13/20	
Butyl Benzyl Phthalate	20000 U	20000	2000	100	12/17/20 23:49	11/13/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-001	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Caprolactam	3800 U	3800	3000	100	12/17/20 23:49	11/13/20	
Carbazole	3800 U	3800	1700	100	12/17/20 23:49	11/13/20	
Chrysene	**7600 D**	770	320	100	12/17/20 23:49	11/13/20	
Di-n-butyl Phthalate	58000 U	58000	1900	100	12/17/20 23:49	11/13/20	
Di-n-octyl Phthalate	20000 U	20000	3400	100	12/17/20 23:49	11/13/20	
Dibenz(a,h)anthracene	**1200 D**	770	320	100	12/17/20 23:49	11/13/20	
Dibenzofuran	**1000 D**	770	340	100	12/17/20 23:49	11/13/20	
Diethyl Phthalate	23000 U	23000	2100	100	12/17/20 23:49	11/13/20	
Dimethyl Phthalate	20000 U	20000	1700	100	12/17/20 23:49	11/13/20	
Fluoranthene	**18000 D**	770	570	100	12/17/20 23:49	11/13/20	
Fluorene	**1700 D**	770	200	100	12/17/20 23:49	11/13/20	
Hexachlorobenzene	770 U	770	280	100	12/17/20 23:49	11/13/20	
Hexachlorobutadiene	3800 U	3800	1600	100	12/17/20 23:49	11/13/20	
Hexachlorocyclopentadiene	3900 U	3900	2700	100	12/17/20 23:49	11/13/20	
Hexachloroethane	3800 U	3800	1400	100	12/17/20 23:49	11/13/20	
Indeno(1,2,3-cd)pyrene	**4200 D**	770	340	100	12/17/20 23:49	11/13/20	
Isophorone	3800 U	3800	1700	100	12/17/20 23:49	11/13/20	
N-Nitrosodi-n-propylamine	3800 U	3800	1400	100	12/17/20 23:49	11/13/20	
N-Nitrosodiphenylamine	3800 U	3800	1300	100	12/17/20 23:49	11/13/20	
Naphthalene	**1400 D**	770	270	100	12/17/20 23:49	11/13/20	
Nitrobenzene	770 U	770	320	100	12/17/20 23:49	11/13/20	
Pentachlorophenol (PCP)	3900 U	3900	3400	100	12/17/20 23:49	11/13/20	
Phenanthrene	**17000 D**	770	410	100	12/17/20 23:49	11/13/20	
Phenol	3800 U	3800	1100	100	12/17/20 23:49	11/13/20	
Pyrene	**15000 D**	770	380	100	12/17/20 23:49	11/13/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	0 *	19 - 107	12/17/20 23:49	D
2-Fluorobiphenyl	0 *	10 - 115	12/17/20 23:49	D
2-Fluorophenol	0 *	10 - 97	12/17/20 23:49	D
Nitrobenzene-d5	0 *	10 - 130	12/17/20 23:49	D
Phenol-d6	0 *	17 - 135	12/17/20 23:49	D
Terphenyl-d14	0 *	10 - 130	12/17/20 23:49	D

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 14:00
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WF2B6-2-4-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-002	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	81	U	81	34	2	12/18/20 00:18	11/13/20	
1,4-Dioxane	170	U	170	84	2	12/18/20 00:18	11/13/20	
2,3,4,6-Tetrachlorophenol	81	U	81	29	2	12/18/20 00:18	11/13/20	
2,4,5-Trichlorophenol	81	U	81	19	2	12/18/20 00:18	11/13/20	
2,4,6-Trichlorophenol	81	U	81	19	2	12/18/20 00:18	11/13/20	
2,4-Dichlorophenol	81	U	81	20	2	12/18/20 00:18	11/13/20	
2,4-Dimethylphenol	81	U	81	34	2	12/18/20 00:18	11/13/20	
2,4-Dinitrophenol	82	U	82	24	2	12/18/20 00:18	11/13/20	
2,4-Dinitrotoluene	81	U	81	37	2	12/18/20 00:18	11/13/20	
2,6-Dinitrotoluene	81	U	81	39	2	12/18/20 00:18	11/13/20	
2-Chloronaphthalene	81	U	81	32	2	12/18/20 00:18	11/13/20	
2-Chlorophenol	81	U	81	20	2	12/18/20 00:18	11/13/20	
2-Methylnaphthalene	**410**		16	4.7	2	12/18/20 00:18	11/13/20	
2-Methylphenol	81	U	81	19	2	12/18/20 00:18	11/13/20	
2-Nitroaniline	81	U	81	42	2	12/18/20 00:18	11/13/20	
2-Nitrophenol	81	U	81	20	2	12/18/20 00:18	11/13/20	
3,3'-Dichlorobenzidine	81	U	81	47	2	12/18/20 00:18	11/13/20	
3- and 4-Methylphenol Coelution	81	U	81	21	2	12/18/20 00:18	11/13/20	
3-Nitroaniline	81	U	81	19	2	12/18/20 00:18	11/13/20	
4,6-Dinitro-2-methylphenol	81	U	81	30	2	12/18/20 00:18	11/13/20	
4-Bromophenyl Phenyl Ether	81	U	81	35	2	12/18/20 00:18	11/13/20	
4-Chloro-3-methylphenol	81	U	81	37	2	12/18/20 00:18	11/13/20	
4-Chloroaniline	81	U	81	24	2	12/18/20 00:18	11/13/20	
4-Chlorophenyl Phenyl Ether	81	U	81	33	2	12/18/20 00:18	11/13/20	
4-Nitroaniline	81	U	81	42	2	12/18/20 00:18	11/13/20	
4-Nitrophenol	81	U	81	62	2	12/18/20 00:18	11/13/20	
Acenaphthene	**38**		16	4.1	2	12/18/20 00:18	11/13/20	
Acenaphthylene	**170**		16	4.5	2	12/18/20 00:18	11/13/20	
Acetophenone	81	U	81	28	2	12/18/20 00:18	11/13/20	
Anthracene	**140**		16	10	2	12/18/20 00:18	11/13/20	
Atrazine	81	U	81	22	2	12/18/20 00:18	11/13/20	
Benz(a)anthracene	**460**		16	13	2	12/18/20 00:18	11/13/20	
Benzaldehyde	**60**	**J**	81	37	2	12/18/20 00:18	11/13/20	
Benzo(a)pyrene	**570**		16	6.7	2	12/18/20 00:18	11/13/20	
Benzo(b)fluoranthene	**770**		16	8.7	2	12/18/20 00:18	11/13/20	
Benzo(g,h,i)perylene	**300**		16	7.0	2	12/18/20 00:18	11/13/20	
Benzo(k)fluoranthene	**250**		16	9.4	2	12/18/20 00:18	11/13/20	
Biphenyl	**47**	**J**	81	21	2	12/18/20 00:18	11/13/20	
2,2'-Oxybis(1-chloropropane)	81	U	81	35	2	12/18/20 00:18	11/13/20	
Bis(2-chloroethoxy)methane	81	U	81	33	2	12/18/20 00:18	11/13/20	
Bis(2-chloroethyl) Ether	81	U	81	33	2	12/18/20 00:18	11/13/20	
Bis(2-ethylhexyl) Phthalate	1500	U	1500	75	2	12/18/20 00:18	11/13/20	
Butyl Benzyl Phthalate	420	U	420	41	2	12/18/20 00:18	11/13/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 14:00
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WF2B6-2-4-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-002	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Caprolactam	81 U	81	62	2	12/18/20 00:18	11/13/20	
Carbazole	**75 J**	81	35	2	12/18/20 00:18	11/13/20	
Chrysene	**700**	16	6.7	2	12/18/20 00:18	11/13/20	
Di-n-butyl Phthalate	1200 U	1200	40	2	12/18/20 00:18	11/13/20	
Di-n-octyl Phthalate	420 U	420	72	2	12/18/20 00:18	11/13/20	
Dibenz(a,h)anthracene	**110**	16	6.7	2	12/18/20 00:18	11/13/20	
Dibenzofuran	**150**	16	7.3	2	12/18/20 00:18	11/13/20	
Diethyl Phthalate	490 U	490	45	2	12/18/20 00:18	11/13/20	
Dimethyl Phthalate	420 U	420	36	2	12/18/20 00:18	11/13/20	
Fluoranthene	**910**	16	13	2	12/18/20 00:18	11/13/20	
Fluorene	**46**	16	4.2	2	12/18/20 00:18	11/13/20	
Hexachlorobenzene	16 U	16	5.9	2	12/18/20 00:18	11/13/20	
Hexachlorobutadiene	81 U	81	33	2	12/18/20 00:18	11/13/20	
Hexachlorocyclopentadiene	82 U	82	57	2	12/18/20 00:18	11/13/20	
Hexachloroethane	81 U	81	29	2	12/18/20 00:18	11/13/20	
Indeno(1,2,3-cd)pyrene	**330**	16	7.2	2	12/18/20 00:18	11/13/20	
Isophorone	81 U	81	36	2	12/18/20 00:18	11/13/20	
N-Nitrosodi-n-propylamine	81 U	81	30	2	12/18/20 00:18	11/13/20	
N-Nitrosodiphenylamine	81 U	81	26	2	12/18/20 00:18	11/13/20	
Naphthalene	**280**	16	5.7	2	12/18/20 00:18	11/13/20	
Nitrobenzene	16 U	16	6.7	2	12/18/20 00:18	11/13/20	
Pentachlorophenol (PCP)	82 U	82	71	2	12/18/20 00:18	11/13/20	
Phenanthrene	**730**	16	8.7	2	12/18/20 00:18	11/13/20	
Phenol	81 U	81	22	2	12/18/20 00:18	11/13/20	
Pyrene	**780**	16	8.0	2	12/18/20 00:18	11/13/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	103	19 - 107	12/18/20 00:18	
2-Fluorobiphenyl	81	10 - 115	12/18/20 00:18	
2-Fluorophenol	60	10 - 97	12/18/20 00:18	
Nitrobenzene-d5	101	10 - 130	12/18/20 00:18	
Phenol-d6	68	17 - 135	12/18/20 00:18	
Terphenyl-d14	85	10 - 130	12/18/20 00:18	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Semivolatile Organic Compounds by GC

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

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-001	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	
4,4'-DDE	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	
4,4'-DDT	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	
Aldrin	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	
Dieldrin	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	
Endosulfan I	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	
Endosulfan II	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	
Endosulfan Sulfate	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	
Endrin	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	
Endrin Aldehyde	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	
Endrin Ketone	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	
Heptachlor	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	
Heptachlor Epoxide	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	
Methoxychlor	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	
Toxaphene	190 U	190	120	5	11/19/20 15:43	11/13/20	
alpha-BHC	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	
alpha-Chlordane	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	
beta-BHC	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	
delta-BHC	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	
gamma-BHC (Lindane)	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	
gamma-Chlordane	9.9 U	9.9	5.0	5	11/19/20 15:43	11/13/20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-001	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	57	10 - 145	11/19/20 15:43	
Tetrachloro-m-xylene	59	10 - 123	11/19/20 15:43	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-001	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	20 U	20	10	10	12/16/20 00:48	12/7/20	*
4,4'-DDE	20 U	20	10	10	12/16/20 00:48	12/7/20	*
4,4'-DDT	20 U	20	10	10	12/16/20 00:48	12/7/20	*
Aldrin	20 U	20	10	10	12/16/20 00:48	12/7/20	*
Dieldrin	20 U	20	10	10	12/16/20 00:48	12/7/20	*
Endosulfan I	20 U	20	10	10	12/16/20 00:48	12/7/20	*
Endosulfan II	20 U	20	10	10	12/16/20 00:48	12/7/20	*
Endosulfan Sulfate	20 U	20	10	10	12/16/20 00:48	12/7/20	*
Endrin	20 U	20	10	10	12/16/20 00:48	12/7/20	*
Endrin Aldehyde	20 U	20	10	10	12/16/20 00:48	12/7/20	*
Endrin Ketone	20 U	20	10	10	12/16/20 00:48	12/7/20	*
Heptachlor	20 U	20	10	10	12/16/20 00:48	12/7/20	*
Heptachlor Epoxide	20 U	20	10	10	12/16/20 00:48	12/7/20	*
Methoxychlor	20 U	20	10	10	12/16/20 00:48	12/7/20	*
Toxaphene	390 U	390	230	10	12/16/20 00:48	12/7/20	*
alpha-BHC	20 U	20	10	10	12/16/20 00:48	12/7/20	*
alpha-Chlordane	20 U	20	10	10	12/16/20 00:48	12/7/20	*
beta-BHC	20 U	20	10	10	12/16/20 00:48	12/7/20	*
delta-BHC	20 U	20	10	10	12/16/20 00:48	12/7/20	*
gamma-BHC (Lindane)	20 U	20	10	10	12/16/20 00:48	12/7/20	*
gamma-Chlordane	20 U	20	10	10	12/16/20 00:48	12/7/20	*

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-001	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	84	10 - 145	12/16/20 00:48	
Tetrachloro-m-xylene	72	10 - 123	12/16/20 00:48	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 14:00
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WF2B6-2-4-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-002	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	10 U	10	5.1	5	11/20/20 13:12	11/13/20	
4,4'-DDE	10 U	10	5.1	5	11/20/20 13:12	11/13/20	
4,4'-DDT	10 U	10	5.1	5	11/20/20 13:12	11/13/20	
Aldrin	10 U	10	5.1	5	11/20/20 13:12	11/13/20	
Dieldrin	10 U	10	5.1	5	11/20/20 13:12	11/13/20	
Endosulfan I	10 U	10	5.1	5	11/20/20 13:12	11/13/20	
Endosulfan II	10 U	10	5.1	5	11/20/20 13:12	11/13/20	
Endosulfan Sulfate	10 U	10	5.1	5	11/20/20 13:12	11/13/20	
Endrin	10 U	10	5.1	5	11/20/20 13:12	11/13/20	
Endrin Aldehyde	10 U	10	5.1	5	11/20/20 13:12	11/13/20	
Endrin Ketone	10 U	10	5.1	5	11/20/20 13:12	11/13/20	
Heptachlor	10 U	10	5.1	5	11/20/20 13:12	11/13/20	
Heptachlor Epoxide	10 U	10	5.1	5	11/20/20 13:12	11/13/20	
Methoxychlor	10 U	10	5.1	5	11/20/20 13:12	11/13/20	
Toxaphene	200 U	200	120	5	11/20/20 13:12	11/13/20	
alpha-BHC	10 U	10	5.1	5	11/20/20 13:12	11/13/20	
alpha-Chlordane	10 U	10	5.1	5	11/20/20 13:12	11/13/20	
beta-BHC	10 U	10	5.1	5	11/20/20 13:12	11/13/20	
delta-BHC	10 U	10	5.1	5	11/20/20 13:12	11/13/20	
gamma-BHC (Lindane)	10 U	10	5.1	5	11/20/20 13:12	11/13/20	
gamma-Chlordane	10 U	10	5.1	5	11/20/20 13:12	11/13/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 14:00
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WF2B6-2-4-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-002	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	52	10 - 145	11/20/20 13:12	
Tetrachloro-m-xylene	56	10 - 123	11/20/20 13:12	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 14:00
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WF2B6-2-4-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-002	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	21 U	21	11	10	12/16/20 01:07	12/7/20	*
4,4'-DDE	21 U	21	11	10	12/16/20 01:07	12/7/20	*
4,4'-DDT	21 U	21	11	10	12/16/20 01:07	12/7/20	*
Aldrin	21 U	21	11	10	12/16/20 01:07	12/7/20	*
Dieldrin	21 U	21	11	10	12/16/20 01:07	12/7/20	*
Endosulfan I	21 U	21	11	10	12/16/20 01:07	12/7/20	*
Endosulfan II	21 U	21	11	10	12/16/20 01:07	12/7/20	*
Endosulfan Sulfate	21 U	21	11	10	12/16/20 01:07	12/7/20	*
Endrin	21 U	21	11	10	12/16/20 01:07	12/7/20	*
Endrin Aldehyde	21 U	21	11	10	12/16/20 01:07	12/7/20	*
Endrin Ketone	21 U	21	11	10	12/16/20 01:07	12/7/20	*
Heptachlor	21 U	21	11	10	12/16/20 01:07	12/7/20	*
Heptachlor Epoxide	21 U	21	11	10	12/16/20 01:07	12/7/20	*
Methoxychlor	21 U	21	11	10	12/16/20 01:07	12/7/20	*
Toxaphene	400 U	400	240	10	12/16/20 01:07	12/7/20	*
alpha-BHC	21 U	21	11	10	12/16/20 01:07	12/7/20	*
alpha-Chlordane	21 U	21	11	10	12/16/20 01:07	12/7/20	*
beta-BHC	21 U	21	11	10	12/16/20 01:07	12/7/20	*
delta-BHC	21 U	21	11	10	12/16/20 01:07	12/7/20	*
gamma-BHC (Lindane)	21 U	21	11	10	12/16/20 01:07	12/7/20	*
gamma-Chlordane	21 U	21	11	10	12/16/20 01:07	12/7/20	*

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 14:00
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WF2B6-2-4-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-002	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	86	10 - 145	12/16/20 01:07	
Tetrachloro-m-xylene	63	10 - 123	12/16/20 01:07	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-001	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	39 U	39	20	1	11/24/20 16:52	11/13/20	
Aroclor 1221	78 U	78	20	1	11/24/20 16:52	11/13/20	
Aroclor 1232	39 U	39	20	1	11/24/20 16:52	11/13/20	
Aroclor 1242	39 U	39	20	1	11/24/20 16:52	11/13/20	
Aroclor 1248	39 U	39	20	1	11/24/20 16:52	11/13/20	
Aroclor 1254	39 U	39	20	1	11/24/20 16:52	11/13/20	
Aroclor 1260	39 U	39	20	1	11/24/20 16:52	11/13/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	75	22 - 128	11/24/20 16:52	
Tetrachloro-m-xylene	60	14 - 119	11/24/20 16:52	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 14:00
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WF2B6-2-4-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-002	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	40 U	40	21	1	11/24/20 17:12	11/13/20	
Aroclor 1221	80 U	80	21	1	11/24/20 17:12	11/13/20	
Aroclor 1232	40 U	40	21	1	11/24/20 17:12	11/13/20	
Aroclor 1242	40 U	40	21	1	11/24/20 17:12	11/13/20	
Aroclor 1248	40 U	40	21	1	11/24/20 17:12	11/13/20	
Aroclor 1254	40 U	40	21	1	11/24/20 17:12	11/13/20	
Aroclor 1260	40 U	40	21	1	11/24/20 17:12	11/13/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	69	22 - 128	11/24/20 17:12	
Tetrachloro-m-xylene	58	14 - 119	11/24/20 17:12	

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: Ramboll US Corp (Syracuse) **Service Request:** WEB4-0-2-11102020

Project No.: R2010644 **Date Collected:** 11/10/2020

Project Name: **Date Received:** 11/10/2020

Matrix: SOIL **Units:** mg/Kg

Basis:

Sample Name: **WEB4-0-2-11102020** **Lab Code:** **R2010644-001**

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	227	136	10.0	5870		
Antimony	6010C	6.8	0.613	1.0	6.8	U	
Arsenic	6010C	1.1	0.795	1.0	4.3		
Barium	6010C	2.3	1.7	1.0	109		
Beryllium	6010C	0.341	0.068	1.0	0.295	J	
Cadmium	6010C	0.568	0.273	1.0	0.568	U	
Mercury	7471B	0.039	0.015	1.0	0.285		
Calcium	6010C	114	36.4	1.0	12000		
Chromium	6010C	1.1	0.398	1.0	7.6		
Cobalt	6010C	5.7	0.523	1.0	4.4	J	
Copper	6010C	2.3	0.716	1.0	13.8		
Iron	6010C	227	148	10.0	12400		
Lead	6010C	5.7	0.454	1.0	114		
Magnesium	6010C	114	14.8	1.0	4540		
Manganese	6010C	2.3	1.7	1.0	292		
Nickel	6010C	4.5	0.750	1.0	9.7		
Potassium	6010C	227	56.8	1.0	781		
Selenium	6010C	1.1	0.613	1.0	1.1	U	
Silver	6010C	1.1	0.102	1.0	1.1	U	
Sodium	6010C	114	59.1	1.0	89.3	J	
Thallium	6010C	1.1	0.738	1.0	1.1	U	
Vanadium	6010C	5.7	0.807	1.0	12.3		
Zinc	6010C	2.3	1.6	1.0	51.0		

% Solids: **86.3**

Comments:

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: Ramboll US Corp (Syracuse)
Service Request: WEB4-0-2-11102020
Project No.: R2010644
Date Collected: 11/10/2020
Project Name:
Date Received: 11/10/2020
Matrix: SOIL
Units: mg/Kg
Basis:

Sample Name: WF2B6-2-4-11102020 **Lab Code:** R2010644-002

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	227	136	10.0	5560		
Antimony	6010C	6.8	0.612	1.0	6.8	U	
Arsenic	6010C	1.1	0.794	1.0	11.3		
Barium	6010C	2.3	1.7	1.0	72.7		
Beryllium	6010C	0.340	0.068	1.0	0.578		
Cadmium	6010C	0.567	0.272	1.0	0.272	J	
Mercury	7471B	0.040	0.016	1.0	0.308		
Calcium	6010C	113	36.3	1.0	7450		
Chromium	6010C	1.1	0.397	1.0	9.9		
Cobalt	6010C	5.7	0.522	1.0	6.7		
Copper	6010C	2.3	0.714	1.0	97.5		
Iron	6010C	227	147	10.0	18300		
Lead	6010C	5.7	0.454	1.0	171		
Magnesium	6010C	113	14.7	1.0	3180		
Manganese	6010C	2.3	1.7	1.0	206		
Nickel	6010C	4.5	0.748	1.0	13.6		
Potassium	6010C	227	56.7	1.0	711		
Selenium	6010C	1.1	0.612	1.0	1.1	U	
Silver	6010C	1.1	0.102	1.0	0.102	J	
Sodium	6010C	113	59.0	1.0	96.2	J	
Thallium	6010C	1.1	0.737	1.0	1.1	U	
Vanadium	6010C	5.7	0.805	1.0	13.9		
Zinc	6010C	2.3	1.6	1.0	98.6		

% Solids: 83.2

Comments:

General Chemistry

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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

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Basis:**	Dry
Lab Code:	R2010644-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	**3.47**	mg/Kg	0.29	0.17	1	11/19/20 11:19	11/17/20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Basis:**	As Received
Lab Code:	R2010644-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Total Solids	ALS SOP	**86.3**	Percent	-	-	1	11/21/20 05:15	NA	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 14:00
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WF2B6-2-4-11102020	**Basis:**	Dry
Lab Code:	R2010644-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	**1.74**	mg/Kg	0.32	0.19	1	11/19/20 11:19	11/17/20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 14:00
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WF2B6-2-4-11102020	**Basis:**	As Received
Lab Code:	R2010644-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Total Solids	ALS SOP	**83.2**	Percent	-	-	1	11/21/20 05:15	NA	

QC Summary Forms

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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

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: Ramboll US Corp (Syracuse) **Service Request:** R2010644
Project: Rochester REDI/1940100197
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: EPA 5035A

Sample Name	Lab Code	4-Bromofluorobenzene 31-154	Dibromofluoromethane 63-138	Toluene-d8 66-138
WEB4-0-2-11102020	R2010644-001	89	121	111
WF2B6-2-4-11102020	R2010644-002	48	131	106
WF2B6-2-4-11102020 DL	R2010644-002	47	130	108
Method Blank	RQ2014023-05	101	115	108
Lab Control Sample	RQ2014023-03	112	121	108
Duplicate Lab Control Sample	RQ2014023-04	113	118	110

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2014023-05	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	5.0 U	5.0	0.20	1	11/15/20 13:51	
1,1,2,2-Tetrachloroethane	5.0 U	5.0	0.44	1	11/15/20 13:51	
1,1,2-Trichloroethane	5.0 U	5.0	0.20	1	11/15/20 13:51	
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0 U	5.0	0.20	1	11/15/20 13:51	
1,1-Dichloroethane (1,1-DCA)	5.0 U	5.0	0.20	1	11/15/20 13:51	
1,1-Dichloroethene (1,1-DCE)	5.0 U	5.0	0.29	1	11/15/20 13:51	
1,2,3-Trichlorobenzene	5.0 U	5.0	0.52	1	11/15/20 13:51	
1,2,4-Trichlorobenzene	5.0 U	5.0	0.42	1	11/15/20 13:51	
1,2-Dibromo-3-chloropropane (DBCP)	5.0 U	5.0	0.75	1	11/15/20 13:51	
1,2-Dibromoethane	5.0 U	5.0	0.20	1	11/15/20 13:51	
1,2-Dichlorobenzene	5.0 U	5.0	0.20	1	11/15/20 13:51	
1,2-Dichloroethane	5.0 U	5.0	0.20	1	11/15/20 13:51	
1,2-Dichloropropane	5.0 U	5.0	0.20	1	11/15/20 13:51	
1,3-Dichlorobenzene	5.0 U	5.0	0.20	1	11/15/20 13:51	
1,4-Dichlorobenzene	5.0 U	5.0	0.22	1	11/15/20 13:51	
1,4-Dioxane	100 U	100	20	1	11/15/20 13:51	
2-Butanone (MEK)	5.0 U	5.0	2.0	1	11/15/20 13:51	
2-Hexanone	5.0 U	5.0	0.36	1	11/15/20 13:51	
4-Methyl-2-pentanone	5.0 U	5.0	0.23	1	11/15/20 13:51	
Acetone	5.0 U	5.0	4.7	1	11/15/20 13:51	
Benzene	5.0 U	5.0	0.20	1	11/15/20 13:51	
Bromochloromethane	5.0 U	5.0	0.20	1	11/15/20 13:51	
Bromodichloromethane	5.0 U	5.0	0.20	1	11/15/20 13:51	
Bromoform	5.0 U	5.0	0.50	1	11/15/20 13:51	
Bromomethane	5.0 U	5.0	2.1	1	11/15/20 13:51	
Carbon Disulfide	5.0 U	5.0	0.29	1	11/15/20 13:51	
Carbon Tetrachloride	5.0 U	5.0	0.26	1	11/15/20 13:51	
Chlorobenzene	5.0 U	5.0	0.20	1	11/15/20 13:51	
Chloroethane	5.0 U	5.0	0.41	1	11/15/20 13:51	
Chloroform	5.0 U	5.0	0.20	1	11/15/20 13:51	
Chloromethane	5.0 U	5.0	1.4	1	11/15/20 13:51	
Cyclohexane	5.0 U	5.0	0.26	1	11/15/20 13:51	
Dibromochloromethane	5.0 U	5.0	0.20	1	11/15/20 13:51	
Dichlorodifluoromethane (CFC 12)	5.0 U	5.0	0.33	1	11/15/20 13:51	
Dichloromethane	5.0 U	5.0	2.8	1	11/15/20 13:51	
Ethylbenzene	5.0 U	5.0	0.20	1	11/15/20 13:51	
Isopropylbenzene (Cumene)	5.0 U	5.0	0.20	1	11/15/20 13:51	
Methyl Acetate	5.0 U	5.0	0.84	1	11/15/20 13:51	
Methyl tert-Butyl Ether	5.0 U	5.0	0.20	1	11/15/20 13:51	
Methylcyclohexane	5.0 U	5.0	0.31	1	11/15/20 13:51	
Styrene	5.0 U	5.0	0.20	1	11/15/20 13:51	
Tetrachloroethene (PCE)	5.0 U	5.0	0.23	1	11/15/20 13:51	
Toluene	5.0 U	5.0	0.20	1	11/15/20 13:51	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2014023-05	**Basis:**	Dry

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5035A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	5.0 U	5.0	0.22	1	11/15/20 13:51	
Trichlorofluoromethane (CFC 11)	5.0 U	5.0	0.26	1	11/15/20 13:51	
Vinyl Chloride	5.0 U	5.0	0.46	1	11/15/20 13:51	
cis-1,2-Dichloroethene	5.0 U	5.0	0.20	1	11/15/20 13:51	
cis-1,3-Dichloropropene	5.0 U	5.0	0.20	1	11/15/20 13:51	
m,p-Xylenes	10 U	10	0.37	1	11/15/20 13:51	
o-Xylene	5.0 U	5.0	0.20	1	11/15/20 13:51	
trans-1,2-Dichloroethene	5.0 U	5.0	0.20	1	11/15/20 13:51	
trans-1,3-Dichloropropene	5.0 U	5.0	0.20	1	11/15/20 13:51	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	31 - 154	11/15/20 13:51	
Dibromofluoromethane	115	63 - 138	11/15/20 13:51	
Toluene-d8	108	66 - 138	11/15/20 13:51	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010644
Date Analyzed: 11/15/20

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

	Lab Control Sample				Duplicate Lab Control Sample					
	RQ2014023-03				RQ2014023-04					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,1,1-Trichloroethane (TCA)	8260C	19.8	20.0	99	19.5	20.0	97	68-123	2	30
1,1,2,2-Tetrachloroethane	8260C	18.2	20.0	91	18.6	20.0	93	78-121	2	30
1,1,2-Trichloroethane	8260C	20.4	20.0	102	20.7	20.0	103	84-117	<1	30
1,1,2-Trichloro-1,2,2-trifluoroethane	8260C	18.1	20.0	90	16.3	20.0	82	54-121	9	30
1,1-Dichloroethane (1,1-DCA)	8260C	18.4	20.0	92	18.2	20.0	91	76-123	1	30
1,1-Dichloroethene (1,1-DCE)	8260C	19.9	20.0	99	18.6	20.0	93	65-115	6	30
1,2,3-Trichlorobenzene	8260C	20.5	20.0	103	19.4	20.0	97	60-128	6	30
1,2,4-Trichlorobenzene	8260C	20.0	20.0	100	18.6	20.0	93	62-130	7	30
1,2-Dibromo-3-chloropropane (DBCP)	8260C	16.9	20.0	85	17.0	20.0	85	54-135	<1	30
1,2-Dibromoethane	8260C	20.9	20.0	104	21.0	20.0	105	77-117	<1	30
1,2-Dichlorobenzene	8260C	19.6	20.0	98	18.4	20.0	92	75-116	6	30
1,2-Dichloroethane	8260C	23.1	20.0	116	22.6	20.0	113	74-116	3	30
1,2-Dichloropropane	8260C	18.9	20.0	94	18.3	20.0	92	79-112	2	30
1,3-Dichlorobenzene	8260C	19.2	20.0	96	18.4	20.0	92	72-118	4	30
1,4-Dichlorobenzene	8260C	19.1	20.0	96	18.2	20.0	91	72-117	5	30
1,4-Dioxane	8260C	362	400	90	374	400	94	59-147	4	30
2-Butanone (MEK)	8260C	21.9	20.0	109	22.7	20.0	114	67-129	4	30
2-Hexanone	8260C	22.1	20.0	111	22.0	20.0	110	68-118	<1	30
4-Methyl-2-pentanone	8260C	21.6	20.0	108	21.9	20.0	110	64-123	2	30
Acetone	8260C	22.1	20.0	111	20.3	20.0	102	32-154	8	30
Benzene	8260C	18.6	20.0	93	17.6	20.0	88	77-114	6	30
Bromochloromethane	8260C	20.7	20.0	104	20.0	20.0	100	78-117	4	30
Bromodichloromethane	8260C	20.2	20.0	101	19.1	20.0	96	72-118	5	30
Bromoform	8260C	20.2	20.0	101	19.4	20.0	97	55-134	4	30
Bromomethane	8260C	33.0	20.0	165 *	30.8	20.0	154 *	10-150	7	30
Carbon Disulfide	8260C	11.3	20.0	56	10.7	20.0	54	44-139	4	30
Carbon Tetrachloride	8260C	19.2	20.0	96	18.8	20.0	94	51-123	2	30
Chlorobenzene	8260C	19.7	20.0	99	18.8	20.0	94	79-115	5	30
Chloroethane	8260C	24.9	20.0	124	25.2	20.0	126	10-140	2	30
Chloroform	8260C	21.0	20.0	105	20.3	20.0	102	76-115	3	30
Chloromethane	8260C	20.3	20.0	102	19.6	20.0	98	10-131	4	30
Cyclohexane	8260C	19.9	20.0	100	19.0	20.0	95	67-122	5	30
Dibromochloromethane	8260C	20.8	20.0	104	19.9	20.0	99	68-121	5	30

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010644
Project: Rochester REDI/1940100197 **Date Analyzed:** 11/15/20
Sample Matrix: Soil

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2014023-03			RQ2014023-04					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Dichlorodifluoromethane (CFC 12)	8260C	16.1	20.0	81	15.2	20.0	76	51-144	6	30
Dichloromethane	8260C	17.6	20.0	88	17.6	20.0	88	72-118	<1	30
Ethylbenzene	8260C	18.7	20.0	93	17.6	20.0	88	64-118	6	30
Isopropylbenzene (Cumene)	8260C	18.9	20.0	94	17.7	20.0	89	60-123	5	30
Methyl Acetate	8260C	19.4	20.0	97	19.1	20.0	96	31-122	1	30
Methyl tert-Butyl Ether	8260C	20.9	20.0	104	21.0	20.0	105	76-118	<1	30
Methylcyclohexane	8260C	18.5	20.0	93	17.9	20.0	89	70-124	4	30
Styrene	8260C	19.6	20.0	98	18.6	20.0	93	74-117	5	30
Tetrachloroethene (PCE)	8260C	18.5	20.0	92	17.2	20.0	86	58-124	7	30
Toluene	8260C	18.6	20.0	93	18.0	20.0	90	72-116	3	30
Trichloroethene (TCE)	8260C	19.6	20.0	98	18.7	20.0	93	69-118	5	30
Trichlorofluoromethane (CFC 11)	8260C	32.8	20.0	164 *	32.5	20.0	162 *	52-127	1	30
Vinyl Chloride	8260C	19.6	20.0	98	19.4	20.0	97	59-153	1	30
cis-1,2-Dichloroethene	8260C	19.6	20.0	98	18.9	20.0	94	79-113	4	30
cis-1,3-Dichloropropene	8260C	18.1	20.0	91	17.5	20.0	88	66-117	3	30
m,p-Xylenes	8260C	37.9	40.0	95	35.8	40.0	90	68-118	5	30
o-Xylene	8260C	20.1	20.0	100	18.5	20.0	93	71-116	7	30
trans-1,2-Dichloroethene	8260C	20.4	20.0	102	19.3	20.0	96	73-114	6	30
trans-1,3-Dichloropropene	8260C	19.7	20.0	99	19.0	20.0	95	57-135	4	30

Semivolatile Organic Compounds by GC/MS

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

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010644
Project: Rochester REDI/1940100197
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3541

Sample Name	Lab Code	2,4,6-Tribromophenol 19-107	2-Fluorobiphenyl 10-115	2-Fluorophenol 10-97
WEB4-0-2-11102020	R2010644-001	113*	97	84
WEB4-0-2-11102020 DL	R2010644-001	118*	95	69
WEB4-0-2-11102020 DL	R2010644-001	0*	0*	0*
WF2B6-2-4-11102020	R2010644-002	103	81	60
Method Blank	RQ2013971-01	80	81	76
Lab Control Sample	RQ2013971-02	78	82	75
Duplicate Lab Control Sample	RQ2013971-03	81	83	77

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010644
Project: Rochester REDI/1940100197
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3541

Sample Name	Lab Code	Nitrobenzene-d5 10-130	Phenol-d6 17-135	Terphenyl-d14 10-130
WEB4-0-2-11102020	R2010644-001	109	84	109
WEB4-0-2-11102020 DL	R2010644-001	101	84	104
WEB4-0-2-11102020 DL	R2010644-001	0*	0*	0*
WF2B6-2-4-11102020	R2010644-002	101	68	85
Method Blank	RQ2013971-01	81	80	96
Lab Control Sample	RQ2013971-02	77	81	95
Duplicate Lab Control Sample	RQ2013971-03	77	83	96

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2013971-01	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	34 U	34	15	1	11/25/20 12:04	11/13/20	
1,4-Dioxane	68 U	68	35	1	11/25/20 12:04	11/13/20	
2,3,4,6-Tetrachlorophenol	34 U	34	12	1	11/25/20 12:04	11/13/20	
2,4,5-Trichlorophenol	34 U	34	7.8	1	11/25/20 12:04	11/13/20	
2,4,6-Trichlorophenol	34 U	34	7.6	1	11/25/20 12:04	11/13/20	
2,4-Dichlorophenol	34 U	34	8.0	1	11/25/20 12:04	11/13/20	
2,4-Dimethylphenol	34 U	34	14	1	11/25/20 12:04	11/13/20	
2,4-Dinitrophenol	34 U	34	9.9	1	11/25/20 12:04	11/13/20	
2,4-Dinitrotoluene	34 U	34	16	1	11/25/20 12:04	11/13/20	
2,6-Dinitrotoluene	34 U	34	16	1	11/25/20 12:04	11/13/20	
2-Chloronaphthalene	34 U	34	14	1	11/25/20 12:04	11/13/20	
2-Chlorophenol	34 U	34	8.2	1	11/25/20 12:04	11/13/20	
2-Methylnaphthalene	6.7 U	6.7	2.0	1	11/25/20 12:04	11/13/20	
2-Methylphenol	34 U	34	7.7	1	11/25/20 12:04	11/13/20	
2-Nitroaniline	34 U	34	18	1	11/25/20 12:04	11/13/20	
2-Nitrophenol	34 U	34	8.0	1	11/25/20 12:04	11/13/20	
3,3'-Dichlorobenzidine	34 U	34	20	1	11/25/20 12:04	11/13/20	
3- and 4-Methylphenol Coelution	34 U	34	8.4	1	11/25/20 12:04	11/13/20	
3-Nitroaniline	34 U	34	7.7	1	11/25/20 12:04	11/13/20	
4,6-Dinitro-2-methylphenol	34 U	34	13	1	11/25/20 12:04	11/13/20	
4-Bromophenyl Phenyl Ether	34 U	34	15	1	11/25/20 12:04	11/13/20	
4-Chloro-3-methylphenol	34 U	34	15	1	11/25/20 12:04	11/13/20	
4-Chloroaniline	34 U	34	9.7	1	11/25/20 12:04	11/13/20	
4-Chlorophenyl Phenyl Ether	34 U	34	14	1	11/25/20 12:04	11/13/20	
4-Nitroaniline	34 U	34	18	1	11/25/20 12:04	11/13/20	
4-Nitrophenol	34 U	34	26	1	11/25/20 12:04	11/13/20	
Acenaphthene	6.7 U	6.7	1.7	1	11/25/20 12:04	11/13/20	
Acenaphthylene	6.7 U	6.7	1.9	1	11/25/20 12:04	11/13/20	
Acetophenone	34 U	34	12	1	11/25/20 12:04	11/13/20	
Anthracene	6.7 U	6.7	4.2	1	11/25/20 12:04	11/13/20	
Atrazine	34 U	34	8.9	1	11/25/20 12:04	11/13/20	
Benz(a)anthracene	6.7 U	6.7	5.1	1	11/25/20 12:04	11/13/20	
Benzaldehyde	34 U	34	15	1	11/25/20 12:04	11/13/20	
Benzo(a)pyrene	6.7 U	6.7	2.8	1	11/25/20 12:04	11/13/20	
Benzo(b)fluoranthene	6.7 U	6.7	3.6	1	11/25/20 12:04	11/13/20	
Benzo(g,h,i)perylene	6.7 U	6.7	2.9	1	11/25/20 12:04	11/13/20	
Benzo(k)fluoranthene	6.7 U	6.7	3.9	1	11/25/20 12:04	11/13/20	
Biphenyl	34 U	34	8.4	1	11/25/20 12:04	11/13/20	
2,2'-Oxybis(1-chloropropane)	34 U	34	15	1	11/25/20 12:04	11/13/20	
Bis(2-chloroethoxy)methane	34 U	34	14	1	11/25/20 12:04	11/13/20	
Bis(2-chloroethyl) Ether	34 U	34	14	1	11/25/20 12:04	11/13/20	
Bis(2-ethylhexyl) Phthalate	**35 J**	610	31	1	11/25/20 12:04	11/13/20	
Butyl Benzyl Phthalate	170 U	170	17	1	11/25/20 12:04	11/13/20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2013971-01	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Caprolactam	34 U	34	26	1	11/25/20 12:04	11/13/20	
Carbazole	34 U	34	15	1	11/25/20 12:04	11/13/20	
Chrysene	6.7 U	6.7	2.8	1	11/25/20 12:04	11/13/20	
Di-n-butyl Phthalate	510 U	510	17	1	11/25/20 12:04	11/13/20	
Di-n-octyl Phthalate	170 U	170	30	1	11/25/20 12:04	11/13/20	
Dibenz(a,h)anthracene	6.7 U	6.7	2.8	1	11/25/20 12:04	11/13/20	
Dibenzofuran	6.7 U	6.7	3.0	1	11/25/20 12:04	11/13/20	
Diethyl Phthalate	200 U	200	19	1	11/25/20 12:04	11/13/20	
Dimethyl Phthalate	170 U	170	15	1	11/25/20 12:04	11/13/20	
Fluoranthene	6.7 U	6.7	5.0	1	11/25/20 12:04	11/13/20	
Fluorene	6.7 U	6.7	1.8	1	11/25/20 12:04	11/13/20	
Hexachlorobenzene	6.7 U	6.7	2.5	1	11/25/20 12:04	11/13/20	
Hexachlorobutadiene	34 U	34	14	1	11/25/20 12:04	11/13/20	
Hexachlorocyclopentadiene	34 U	34	24	1	11/25/20 12:04	11/13/20	
Hexachloroethane	34 U	34	12	1	11/25/20 12:04	11/13/20	
Indeno(1,2,3-cd)pyrene	6.7 U	6.7	3.0	1	11/25/20 12:04	11/13/20	
Isophorone	34 U	34	15	1	11/25/20 12:04	11/13/20	
N-Nitrosodi-n-propylamine	34 U	34	13	1	11/25/20 12:04	11/13/20	
N-Nitrosodiphenylamine	34 U	34	11	1	11/25/20 12:04	11/13/20	
Naphthalene	6.7 U	6.7	2.4	1	11/25/20 12:04	11/13/20	
Nitrobenzene	6.7 U	6.7	2.8	1	11/25/20 12:04	11/13/20	
Pentachlorophenol (PCP)	34 U	34	30	1	11/25/20 12:04	11/13/20	
Phenanthrene	6.7 U	6.7	3.6	1	11/25/20 12:04	11/13/20	
Phenol	34 U	34	9.0	1	11/25/20 12:04	11/13/20	
Pyrene	6.7 U	6.7	3.3	1	11/25/20 12:04	11/13/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	80	19 - 107	11/25/20 12:04	
2-Fluorobiphenyl	81	10 - 115	11/25/20 12:04	
2-Fluorophenol	76	10 - 97	11/25/20 12:04	
Nitrobenzene-d5	81	10 - 130	11/25/20 12:04	
Phenol-d6	80	17 - 135	11/25/20 12:04	
Terphenyl-d14	96	10 - 130	11/25/20 12:04	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/Kg	Q
	No Tentatively Identified Compounds Detected			

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010644
Project: Rochester REDI/1940100197 **Date Analyzed:** 11/25/20
Sample Matrix: Soil

Duplicate Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2013971-02			RQ2013971-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4,5-Tetrachlorobenzene	8270D	171	200	85	182	204	89	31-127	6	30
1,4-Dioxane	8270D	372	202	185 *	370	206	179 *	24-101	<1	30
2,3,4,6-Tetrachlorophenol	8270D	143	198	72	163	203	80	37-156	13	30
2,4,5-Trichlorophenol	8270D	146	198	73	159	203	78	16-123	9	30
2,4,6-Trichlorophenol	8270D	139	198	70	152	203	75	18-126	9	30
2,4-Dichlorophenol	8270D	153	198	77	156	203	77	17-128	2	30
2,4-Dimethylphenol	8270D	155	198	78	155	203	76	17-125	<1	30
2,4-Dinitrophenol	8270D	53.0	198	27	59.8	203	29	10-118	12	30
2,4-Dinitrotoluene	8270D	156	198	79	167	203	83	16-189	7	30
2,6-Dinitrotoluene	8270D	152	198	77	163	203	80	53-131	7	30
2-Chloronaphthalene	8270D	156	198	79	164	203	81	13-116	5	30
2-Chlorophenol	8270D	140	198	71	152	203	75	10-122	8	30
2-Methylnaphthalene	8270D	160	198	81	163	203	80	13-116	2	30
2-Methylphenol	8270D	158	198	80	164	203	81	12-123	4	30
2-Nitroaniline	8270D	156	198	79	160	203	79	35-126	3	30
2-Nitrophenol	8270D	142	198	71	144	203	71	10-152	2	30
3,3'-Dichlorobenzidine	8270D	161	198	81	164	203	81	25-121	2	30
3- and 4-Methylphenol Coelution	8270D	151	198	76	160	203	79	14-119	6	30
3-Nitroaniline	8270D	130	198	66	146	203	72 *	22-69	11	30
4,6-Dinitro-2-methylphenol	8270D	114	198	58	111	203	55	10-150	3	30
4-Bromophenyl Phenyl Ether	8270D	161	198	81	167	203	82	36-165	4	30
4-Chloro-3-methylphenol	8270D	140	198	71	149	203	73	23-128	6	30
4-Chloroaniline	8270D	142	198	72	156	203	77	12-78	10	30
4-Chlorophenyl Phenyl Ether	8270D	152	198	77	159	203	78	34-151	5	30
4-Nitroaniline	8270D	162	198	81	161	203	79	27-102	<1	30
4-Nitrophenol	8270D	135	198	68	129	203	63	12-115	5	30
Acenaphthene	8270D	152	198	76	159	203	78	17-115	4	30
Acenaphthylene	8270D	163	198	82	170	203	84	15-123	4	30
Acetophenone	8270D	310	397	78	329	406	81	36-106	6	30
Anthracene	8270D	166	198	83	166	203	82	37-117	<1	30
Atrazine	8270D	212	198	107	211	203	104	46-157	<1	30
Benz(a)anthracene	8270D	149	198	75	148	203	73	39-105	<1	30
Benzaldehyde	8270D	52.4	198	26	55.1	203	27	10-131	5	30

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010644
Project: Rochester REDI/1940100197 **Date Analyzed:** 11/25/20
Sample Matrix: Soil

Duplicate Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2013971-02			RQ2013971-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Benzo(a)pyrene	8270D	199	198	100	211	203	104	38-130	6	30
Benzo(b)fluoranthene	8270D	153	198	77	161	203	79	36-120	5	30
Benzo(g,h,i)perylene	8270D	173	198	87	184	203	91	36-140	6	30
Benzo(k)fluoranthene	8270D	167	198	84	172	203	85	40-125	2	30
Biphenyl	8270D	163	198	82	168	203	83	19-133	3	30
2,2'-Oxybis(1-chloropropane)	8270D	159	198	80	162	203	80	32-112	2	30
Bis(2-chloroethoxy)methane	8270D	156	198	79	154	203	76	38-133	1	30
Bis(2-chloroethyl) Ether	8270D	153	198	77	159	203	78	30-121	4	30
Bis(2-ethylhexyl) Phthalate	8270D	187 J	198	94	183 J	203	90	23-200	2	30
Butyl Benzyl Phthalate	8270D	175	198	88	163 J	203	80	41-117	7	30
Caprolactam	8270D	169	198	85	168	203	83	36-111	<1	30
Carbazole	8270D	185	198	93	189	203	93	36-128	2	30
Chrysene	8270D	164	198	83	163	203	80	40-120	<1	30
Di-n-butyl Phthalate	8270D	169 J	198	85	172 J	203	85	10-200	2	30
Di-n-octyl Phthalate	8270D	161 J	198	81	165 J	203	82	39-130	3	30
Dibenz(a,h)anthracene	8270D	177	198	89	184	203	91	22-146	4	30
Dibenzofuran	8270D	164	198	82	170	203	84	22-114	4	30
Diethyl Phthalate	8270D	151 J	198	76	158 J	203	78	28-190	4	30
Dimethyl Phthalate	8270D	156 J	198	78	164 J	203	81	30-106	5	30
Fluoranthene	8270D	157	198	79	160	203	79	41-110	2	30
Fluorene	8270D	146	198	73	156	203	77	25-106	7	30
Hexachlorobenzene	8270D	161	198	81	161	203	79	36-122	<1	30
Hexachlorobutadiene	8270D	173	198	87	172	203	85	10-120	<1	30
Hexachlorocyclopentadiene	8270D	81.2	198	41	81.0	203	40	10-104	<1	30
Hexachloroethane	8270D	145	198	73	157	203	77	10-110	8	30
Indeno(1,2,3-cd)pyrene	8270D	169	198	85	180	203	89	41-137	6	30
Isophorone	8270D	133	198	67	143	203	70	37-145	7	30
N-Nitrosodi-n-propylamine	8270D	160	198	81	170	203	84	34-115	6	30
N-Nitrosodiphenylamine	8270D	192	198	97	194	203	95	48-135	<1	30
Naphthalene	8270D	154	198	78	159	203	79	10-115	4	30
Nitrobenzene	8270D	148	198	75	142	203	70	10-115	4	30
Pentachlorophenol (PCP)	8270D	140	198	70	149	203	73	10-97	6	30
Phenanthrene	8270D	158	198	80	157	203	77	37-112	<1	30

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010644
Date Analyzed: 11/25/20

Duplicate Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2013971-02			RQ2013971-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Phenol	8270D	145	198	73	150	203	74	14-120	4	30
Pyrene	8270D	176	198	89	177	203	87	33-124	<1	30

Semivolatile Organic Compounds by GC

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: Ramboll US Corp (Syracuse) **Service Request:** R2010644
Project: Rochester REDI/1940100197
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Extraction Method: EPA 3541

Sample Name	Lab Code	Decachlorobiphenyl 10-145	Tetrachloro-m-xylene 10-123
WEB4-0-2-11102020	R2010644-001	57	59
WEB4-0-2-11102020 RE	R2010644-001	84	72
WF2B6-2-4-11102020	R2010644-002	52	56
WF2B6-2-4-11102020 RE	R2010644-002	86	63
Method Blank	RQ2013972-01	9*	7*
Method Blank	RQ2015080-03	87	79
Lab Control Sample	RQ2013972-02	11	9*
Duplicate Lab Control Sample	RQ2013972-03	10	8*
Lab Control Sample	RQ2015080-04	83	73
Duplicate Lab Control Sample	RQ2015080-05	103	93
WEB4-0-2-11102020 MS	RQ2013972-06	65	64
WEB4-0-2-11102020 DMS	RQ2013972-07	73	54

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20
Sample Matrix:	Soil	**Date Received:**	11/10/20
		Date Analyzed:	11/20/20
		Date Extracted:	11/13/20

Duplicate Matrix Spike Summary
Organochlorine Pesticides by Gas Chromatography

Sample Name:	WEB4-0-2-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-001	**Basis:**	Dry
Analysis Method:	8081B		
Prep Method:	EPA 3541		

		Matrix Spike RQ2013972-06			Duplicate Matrix Spike RQ2013972-07					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
4,4'-DDD	9.9 U	5.37 DJ	7.77	69	10 DU	7.84	0 *	10-165	NC	30
4,4'-DDE	9.9 U	9.9 DU	7.77	0 *	10 DU	7.84	0 *	10-200	NC	30
4,4'-DDT	9.9 U	9.9 DU	7.77	0 *	10 DU	7.84	0 *	10-200	NC	30
Aldrin	9.9 U	9.9 DU	7.77	0 *	10 DU	7.84	0 *	10-171	NC	30
Dieldrin	9.9 U	5.13 DJ	7.77	66	10 DU	7.84	0 *	10-200	NC	30
Endosulfan I	9.9 U	5.01 DJ	7.77	65	10 DU	7.84	0 *	10-174	NC	30
Endosulfan II	9.9 U	9.9 DU	7.77	0 *	10 DU	7.84	0 *	10-185	NC	30
Endosulfan Sulfate	9.9 U	9.9 DU	7.77	0 *	10 DU	7.84	0 *	10-155	NC	30
Endrin	9.9 U	9.9 DU	7.77	0 *	10 DU	7.84	0 *	10-200	NC	30
Endrin Aldehyde	9.9 U	9.9 DU	7.77	0 *	6.12 DJ	7.84	78	10-148	NC	30
Endrin Ketone	9.9 U	12.6 D	7.77	162	7.05 DJ	7.84	90	10-197	57*	30
Heptachlor	9.9 U	9.9 DU	7.77	0 *	10 DU	7.84	0 *	12-160	NC	30
Heptachlor Epoxide	9.9 U	5.96 DJ	7.77	77	10 DU	7.84	0 *	10-180	NC	30
Methoxychlor	9.9 U	9.9 DU	7.77	0 *	10 DU	7.84	0 *	10-200	NC	30
alpha-BHC	9.9 U	4.99 DJ	7.77	64	10 DU	7.84	0 *	10-149	NC	30
alpha-Chlordane	9.9 U	9.9 DU	7.77	0 *	10 DU	7.84	0 *	10-175	NC	30
beta-BHC	9.9 U	5.19 DJ	7.77	67	10 DU	7.84	0 *	10-162	NC	30
delta-BHC	9.9 U	5.35 DJ	7.77	69	10 DU	7.84	0 *	10-157	NC	30
gamma-BHC (Lindane)	9.9 U	5.75 DJ	7.77	74	10 DU	7.84	0 *	10-170	NC	30
gamma-Chlordane	9.9 U	5.28 DJ	7.77	68	10 DU	7.84	0 *	10-176	NC	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:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2013972-01	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	
4,4'-DDE	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	
4,4'-DDT	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	
Aldrin	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	
Dieldrin	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	
Endosulfan I	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	
Endosulfan II	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	
Endosulfan Sulfate	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	
Endrin	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	
Endrin Aldehyde	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	
Endrin Ketone	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	
Heptachlor	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	
Heptachlor Epoxide	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	
Methoxychlor	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	
Toxaphene	33 U	33	20	1	11/18/20 17:16	11/13/20	
alpha-BHC	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	
alpha-Chlordane	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	
beta-BHC	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	
delta-BHC	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	
gamma-BHC (Lindane)	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	
gamma-Chlordane	1.7 U	1.7	0.86	1	11/18/20 17:16	11/13/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	9 *	10 - 145	11/18/20 17:16	*
Tetrachloro-m-xylene	7 *	10 - 123	11/18/20 17:16	*

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2015080-03	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	
4,4'-DDE	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	
4,4'-DDT	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	
Aldrin	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	
Dieldrin	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	
Endosulfan I	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	
Endosulfan II	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	
Endosulfan Sulfate	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	
Endrin	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	
Endrin Aldehyde	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	
Endrin Ketone	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	
Heptachlor	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	
Heptachlor Epoxide	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	
Methoxychlor	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	
Toxaphene	33 U	33	20	1	12/14/20 02:11	12/7/20	
alpha-BHC	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	
alpha-Chlordane	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	
beta-BHC	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	
delta-BHC	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	
gamma-BHC (Lindane)	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	
gamma-Chlordane	1.7 U	1.7	0.85	1	12/14/20 02:11	12/7/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	87	10 - 145	12/14/20 02:11	
Tetrachloro-m-xylene	79	10 - 123	12/14/20 02:11	

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010644
Project: Rochester REDI/1940100197 **Date Analyzed:** 11/18/20
Sample Matrix: Soil

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2013972-02			RQ2013972-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
4,4'-DDD	8081B	1.98	6.65	30 *	1.81	6.70	27 *	33-149	9	30
4,4'-DDE	8081B	1.84	6.65	28 *	1.80	6.70	27 *	38-147	3	30
4,4'-DDT	8081B	1.87	6.65	28 *	1.75	6.70	26 *	37-146	7	30
Aldrin	8081B	1.41 J	6.65	21 *	1.47 J	6.70	22 *	25-146	4	30
Dieldrin	8081B	2.21	6.65	33 *	2.12	6.70	32 *	40-140	4	30
Endosulfan I	8081B	2.23	6.65	34 *	2.16	6.70	32 *	35-116	3	30
Endosulfan II	8081B	2.36	6.65	35 *	2.27	6.70	34 *	39-122	4	30
Endosulfan Sulfate	8081B	2.16	6.65	33	2.10	6.70	31	31-132	3	30
Endrin	8081B	2.24	6.65	34 *	2.15	6.70	32 *	40-144	4	30
Endrin Aldehyde	8081B	2.02	6.65	30	1.94	6.70	29	10-109	4	30
Endrin Ketone	8081B	2.40	6.65	36 *	2.32	6.70	35 *	38-122	4	30
Heptachlor	8081B	1.64 J	6.65	25 *	1.61 J	6.70	24 *	34-142	2	30
Heptachlor Epoxide	8081B	2.24	6.65	34 *	2.18	6.70	32 *	37-113	3	30
Methoxychlor	8081B	1.90	6.65	29 *	1.84	6.70	28 *	41-152	3	30
alpha-BHC	8081B	2.32	6.65	35	2.12	6.70	32	28-145	9	30
alpha-Chlordane	8081B	2.03	6.65	31 *	2.00	6.70	30 *	37-114	2	30
beta-BHC	8081B	2.88	6.65	43	2.65	6.70	40	38-144	9	30
delta-BHC	8081B	2.37	6.65	36	2.21	6.70	33	30-153	7	30
gamma-BHC (Lindane)	8081B	2.32	6.65	35	2.16	6.70	32	32-145	7	30
gamma-Chlordane	8081B	2.27	6.65	34	2.20	6.70	33 *	34-123	3	30

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010644
Project: Rochester REDI/1940100197 **Date Analyzed:** 12/14/20
Sample Matrix: Soil

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2015080-04			RQ2015080-05					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
4,4'-DDD	8081B	5.54	6.68	83	6.85	6.65	103	33-149	21	30
4,4'-DDE	8081B	5.61	6.68	84	6.95	6.65	104	38-147	21	30
4,4'-DDT	8081B	6.00	6.68	90	7.47	6.65	112	37-146	22	30
Aldrin	8081B	5.21	6.68	78	6.54	6.65	98	25-146	23	30
Dieldrin	8081B	5.48	6.68	82	6.76	6.65	102	40-140	21	30
Endosulfan I	8081B	5.21	6.68	78	6.39	6.65	96	35-116	20	30
Endosulfan II	8081B	5.24	6.68	79	6.46	6.65	97	39-122	21	30
Endosulfan Sulfate	8081B	5.48	6.68	82	6.78	6.65	102	31-132	21	30
Endrin	8081B	6.22	6.68	93	7.66	6.65	115	40-144	21	30
Endrin Aldehyde	8081B	4.97	6.68	74	6.09	6.65	92	10-109	20	30
Endrin Ketone	8081B	5.58	6.68	84	6.94	6.65	104	38-122	22	30
Heptachlor	8081B	5.42	6.68	81	6.79	6.65	102	34-142	22	30
Heptachlor Epoxide	8081B	5.27	6.68	79	6.44	6.65	97	37-113	20	30
Methoxychlor	8081B	6.29	6.68	94	7.69	6.65	116	41-152	20	30
alpha-BHC	8081B	5.04	6.68	76	6.43	6.65	97	28-145	24	30
alpha-Chlordane	8081B	5.18	6.68	78	6.37	6.65	96	37-114	21	30
beta-BHC	8081B	5.13	6.68	77	6.28	6.65	94	38-144	20	30
delta-BHC	8081B	5.57	6.68	83	6.89	6.65	104	30-153	21	30
gamma-BHC (Lindane)	8081B	5.09	6.68	76	6.39	6.65	96	32-145	23	30
gamma-Chlordane	8081B	5.98	6.68	90	7.42	6.65	112	34-123	22	30

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010644
Project: Rochester REDI/1940100197
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Extraction Method: EPA 3541

Sample Name	Lab Code	Decachlorobiphenyl 22-128	Tetrachloro-m-xylene 14-119
WEB4-0-2-11102020	R2010644-001	75	60
WF2B6-2-4-11102020	R2010644-002	69	58
Method Blank	RQ2013972-01	78	58
Lab Control Sample	RQ2013972-04	84	59
Duplicate Lab Control Sample	RQ2013972-05	87	78
WF2B6-2-4-11102020 MS	RQ2013972-08	56	41
WF2B6-2-4-11102020 DMS	RQ2013972-09	75	49

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20
Sample Matrix:	Soil	**Date Received:**	11/10/20
		Date Analyzed:	11/24/20
		Date Extracted:	11/13/20

Duplicate Matrix Spike Summary
Polychlorinated Biphenyls (PCBs) by GC

Sample Name:	WF2B6-2-4-11102020	**Units:**	ug/Kg
Lab Code:	R2010644-002	**Basis:**	Dry
Analysis Method:	8082A		
Prep Method:	EPA 3541		

		Matrix Spike RQ2013972-08			Duplicate Matrix Spike RQ2013972-09					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1016	41 U	85.0	207	41	109	202	54	26-137	25	30
Aroclor 1260	41 U	99.2	207	48	130	202	64	30-156	27	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:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2013972-01	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	33 U	33	18	1	11/24/20 14:35	11/13/20	
Aroclor 1221	68 U	68	18	1	11/24/20 14:35	11/13/20	
Aroclor 1232	33 U	33	18	1	11/24/20 14:35	11/13/20	
Aroclor 1242	33 U	33	18	1	11/24/20 14:35	11/13/20	
Aroclor 1248	33 U	33	18	1	11/24/20 14:35	11/13/20	
Aroclor 1254	33 U	33	18	1	11/24/20 14:35	11/13/20	
Aroclor 1260	33 U	33	18	1	11/24/20 14:35	11/13/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	78	22 - 128	11/24/20 14:35	
Tetrachloro-m-xylene	58	14 - 119	11/24/20 14:35	

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010644
Date Analyzed: 11/24/20

Duplicate Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs) by GC

Units:ug/Kg
Basis: Dry

			Lab Control Sample			Duplicate Lab Control Sample				
			RQ2013972-04			RQ2013972-05				
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1016	8082A	113	166	68	127	168	76	41-127	12	30
Aroclor 1260	8082A	129	166	78	131	168	78	37-127	2	30

Metals

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

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BLANKS

Contract: R2010644

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: WEB4-0-2-111

Preparation Blank Matrix (soil/water): SOIL

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

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	120.00	U	120.00	U	120.00	U	120.00	U	12.000	U	P
Antimony	5.40	U	5.40	U	5.40	U	5.80	J	0.540	U	P
Arsenic	7.00	U	7.00	U	7.00	U	7.00	U	0.700	U	P
Barium	15.00	U	15.00	U	15.00	U	15.00	U	1.500	U	P
Beryllium	0.60	U	0.60	U	0.60	U	0.60	U	0.060	U	P
Cadmium	2.40	U	2.40	U	2.40	U	2.40	U	0.240	U	P
Mercury	0.078	U	0.078	U	0.078	U	0.078	U	0.013	U	CV
Calcium	320.00	U	320.00	U	320.00	U	320.00	U	32.000	U	P
Chromium	3.50	U	3.50	U	3.50	U	3.50	U	0.350	U	P
Cobalt	4.60	U	4.60	U	4.60	U	4.60	U	0.460	U	P
Copper	6.30	U	6.30	U	6.30	U	6.30	U	0.630	U	P
Iron	130.00	U	130.00	U	130.00	U	130.00	U	13.000	U	P
Lead	4.00	U	4.00	U	4.00	U	4.00	U	0.400	U	P
Magnesium	130.00	U	130.00	U	130.00	U	130.00	U	13.000	U	P
Manganese	15.00	U	15.00	U	15.00	U	15.00	U	1.500	U	P
Nickel	6.60	U	6.60	U	6.60	U	6.60	U	0.660	U	P
Potassium	500.00	U	500.00	U	500.00	U	500.00	U	50.000	U	P
Selenium	5.40	U	-6.50	J	5.40	U	5.40	U	0.540	U	P
Silver	0.90	U	0.90	U	0.90	U	0.90	U	0.090	U	P
Sodium	520.00	U	520.00	U	520.00	U	520.00	U	52.000	U	P
Thallium	6.50	U	6.50	U	6.50	U	6.50	U	0.650	U	P
Vanadium	7.10	U	7.10	U	7.10	U	7.10	U	0.710	U	P
Zinc	14.00	U	14.00	U	14.00	U	14.00	U	1.400	U	P

Comments:

METALS

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BLANKS

Contract: R2010644

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: WEB4-0-2-111

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			120.00	U	120.00	U	120.00	U			P
Antimony			5.40	U	5.40	U	6.30	J			P
Arsenic			7.00	U	7.00	U	7.00	U			P
Barium			15.00	U	15.00	U	15.00	U			P
Beryllium			0.60	U	0.60	U	0.60	U			P
Cadmium			2.40	U	2.40	U	2.40	U			P
Mercury			0.078	U							CV
Calcium			320.00	U	320.00	U	320.00	U			P
Chromium			3.50	U	3.50	U	3.50	U			P
Cobalt			4.60	U	4.60	U	4.60	U			P
Copper			6.30	U	6.30	U	6.30	U			P
Iron			130.00	U	130.00	U	130.00	U			P
Lead			4.00	U	4.00	U	4.00	U			P
Magnesium			130.00	U	130.00	U	130.00	U			P
Manganese			15.00	U	15.00	U	15.00	U			P
Nickel			6.60	U	6.60	U	6.60	U			P
Potassium			500.00	U	500.00	U	500.00	U			P
Selenium			5.40	U	5.40	U	5.40	U			P
Silver			0.90	U	0.90	U	0.90	U			P
Sodium			520.00	U	520.00	U	520.00	U			P
Thallium			6.50	U	6.50	U	6.50	U			P
Vanadium			7.10	U	7.10	U	7.10	U			P
Zinc			14.00	U	14.00	U	14.00	U			P

Comments:

METALS

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BLANKS

Contract: R2010644

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: WEB4-0-2-111

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			120.00	U							P
Antimony			5.40	U							P
Arsenic			7.00	U							P
Barium			15.00	U							P
Beryllium			0.60	U							P
Cadmium			2.40	U							P
Calcium			320.00	U							P
Chromium			3.50	U							P
Cobalt			4.60	U							P
Copper			6.30	U							P
Iron			130.00	U							P
Lead			4.00	U							P
Magnesium			130.00	U							P
Manganese			15.00	U							P
Nickel			6.60	U							P
Potassium			500.00	U							P
Selenium			5.40	U							P
Silver			0.90	U							P
Sodium			520.00	U							P
Thallium			6.50	U							P
Vanadium			7.10	U							P
Zinc			14.00	U							P

Comments:

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LABORATORY CONTROL SAMPLE

Contract: R2010644

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: WEB4-0-2-111

Solid LCS Source: CPI

Aqueous LCS Source:

Analyte	Aqueous (ug/L			Solid (mg/K				
	True	Found	%R	True	Found	C	Limits	%R
Aluminum				200	194.97		160 240	97
Antimony				50	46.08		40 60	92
Arsenic				4	3.47		3.2 4.8	87
Barium				200	200.04		160 240	100
Beryllium				5	4.88		4 6	98
Cadmium				5	4.96		4 6	99
Mercury				0.166	0.17		.133 .199	102
Calcium				200	200.55		160 240	100
Chromium				20	20.15		16 24	101
Cobalt				50	50.07		40 60	100
Copper				25	24.70		20 30	99
Iron				100	98.27		80 120	98
Lead				50	49.02		40 60	98
Magnesium				200	192.24		160 240	96
Manganese				50	48.84		40 60	98
Nickel				50	49.43		40 60	99
Potassium				2000	1885.20		1600 2400	94
Selenium				101	85.80		80.8 121	85
Silver				5	4.80		4 6	96
Sodium				2000	1917.47		1600 2400	96
Thallium				200	179.94		160 240	90
Vanadium				50	49.24		40 60	98
Zinc				50	48.17		40 60	96

Comments: _____

General Chemistry

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

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	Dry
Lab Code:	R2010644-MB		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	0.30 U	mg/Kg	0.30	0.17	1	11/19/20 11:13	11/17/20	

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010644
Date Analyzed: 11/19/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/Kg
Basis: Dry

Lab Control Sample
R2010644-LCS1

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Cyanide, Total	9012B	3.12	3.00	104	85-115

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010644
Date Analyzed: 11/19/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/Kg
Basis: Dry

Lab Control Sample
R2010644-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Cyanide, Total	9012B	17.5	18.0	97	85-115

Subcontracted Analytical Parameters

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

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

December 03, 2020 **Analytical Report for Service Request No:** R2010644

Janice Jaeger
ALS Environmental
1565 Jefferson Rd, Building 300
Suite 360
Rochester, NY 14623

RE: Rochester REDI / 1940100197

Dear Janice Jaeger,

Enclosed are the results of the sample(s) submitted to our laboratory November 10, 2020
For your reference, these analyses have been assigned our service request number **R2010644.**

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 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Mark Harris
Project Manager

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

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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
LOD	Limit of Detection
LOQ	Limit of Quantitation
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.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI
Sample Matrix: Soil

Service Request: R2010644
Date Received: 11/10/2020

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 II requested by the client.

Sample Receipt:

Two soil samples were received for analysis at ALS Environmental on 11/10/2020. 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.

Organic LC:

Method PFC/537M, 11/22/2020:The control criteria was exceeded for one or more surrogates in Continuing Calibration Verification (CCV) KQ2019131-01. The recoveries of the associated native analytes were within control criteria, which indicated the analysis was in control. No further corrective action was appropriate.

Approved by _____ Date 12/03/2020

Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Intra-Network Chain of Custody

1565 Jefferson Rd, Building 300 • Rochester, NY 14623 • 585-288-5380 • FAX 585-288-8475

ALS Contact: Janice Jaeger

Project Name: Rochester REDI
Project Number: 1940100197
Project Manager: Deborah Wright
Company: O'Brien & Gere Engineers, Incorporated
QAP: LAB QAP

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Date Received	Send To	PFAS PFC/537M
R2010644-001	WEB4-0-2-11102020	1	Soil	11/10/20	1148	11/10/20	KELSO	IV
R2010644-002	WF2B6-2-4-11102020	1	Soil	11/10/20	1400	11/10/20	KELSO	IV

Folder Comments:
MRL U need tier 2 and 4

Special Instructions/Comments

pH Checked _____

Turnaround Requirements

____ **RUSH** (Surcharges Apply)

PLEASE CIRCLE WORK DAYS

1 2 3 4 5

X **STANDARD**

Requested FAX Date: _____

Requested Report Date: 11/27/20

Report Requirements

____ I. Results Only

X II. Results + QC Summaries

____ III. Results + QC and Calibration Summaries

X IV. Data Validation Report with Raw Data

PQL/MDL/J Y

EDD Y

Invoice Information

PO# 58R2010644

Bill to

Relinquished By: 11/12/2020 1210

Received By: ALS KELSO 11/13/20 1030

Airbill Number: _____

PM MH

Cooler Receipt and Preservation Form

Client ALS - Rochester Service Request ~~R20~~ R2010644

Received: 11/3/20 Opened: 11/3/20 By: [illegible] Unloaded: 11/3/20 By: [illegible]

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other*_____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 1 Front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N
4. Was a Temperature Blank present in cooler? NA (Y) N If yes, notate the temperature in the appropriate column below.
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA Y N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. NA Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
N/A	1.5	IR02		X	yes	1730 2433 3808	

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
14. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

Total Solids

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Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20
Sample Matrix:	Soil	**Date Received:**	11/10/20
Analysis Method:	160.3 Modified	**Units:**	Percent
		Basis:	As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
WEB4-0-2-11102020	R2010644-001	**86.5**	-	1	11/19/20 12:47	
WF2B6-2-4-11102020	R2010644-002	**83.5**	-	1	11/19/20 12:47	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project	Rochester REDI/1940100197	**Date Collected:**	11/10/20
Sample Matrix:	Soil	**Date Received:**	11/10/20
		Date Analyzed:	11/19/20

Replicate Sample Summary
Inorganic Parameters

Sample Name:	WF2B6-2-4-11102020	**Units:**	Percent
Lab Code:	R2010644-002	**Basis:**	As Received

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample R2010644-002DUP Result	Average	RPD	RPD Limit
Solids, Total	160.3 Modified	-	83.5	83.8	83.7	<1	20

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.

PFAS by HPLC/MS/MS

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1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Sample Results

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1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
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Organic Compounds by HPLC/MS/MS

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Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Units:**	ng/g
Lab Code:	R2010644-001	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFSAs)								
Perfluorobutane sulfonic acid (PFBS)	1.1	U	1.1	0.24	1	11/22/20 19:05	11/20/20	
Perfluorohexane sulfonic acid (PFHxS)	1.1	U	1.1	0.32	1	11/22/20 19:05	11/20/20	
Perfluoroheptane sulfonic acid (PFHpS)	1.1	U	1.1	0.066	1	11/22/20 19:05	11/20/20	
Perfluorooctane sulfonic acid (PFOS)	**1.4**		1.1	0.14	1	11/22/20 19:05	11/20/20	
Perfluorodecane sulfonic acid (PFDS)	1.1	U	1.1	0.19	1	11/22/20 19:05	11/20/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)								
Perfluorobutanoic acid (PFBA)	**0.47**	**J**	1.1	0.42	1	11/22/20 19:05	11/20/20	
Perfluoropentanoic acid (PFPeA)	1.1	U	1.1	0.23	1	11/22/20 19:05	11/20/20	
Perfluorohexanoic acid (PFHxA)	1.1	U	1.1	0.33	1	11/22/20 19:05	11/20/20	
Perfluoroheptanoic acid (PFHpA)	**0.26**	**J**	1.1	0.21	1	11/22/20 19:05	11/20/20	
Perfluorooctanoic acid (PFOA)	**0.42**	**J**	1.1	0.14	1	11/22/20 19:05	11/20/20	
Perfluorononanoic acid (PFNA)	1.1	U	1.1	0.36	1	11/22/20 19:05	11/20/20	
Perfluorodecanoic acid (PFDA)	1.1	U	1.1	0.28	1	11/22/20 19:05	11/20/20	
Perfluoroundecanoic acid (PFUnDA)	1.1	U	1.1	0.20	1	11/22/20 19:05	11/20/20	
Perfluorododecanoic acid (PFDoDA)	1.1	U	1.1	0.29	1	11/22/20 19:05	11/20/20	
Perfluorotridecanoic acid (PFTrDA)	1.1	U	1.1	0.23	1	11/22/20 19:05	11/20/20	
Perfluorotetradecanoic acid (PFTeDA)	1.1	U	1.1	0.20	1	11/22/20 19:05	11/20/20	
Perfluoroalkyl Sulfonamido Substances								
Perfluorooctane sulfonamide (FOSA)	1.1	U	1.1	0.072	1	11/22/20 19:05	11/20/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	1.1	U	1.1	0.29	1	11/22/20 19:05	11/20/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	1.1	U	1.1	0.22	1	11/22/20 19:05	11/20/20	
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)								
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	1.1	U	1.1	0.16	1	11/22/20 19:05	11/20/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	1.1	U	1.1	0.031	1	11/22/20 19:05	11/20/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 11:48
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WEB4-0-2-11102020	**Units:**	ng/g
Lab Code:	R2010644-001	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	53	33 - 109	11/22/20 19:05	
18O2-PFHxS	77	36 - 120	11/22/20 19:05	
13C4-PFOS	71	32 - 130	11/22/20 19:05	
13C4-PFBA	64	34 - 116	11/22/20 19:05	
13C5-PFPeA	75	39 - 133	11/22/20 19:05	
13C2-PFHxA	75	32 - 136	11/22/20 19:05	
13C4-PFHpA	77	36 - 133	11/22/20 19:05	
13C4-PFOA	50	31 - 134	11/22/20 19:05	
13C5-PFNA	94	27 - 133	11/22/20 19:05	
13C2-PFDA	77	30 - 137	11/22/20 19:05	
13C2-PFUnDA	85	32 - 146	11/22/20 19:05	
13C2-PFDoDA	84	36 - 136	11/22/20 19:05	
13C2-PFTeDA	89	39 - 138	11/22/20 19:05	
13C8-FOSA	67	40 - 132	11/22/20 19:05	
D3-MeFOSAA	124	20 - 154	11/22/20 19:05	
D5-EtFOSAA	133	29 - 153	11/22/20 19:05	
13C2-6:2 FTS	97	30 - 140	11/22/20 19:05	
13C2-8:2 FTS	170	9 - 171	11/22/20 19:05	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 14:00
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WF2B6-2-4-11102020	**Units:**	ng/g
Lab Code:	R2010644-002	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFSAs)								
Perfluorobutane sulfonic acid (PFBS)	1.1	U	1.1	0.25	1	11/22/20 19:16	11/20/20	
Perfluorohexane sulfonic acid (PFHxS)	1.1	U	1.1	0.34	1	11/22/20 19:16	11/20/20	
Perfluoroheptane sulfonic acid (PFHpS)	1.1	U	1.1	0.070	1	11/22/20 19:16	11/20/20	
Perfluorooctane sulfonic acid (PFOS)	**0.91**	**J**	1.1	0.15	1	11/22/20 19:16	11/20/20	
Perfluorodecane sulfonic acid (PFDS)	1.1	U	1.1	0.20	1	11/22/20 19:16	11/20/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)								
Perfluorobutanoic acid (PFBA)	1.1	U	1.1	0.44	1	11/22/20 19:16	11/20/20	
Perfluoropentanoic acid (PFPeA)	1.1	U	1.1	0.24	1	11/22/20 19:16	11/20/20	
Perfluorohexanoic acid (PFHxA)	1.1	U	1.1	0.35	1	11/22/20 19:16	11/20/20	
Perfluoroheptanoic acid (PFHpA)	1.1	U	1.1	0.22	1	11/22/20 19:16	11/20/20	
Perfluorooctanoic acid (PFOA)	**0.24**	**J**	1.1	0.15	1	11/22/20 19:16	11/20/20	
Perfluorononanoic acid (PFNA)	1.1	U	1.1	0.38	1	11/22/20 19:16	11/20/20	
Perfluorodecanoic acid (PFDA)	1.1	U	1.1	0.30	1	11/22/20 19:16	11/20/20	
Perfluoroundecanoic acid (PFUnDA)	1.1	U	1.1	0.21	1	11/22/20 19:16	11/20/20	
Perfluorododecanoic acid (PFDoDA)	1.1	U	1.1	0.31	1	11/22/20 19:16	11/20/20	
Perfluorotridecanoic acid (PFTrDA)	1.1	U	1.1	0.24	1	11/22/20 19:16	11/20/20	
Perfluorotetradecanoic acid (PFTeDA)	1.1	U	1.1	0.21	1	11/22/20 19:16	11/20/20	
Perfluoroalkyl Sulfonamido Substances								
Perfluorooctane sulfonamide (FOSA)	1.1	U	1.1	0.076	1	11/22/20 19:16	11/20/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	1.1	U	1.1	0.31	1	11/22/20 19:16	11/20/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	1.1	U	1.1	0.23	1	11/22/20 19:16	11/20/20	
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)								
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	1.1	U	1.1	0.17	1	11/22/20 19:16	11/20/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	1.1	U	1.1	0.033	1	11/22/20 19:16	11/20/20	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	11/10/20 14:00
Sample Matrix:	Soil	**Date Received:**	11/10/20 16:30
Sample Name:	WF2B6-2-4-11102020	**Units:**	ng/g
Lab Code:	R2010644-002	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	60	33 - 109	11/22/20 19:16	
18O2-PFHxS	57	36 - 120	11/22/20 19:16	
13C4-PFOS	77	32 - 130	11/22/20 19:16	
13C4-PFBA	66	34 - 116	11/22/20 19:16	
13C5-PFPeA	83	39 - 133	11/22/20 19:16	
13C2-PFHxA	71	32 - 136	11/22/20 19:16	
13C4-PFHpA	66	36 - 133	11/22/20 19:16	
13C4-PFOA	56	31 - 134	11/22/20 19:16	
13C5-PFNA	104	27 - 133	11/22/20 19:16	
13C2-PFDA	83	30 - 137	11/22/20 19:16	
13C2-PFUnDA	86	32 - 146	11/22/20 19:16	
13C2-PFDoDA	92	36 - 136	11/22/20 19:16	
13C2-PFTeDA	102	39 - 138	11/22/20 19:16	
13C8-FOSA	74	40 - 132	11/22/20 19:16	
D3-MeFOSAA	112	20 - 154	11/22/20 19:16	
D5-EtFOSAA	124	29 - 153	11/22/20 19:16	
13C2-6:2 FTS	95	30 - 140	11/22/20 19:16	
13C2-8:2 FTS	124	9 - 171	11/22/20 19:16	

QC Summary Forms

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Organic Compounds by HPLC/MS/MS

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Client: Ramboll US Corp (Syracuse) **Service Request:** R2010644
Project: Rochester REDI/1940100197
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Extraction Method: ALS SOP

Surrogate	Control Limits	WEB4-0-2-11102020 R2010644-001	WF2B6-2-4-11102020 R2010644-002	Method Blank KQ2018437-03
13C3-PFBS	33-109	53	60	62
18O2-PFHxS	36-120	77	57	70
13C4-PFOS	32-130	71	77	79
13C4-PFBA	34-116	64	66	75
13C5-PFPeA	39-133	75	83	85
13C2-PFHxA	32-136	75	71	68
13C4-PFHpA	36-133	77	66	71
13C4-PFOA	31-134	50	56	65
13C5-PFNA	27-133	94	104	102
13C2-PFDA	30-137	77	83	83
13C2-PFUnDA	32-146	85	86	87
13C2-PFDoDA	36-136	84	92	88
13C2-PFTeDA	39-138	89	102	95
13C8-FOSA	40-132	67	74	74
D3-MeFOSAA	20-154	124	112	95
D5-EtFOSAA	29-153	133	124	103
13C2-6:2 FTS	30-140	97	95	71
13C2-8:2 FTS	9-171	170	124	90

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with an pound (#) indicate the control criteria is not acceptable.

Client: Ramboll US Corp (Syracuse) **Service Request:** R2010644
Project: Rochester REDI/1940100197
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Extraction Method: ALS SOP

Surrogate	Control Limits	Lab Control Sample KQ2018437-01	Duplicate Lab Control Sample KQ2018437-02
13C3-PFBS	33-109	60	58
18O2-PFHxS	36-120	67	69
13C4-PFOS	32-130	74	71
13C4-PFBA	34-116	69	67
13C5-PFPeA	39-133	81	81
13C2-PFHxA	32-136	76	76
13C4-PFHpA	36-133	72	75
13C4-PFOA	31-134	47	49
13C5-PFNA	27-133	97	95
13C2-PFDA	30-137	80	79
13C2-PFUnDA	32-146	79	75
13C2-PFDoDA	36-136	81	79
13C2-PFTeDA	39-138	96	92
13C8-FOSA	40-132	65	64
D3-MeFOSAA	20-154	99	98
D5-EtFOSAA	29-153	102	104
13C2-6:2 FTS	30-140	56	52
13C2-8:2 FTS	9-171	83	80

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with an pound (#) indicate the control criteria is not acceptable.

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/g
Lab Code:	KQ2018437-03	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFSAs)							
Perfluorobutane sulfonic acid (PFBS)	1.0 U	1.0	0.22	1	11/22/20 18:11	11/20/20	
Perfluorohexane sulfonic acid (PFHxS)	1.0 U	1.0	0.30	1	11/22/20 18:11	11/20/20	
Perfluoroheptane sulfonic acid (PFHpS)	1.0 U	1.0	0.062	1	11/22/20 18:11	11/20/20	
Perfluorooctane sulfonic acid (PFOS)	1.0 U	1.0	0.13	1	11/22/20 18:11	11/20/20	
Perfluorodecane sulfonic acid (PFDS)	1.0 U	1.0	0.17	1	11/22/20 18:11	11/20/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	1.0 U	1.0	0.39	1	11/22/20 18:11	11/20/20	
Perfluoropentanoic acid (PFPeA)	1.0 U	1.0	0.21	1	11/22/20 18:11	11/20/20	
Perfluorohexanoic acid (PFHxA)	1.0 U	1.0	0.31	1	11/22/20 18:11	11/20/20	
Perfluoroheptanoic acid (PFHpA)	1.0 U	1.0	0.19	1	11/22/20 18:11	11/20/20	
Perfluorooctanoic acid (PFOA)	1.0 U	1.0	0.13	1	11/22/20 18:11	11/20/20	
Perfluorononanoic acid (PFNA)	1.0 U	1.0	0.33	1	11/22/20 18:11	11/20/20	
Perfluorodecanoic acid (PFDA)	1.0 U	1.0	0.26	1	11/22/20 18:11	11/20/20	
Perfluoroundecanoic acid (PFUnDA)	1.0 U	1.0	0.18	1	11/22/20 18:11	11/20/20	
Perfluorododecanoic acid (PFDoDA)	1.0 U	1.0	0.27	1	11/22/20 18:11	11/20/20	
Perfluorotridecanoic acid (PFTrDA)	1.0 U	1.0	0.21	1	11/22/20 18:11	11/20/20	
Perfluorotetradecanoic acid (PFTeDA)	1.0 U	1.0	0.18	1	11/22/20 18:11	11/20/20	
Perfluoroalkyl Sulfonamido Substances							
Perfluorooctane sulfonamide (FOSA)	1.0 U	1.0	0.067	1	11/22/20 18:11	11/20/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	1.0 U	1.0	0.27	1	11/22/20 18:11	11/20/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	1.0 U	1.0	0.20	1	11/22/20 18:11	11/20/20	
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	1.0 U	1.0	0.15	1	11/22/20 18:11	11/20/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	1.0 U	1.0	0.029	1	11/22/20 18:11	11/20/20	

Analytical Report

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/g
Lab Code:	KQ2018437-03	**Basis:**	Dry

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	62	33 - 109	11/22/20 18:11	
18O2-PFHxS	70	36 - 120	11/22/20 18:11	
13C4-PFOS	79	32 - 130	11/22/20 18:11	
13C4-PFBA	75	34 - 116	11/22/20 18:11	
13C5-PFPeA	85	39 - 133	11/22/20 18:11	
13C2-PFHxA	68	32 - 136	11/22/20 18:11	
13C4-PFHpA	71	36 - 133	11/22/20 18:11	
13C4-PFOA	65	31 - 134	11/22/20 18:11	
13C5-PFNA	102	27 - 133	11/22/20 18:11	
13C2-PFDA	83	30 - 137	11/22/20 18:11	
13C2-PFUnDA	87	32 - 146	11/22/20 18:11	
13C2-PFDoDA	88	36 - 136	11/22/20 18:11	
13C2-PFTeDA	95	39 - 138	11/22/20 18:11	
13C8-FOSA	74	40 - 132	11/22/20 18:11	
D3-MeFOSAA	95	20 - 154	11/22/20 18:11	
D5-EtFOSAA	103	29 - 153	11/22/20 18:11	
13C2-6:2 FTS	71	30 - 140	11/22/20 18:11	
13C2-8:2 FTS	90	9 - 171	11/22/20 18:11	

Client:	Ramboll US Corp (Syracuse)	**Service Request:**	R2010644
Project:	Rochester REDI/1940100197	**Date Analyzed:**	11/22/20
Sample Matrix:	Soil	**Date Extracted:**	11/20/20

Duplicate Lab Control Sample Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method:	PFC/537M	**Units:**	ng/g
Prep Method:	ALS SOP	**Basis:**	Dry
		Analysis Lot:	704525

	Lab Control Sample KQ2018437-01			Duplicate Lab Control Sample KQ2018437-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	9.30	7.61	122	8.85	7.61	116	69-147	5	50
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	8.82	7.68	115	8.14	7.68	106	66-141	8	50
N-Ethyl perfluorooctane sulfonamidoacetic acid	8.30	8.00	104	8.55	8.00	107	57-159	3	50
N-Methyl perfluorooctane sulfonamidoacetic acid	8.39	8.00	105	9.46	8.00	118	69-162	12	50
Perfluorobutane sulfonic acid (PFBS)	7.39	7.10	104	6.90	7.10	97	48-148	7	50
Perfluorobutanoic acid (PFBA)	9.59	8.00	120	9.32	8.00	116	29-179	3	50
Perfluorodecane sulfonic acid (PFDS)	6.88	7.72	89	7.53	7.72	98	83-152	9	50
Perfluorodecanoic acid (PFDA)	9.06	8.00	113	8.89	8.00	111	73-142	2	50
Perfluorododecanoic acid (PFDoDA)	8.07	8.00	101	8.61	8.00	108	69-150	6	50
Perfluoroheptane sulfonic acid (PFHpS)	7.23	7.63	95	6.56	7.63	86	69-173	10	50
Perfluoroheptanoic acid (PFHpA)	7.71	8.00	96	8.26	8.00	103	73-136	7	50
Perfluorohexane sulfonic acid (PFHxS)	7.31	7.30	100	7.07	7.30	97	75-142	3	50
Perfluorohexanoic acid (PFHxA)	8.88	8.00	111	8.79	8.00	110	68-148	1	50
Perfluorononanoic acid (PFNA)	8.89	8.00	111	9.45	8.00	118	63-160	6	50
Perfluorooctane sulfonamide (FOSA)	8.68	8.00	109	8.74	8.00	109	63-138	<1	50
Perfluorooctane sulfonic acid (PFOS)	8.57	7.43	115	7.78	7.43	105	72-141	10	50
Perfluorooctanoic acid (PFOA)	8.87	8.00	111	8.48	8.00	106	77-151	5	50
Perfluoropentanoic acid (PFPeA)	8.53	8.00	107	8.15	8.00	102	64-131	4	50
Perfluorotetradecanoic acid (PFTeDA)	7.89	8.00	99	7.94	8.00	99	70-143	<1	50
Perfluorotridecanoic acid (PFTrDA)	8.65	8.00	108	9.20	8.00	115	63-134	6	50
Perfluoroundecanoic acid (PFUnDA)	9.07	8.00	113	8.61	8.00	108	69-147	5	50

APPENDIX B
BORING LOGS

RAMBOLL

SOIL BORING LOG

BORING ID: EB1
INSPECTOR: Veronica Davies

PROJECT: Genesee River REDI
CLIENT: NYS REDI
JOB #: 169000
SITE NAME: Genesee River East
SITE LOC.: Rochester NY
BORING LOC.: EB1
DATE STARTED: 11/04/2020
DATE COMPLETED: 11/05/2020
FINAL STATIC WL: 5.8'

DRILLING CONT.: CME
FOREMAN: BEAU Fletcher
RIG TYPE: CME550X
PURPOSE:
DRILLING METHOD: HSA SS
HAMMER / FALL: AUTO / 30"
SAMPLER TYPE: Split spoon
SAMPLER DIAMETER: 2"
NORTHING: -
EASTING: -
ELEVATION: -
DATUM: -

Sample No.	Sample Start Depth (ft.)	Sample End Depth (ft.)	Penetration / Recovery	Blows/6"	"N" Value	MATERIAL DESCRIPTION	General Stratum Descrip.	Field Testing PID (ppm)	
1A	0	0.5	14	1 12	29	Topsoil /organic matter (moist)		0.2	
1B	0.5	2		17 9		Fill Brown /black cmt sand cmf gravel silt (moist)		0.1	
2	2	4	18	10 11 11 8	22	Brown silt (moist very stiff) used 3" spoon (Native Fill env. sample)		0.1	
3	4	6	14	3 3 2 2	5	Brown /grey /cmt sand trace organic mat (moist loose)		0.1	
4	6	8	19	6 7 12 14	19	grey /cmf sand (wet med compact)		0	
5	8	10	20	3 2 10 17	12	grey /cmf sand trace organic matter (wet, med compact)		0	
6	10	12	24	14 11 22 3	33	grey /cmf sand wet compact entir sample (Native)		0	

NOTES:

RAMBOLL

SOIL BORING LOG

BORING ID: EB1

INSPECTOR: VeronicaD

Sample No.	Sample Start Depth (ft.)	Sample End Depth (ft.)	Penetration / Recovery	Blows/6"	"N" Value	MATERIAL DESCRIPTION	General Stratum Descrip.	Field Testing	
								PID (ppm)	Other
7	12	14	14	5 12 5 4	17	grey / cmf sand trace silt trace cmf gravel (wet med compact)	O		
8	14	16	5	2 2 2 a	4	grey brown / silt little organic matter, little cmf sand moist med stiff	O		
9	16	18	20	WH 1 2 1	3	grey brown / silt little organic matter, trace clay, cmf sand (moist soft)	O		
10	18	20	17	WH WH 2 2	2	Grey, brown / silt, little organic material, little clay trace mf sand (moist soft)	O		
11	20	22	22	WH WH WH a	WH	grey brown / silt similar soil (wet very soft)	O		
12	22	24	20	WH 2 2 2	4	grey brown / silt little organic matter little clay, moist med stiff	O		

NOTES:

PAGE: _____ of _____

RAMBOLL

SOIL BORING LOG

BORING ID: EB1
INSPECTOR: Veronica Davies

PROJECT: Genesse River
CLIENT: NYS REDI
JOB #: 169000
SITE NAME: Genesse River East
SITE LOC.: Rochester NY
BORING LOC.: EB1
DATE STARTED: 11/04/2020
DATE COMPLETED: 11/05/2020
FINAL STATIC WL: 5.8'

DRILLING CONT.: CME
FOREMAN: BEAU Fletcher
RIG TYPE: CME 550X
PURPOSE:
DRILLING METHOD: HSA 55
HAMMER / FALL: Auto / 30"
SAMPLER TYPE: Split spoon
SAMPLER DIAMETER: 2"
NORTHING: —
EASTING: —
ELEVATION: —
DATUM: —

Sample No.	Sample Start Depth (ft.)	Sample End Depth (ft.)	Penetration / Recovery	Blows/6"	"N" Value	MATERIAL DESCRIPTION	General Stratum Descrip.	Field Testing PID (ppm)	
13	24	26	20	1 1 1 2	2	similar soil (moist) soft	O		
14	26	28	23	2 2 2 3	4	grey silt little organic matter trace clay (moist med stiff)	O		
15	28	30	22	WH WH WH 2	WH	grey/silt little organic material clay (moist very soft)	O		
16	30	32	24	WH 1 3 3	4	similar soil (moist med stiff)	O		
17	32	34	22	WH 2 3 3	5	Brown grey silt some organic material (moist med stiff)	O		
18	34	36	22	2 2 4 5		Brown/silt some organic matter (moist med stiff)	O		

NOTES:

RAMBOLL

SOIL BORING LOG

BORING ID: EB-1

INSPECTOR: Veronica D

Sample No.	Sample Start Depth (ft.)	Sample End Depth (ft.)	Penetration / Recovery	Blows/6"	"N" Value	MATERIAL DESCRIPTION	General Stratum Descrip.	Field Testing	
								PID (ppm)	Other
19	36	38	20	8	14	Red brown/silt trace cmt gravel, trace weathered rock (moist, stiff)		0	
				5					
				9					
				7					
20	38	40	14	5	17	Red/silt, little cmt gravel (mast, very stiff)		0	
				8					
				9					
				14					

NOTES:

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RAMBOLL

SOIL BORING LOG

BORING ID: EB2
INSPECTOR: Veronica Davies

PROJECT: Genesse River
CLIENT: NYS REDI
JOB #: 16900
SITE NAME: Genesse River East
SITE LOC.: Rochester NY
BORING LOC.: EB2
DATE STARTED: 11/6/2020
DATE COMPLETED: 11/06/2020
FINAL STATIC WL: 14.21'

DRILLING CONT.: CME
FOREMAN: BEAU FLETCHER
RIG TYPE: CME 550X
PURPOSE:
DRILLING METHOD: HSAS
HAMMER / FALL: Auto / 30"
SAMPLER TYPE: split spoon
SAMPLER DIAMETER: 2"
NORTHING: -
EASTING: -
ELEVATION: -
DATUM: -

Sample No.	Sample Start Depth (ft.)	Sample End Depth (ft.)	Penetration / Recovery	Blows/6"	"N" Value	MATERIAL DESCRIPTION	General Stratum Descrip.	Field Testing PID (ppm)	
1	0	2	19	4	28	(Fill) brown/silt cmf gravel cmf sand/organic matter (moist)		0	
				12					
				16					
				14					
2	2	4	18	3	8	brown/cmf sand (moist loose)		0	
				4					
				4					
				5					
3	4	6	16	3	16	brown/cmf sand (wet med compact)		0	
				4					
				6					
				8					
4	6	8	23	8	15	grey brown cmf sand trace cmf gravel (wet med compact)		0	
				10					
				5					
				6					
5	8	10	20	12	7	similar soil (wet loose)		0	
				5					
				2					
				2					
6A	10	11.0	24	1	3	similar soil (wet, very loose)		0	
				1					
6B	11.0	12		2		Grey brown silt trace clay trace organic matter (moist soft)		0	
				2					

NOTES:

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RAMBOLL

SOIL BORING LOG

BORING ID: EB2

INSPECTOR: Veronica D.

Sample No.	Sample Start Depth (ft.)	Sample End Depth (ft.)	Penetration / Recovery	Blows/6"	"N" Value	MATERIAL DESCRIPTION	General Stratum Descrip.	Field Testing	
								PID (ppm)	Other
7	12	14	15	1 1 2 1	3	Grey brown / silt little organic matter little clay (moist) soft		0	
8	14	16	17	1 1 1 1	2	grey / silt trace organic matter trace clay (moist soft)		0	
9	16	18	10	WH WH 1 1	1	similar soil (moist very soft)		0	
10	18	20	20	1 2 2 2	4	similar soil (moist loose)		0	

NOTES:

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RAMBOLL

SOIL BORING LOG

BORING ID: EB4
INSPECTOR: Veronica Davis

PROJECT: Genesse River
CLIENT: NYS REDI
JOB #: 160900
SITE NAME: Genesse River East
SITE LOC.: Rochester NY
BORING LOC.: EB4
DATE STARTED: 11/5/2020
DATE COMPLETED: 11/5/2020
FINAL STATIC WL: 12'

DRILLING CONT.: CME
FOREMAN: Beau Fletcher
RIG TYPE: CME 550x
PURPOSE:
DRILLING METHOD: HSASS
HAMMER / FALL: Auto / 30"
SAMPLER TYPE: Split spoon
SAMPLER DIAMETER: 2"
NORTHING: -
EASTING: -
ELEVATION: -
DATUM: -

Sample No.	Sample Start Depth (ft.)	Sample End Depth (ft.)	Penetration / Recovery	Blows/6"	"N" Value	MATERIAL DESCRIPTION	General Stratum Descrip.	Field Testing PID (ppm)	
1						Solid Asphalt			
1	0.5	2	15	16 9 7	16	(fill) brown black asphalt gravel, cmf sand (moist)		0	
2	2	4	16	8 5 4 3	9	(fill) brown, black cmf sand cmf gravel (moist)		0	
3	4	6	16	9 9 10 15	15	(Possible fill) grey / cmf sand trace cmf gravel (wet med compact)		0	
4	6	8	20	10 9 15 22	24	grey / cmf sand (wet) med compact		0	
5	8	10	24	7 12 11 13	23	similar soil (wet) med compact		0	
6	10	12	24	8 8 11 10	19	similar soil (wet med compact		0	

NOTES:

RAMBOLL

SOIL BORING LOG

BORING ID: _____

INSPECTOR: _____

Sample No.	Sample Start Depth (ft.)	Sample End Depth (ft.)	Penetration / Recovery	Blows/6"	"N" Value	MATERIAL DESCRIPTION	General Stratum Descrip.	Field Testing	
								PID (ppm)	Other
7	12	14	24	3	4	similar wet soil		0	
				2					
				2					
				2					
8	14	16	24	1	WH	similar soil (wet, very loose)		0	
				WH					
				WH					
				WH					
9	16	18	24	WH	WH	Grey brown / silt little organic matter, little cmf sand (wet, very soft)		0	
				WH					
				WH					
				WH					
10	18	20		WH		Grey brown / clay little organic matter, little silt moist very soft		0	
				WH					
				1					
				1					

NOTES: _____

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RAMBOLL

SOIL BORING LOG

BORING ID: EB5
INSPECTOR: Veronica D

PROJECT: Genesse River
CLIENT: NYS REDI
JOB #: 16900
SITE NAME: Genesse River East
SITE LOC.: Rochester NY
BORING LOC.: EB5
DATE STARTED: 11/5/2020
DATE COMPLETED: 11/5/2020
FINAL STATIC WL: 14.5'

DRILLING CONT.: CME
FOREMAN: BEAU Fletcher
RIG TYPE: CME 550X
PURPOSE:
DRILLING METHOD: HSASS
HAMMER / FALL: Auto / 30"
SAMPLER TYPE: split spoon
SAMPLER DIAMETER: 2"
NORTHING: -
EASTING: -
ELEVATION: -
DATUM: -

Sample No.	Sample Start Depth (ft.)	Sample End Depth (ft.)	Penetration / Recovery	Blows/6"	"N" Value	MATERIAL DESCRIPTION	General Stratum Descrip.	Field Testing PID (ppm)	
1	1	2	1.5			cmf gravel (ziploc bag)			
2	1.5	3	13	2 2 2	4	(Possible Fill) brown/silt little cmf sand trace cmf gravel (wet med stiff)	0		
3	3	4.5	14	4 2 3	5	Fill grey/mf sand trace silt wet, loose)	0		
4	4.5	6	13	4 2 2		fill grey sand silt (wet)	0		
5	6	8	14	WH WH WH WH		Possible fill grey/mf sand some silt trace organic matter (wet very loose)	0		
6	8	10	12	WH WH WH WH		Grey/brown/cmf sand trace silt wet/very loose	0		

NOTES:

RAMBOLL

SOIL BORING LOG

BORING ID: EBS

INSPECTOR: Veronica D

Sample No.	Sample Start Depth (ft.)	Sample End Depth (ft.)	Penetration / Recovery	Blows/6"	"N" Value	MATERIAL DESCRIPTION	General Stratum Descrip.	Field Testing	
								PID (ppm)	Other
7	10	12	17	WH WH 2 2 3	5	grey cmf sand some silt some organic matter (wet, very loose)		0	
8	12	14	16	5 20 10 4	30	grey cmf sand trace silt trace cmf (gravel, trace organic matter wet compact)		0	
9	14	16	12	4 2 2 2	4	grey/silt some sand trace organic matter (saturated med stiff)		0	
10	16	18	14	1 0 1 2	3	grey/silt and cmf sand trace organic matter (saturated soil)		0	
11	18	20	3	2 1 2 1	3	grey cmf gravel, little silt trace mf sand saturated very loose)		0	

NOTES:

RAMBOLL

SOIL BORING LOG

BORING ID: EB6
INSPECTOR: Veronica Davis

PROJECT: Genesee River
SITE NAME: Genesee River East
DATE STARTED: 11/5/2020
CLIENT: NYS REDI
SITE LOC.: Rochester NY
DATE COMPLETED: 11/5/2020
JOB #: 1690005
BORING LOC.: EB6
FINAL STATIC WL: 12.9'

DRILLING CONT.: CME
DRILLING METHOD: HSASS
NORTHING: -
FOREMAN: Beau Fletcher
HAMMER / FALL: Auto / 30"
EASTING: -
RIG TYPE: CME 550x
SAMPLER TYPE: split spoon
ELEVATION: -
PURPOSE:
SAMPLER DIAMETER: 2"
DATUM: -

Sample No.	Sample Start Depth (ft.)	Sample End Depth (ft.)	Penetration / Recovery	Blows/6"	"N" Value	MATERIAL DESCRIPTION	General Stratum Descrip.	Field Testing PID (ppm)	
1	0	0.5	15	3	14	organic matter moist		0.1	
				8					
	0.5	2		6		(Fill) brown grey cmf gravel silt		0.1	
				3		cmf sand (moist)			
2	2	4	15	34	26	(Fill) grey brown/ cmf gravel		0.2	
				H		silt cmf sand (moist)			
				9					
				6					
3	4	6	H	7		Fill, brown, grey (cmf gravel		0.0	
				4		silt cmf sand (mast)			
				4					
				3					
4	6	8	14	5	11	Fill, brown grey / cmf sand		0	
				5		Wood			
				6					
				7					
5	8	10	12	8	8	tan grey / wood, cmf sand		0	
				3		(wet)			
				5					
				7					
6	10	12	20	4	7	Grey brown / cmf sand little		0	
				3		organic matter (wet loose)			
				4					
				5					

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RAMBOLL

SOIL BORING LOG

BORING ID: EB6

INSPECTOR: Veronica D.

Sample No.	Sample Start Depth (ft.)	Sample End Depth (ft.)	Penetration / Recovery	Blows/6"	"N" Value	MATERIAL DESCRIPTION	General Stratum Descrip.	Field Testing	
								PID (ppm)	Other
7	12	14	12	9	17	grey red / cmf sand trace cmf gravel trace organic material (wet md compact)		0	
				8					
				9					
				7					
8	14	16	18	3	10	grey / red cmf sand (wet md compact)		0	
				5					
				5					
				4					
9	18	20	17	3	3	grey brown / cmf sand trace organic matter (wet very loose)		0	
				1					
				2					
				2					

NOTES:

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APPENDIX C
HEALTH AND SAFETY PLAN (HASP)

RAMBOLL

ENVIRONMENT
& HEALTH

HEALTH & SAFETY PLAN - DRAFT
[REPORT SUBTITLE]

Project name	NYS REDI Grants – Site Management Plan
Project no.	1940100197
Recipient	Ms. Jane Forbes – City of Rochester Division of Environmental Quality
Document type	Health & Safety Plan (DRAFT)
Version	DRAFT
Date	January 20, 2021
Prepared by	[Name]
Checked by	[Name]
Approved by	[Name]

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1.	Introduction	2
2.	Site History/Overview	2
3.	Planned Activities Covered by HASP	2
4.	Job Hazard Analysis	2
4.1	Chemical Hazards	2
4.2	Physical Hazards	2
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5.	Site Controls	3
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6.1.1	Level A (High)	4
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1. Introduction

This Health and Safety Plan (HASP) outlines the policies and procedures to protect workers and the public from potential environmental hazards posed during site activities that may encounter and/or disturb soil relating to the construction relating to the City of Rochester project sites: for an approximately 975-foot stretch of Genesee River shoreline at the end of St. Paul Boulevard (East) and MO-07 West Side Genesee River Businesses (generally from Train Station heading north) and MO-10 City of Rochester Marina extending south from the Train Station to the north boundary of Gibbs Marina (West).

2. Site History/Overview

In 2017 and 2019, the Lake Ontario and the St. Lawrence River System experienced high-water levels that resulted in severe flooding and erosion throughout the region. These conditions have caused adverse effects on property, infrastructure, business, and public safety. Given changes to the climatic baseline, New York State recognizes that moving forward requires planning for and responding to a potential new normal set of climate circumstances. For the Lake Ontario Region, learning how to adapt to and plan for a warmer, wetter, and more dynamic regional climate is emerging as a reality. By focusing on proactive resiliency planning that is informed by useful climate information and local input, the Lake Ontario Region has an opportunity to promote shoreline resiliency that allows communities and stakeholders to adapt to climate-related challenges.

3. Planned Activities Covered by HASP

This HASP is to be implemented during site construction activities.
Contractors will be responsible for preparing and implementing their own Health and Safety Plan while work is to be performed on site.

4. Job Hazard Analysis

This HASP discusses some of the anticipated environmental hazards for this Site that are specifically associated with the management of impacted soil, fill material, and groundwater during future redevelopment and construction-related activities.

4.1 Chemical Hazards

Chemical substances can enter the unprotected body by inhalation, skin absorption, ingestion, or through a puncture wound (injection). A contaminant can cause damage to the point of contact or can act systemically, causing a toxic effect at a part of the body distant from the point of initial contact.

During project activities that involve the removal and/or disturbance of petroleum-impacted soil, fill material, or groundwater, the worker’s breathing zone must be monitored for VOCs using a photoionization detector (PID) and/or for dusts and particulates using a real-time aerosol monitor (RTAM).

4.2 Physical Hazards

There are physical hazards associated with this project, which might compound the chemical hazards. Hazard identification, training, adherence to the redevelopment or work plans, and careful housekeeping

can prevent many problems or accidents arising from physical hazards. Potential physical hazards associated with this project include:

- Slip/Trip/Fall Hazards: Some areas may have wet surfaces that will increase the possibility of inadvertent slips. Use caution when using steps and stairs due to slippery surfaces in conjunction with the fall hazard. Good housekeeping practices should also be used to minimize trip hazards.

- Noise: Work around large equipment often creates excessive noise. The effects of noise can include:
  - Workers being startled, annoyed, or distracted.
  - Physical damage to the ear resulting in pain, or temporary and/or permanent hearing loss.
  - Communication interference that may increase potential hazards due to the inability to warn of danger and proper safety precautions to be taken.

- Heavy Equipment: heavy equipment should be inspected daily to ensure safety equipment and devices are operational and ready for immediate use.

- Subsurface and Overhead Hazards: Before any excavation activity, efforts will be made to determine whether underground utilities and potential overhead hazards will be encountered. Underground utility clearance must be obtained prior to subsurface work.

4.3 Environmental Hazards

Environmental factors such as weather, wild animals, insects, and irritant plants can pose a hazard when performing outdoor tasks. Reasonable efforts will be made to alleviate these hazards should they arise.

- Heat Stress
  - Heat rash
  - Heat cramps
  - Heat exhaustion
  - Heat Stroke
- Exposure to Cold

5. Site Controls

To prevent migration of petroleum-related constituents caused through tracking by personnel or equipment, work areas, and PPE staging/decontamination areas will be clearly specified prior to beginning operations. The following items will be requirements to protect the health and safety of workers during implementation of project activities that disturb petroleum-impacted soil, fill material, and groundwater.

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand to mouth transfer and ingestion of contaminants shall not occur in the work area during disturbance of potentially impacted soil, or fill material and/or groundwater.
- Personnel admitted in the work area shall be properly trained in health and safety techniques and equipment usage.
- No personnel shall be admitted in the work area without the proper safety equipment.
- Proper decontamination procedures shall be followed before leaving the Site.

6. Protective Equipment

This section addresses the various levels of personal protective equipment (PPE) that are or may be

required at this job site. Personnel entering the work area shall be trained in the use of the anticipated PPE to be utilized.

The selected PPE should be able to resist degradation, penetration, and permeation by the contaminants present at the site. In selecting the appropriate protective material, the following should be considered: chemical resistance; tear and puncture resistance; flexibility; thermal stress; cleanability; and durability. PPE will be selected, used and maintained in accordance with applicable regulations.

6.1 Levels of PPE

The four levels of PPE are Levels A, B, C, and D, with Level A providing the highest available level of respiratory, skin, and eye protection. A summary of the basic PPE ensemble for Levels A, B, C, and D is provided below. PPE selection for operations at the site will be tailored to address specific task conditions.

6.1.1 Level A (High)

Level A PPE provides the maximum degree of respiratory, skin, and eye protection. A Level A PPE ensemble should include:

- Full-face piece self-contained breathing apparatus (SCBA) or full-face piece supplied air respirator with escape SCBA;
- Fully encapsulating, chemical-resistant suit, safety boots and inner gloves; and
- Hard hat (if overhead or bump hazards exist).

6.1.2 Level B (High)

Level B PPE provides the maximum level of respiratory protection. Since chemical-resistant clothing is not considered gas, vapor, or particulate tight, Level B PPE does not provide the maximum skin protection. However, a good quality, hooded, chemical-resistant one-piece garment with taped wrists and ankles provides a reasonable degree of protection against splashes of liquids and lower concentrations of chemicals in ambient air. It is the minimum level recommended for confined space entries and initial site entries until the hazards have been further identified. Level B PPE should be used when any one of the following criteria is met:

- The type and atmospheric concentration of substances have been identified and require a high level of respiratory protection but less skin protection--this includes atmospheres with IDLH concentrations of specific substances that do not represent a severe skin hazard or atmospheres that do not meet the criteria for use of air-purifying respirators;
- Atmosphere contains less than 19.5% oxygen; or
- Presence of incompletely identified vapors or gases is indicated by air monitoring instruments but vapors and gases are not suspected of containing high levels of chemicals harmful to skin or capable of being absorbed through the intact skin.

6.1.3 Level C (High)

Level C PPE provides the same level of skin protection as Level B PPE, but a lower level of respiratory protection. Air-purifying respirators can be used only if the substance has adequate warning properties; the individual passes a qualitative fit-test for the mask; an appropriate cartridge/canister is used, and its service limit concentration is not exceeded; and site operations are not likely to generate unknown compounds or excessive concentrations of already identified substances. Level C PPE can be used when all the following conditions are met:

- Oxygen concentrations are not less than 19.5%;

- Atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect any exposed skin;
- Types of air contaminants have been identified, concentrations measured, and a cartridge or canister is available that can remove the contaminant;
- Atmospheric contaminant concentrations do not exceed IDLH levels; and
- Job functions do not require self-contained breathing apparatus (SCBAs).

6.1.4 Modified Level D (Medium)

Modified Level D PPE provides minimal skin protection (i.e., hand/glove protection along with standard work clothes with optional coveralls) and no respiratory protection. Modified Level D PPE can be used when the following conditions are met:

- Atmosphere contains no known hazard;
- Oxygen concentrations are not less than 19.5%;
- Work functions include minimal contact with contaminated soil, water, groundwater and precludes splashes, immersion, or the potential for unexpected inhalation of or contact with hazardous levels of any chemicals.

6.1.5 Level D (Low)

Level D PPE provides no skin protection other than standard work clothes and no respiratory protection. Work functions are limited non-hazardous environments and preclude contact with media that may be potentially contaminated at hazardous levels for any type of chemical.

6.1.6 Respiratory Protection

Any respirator used will meet the requirements of OSHA 29 CFR 1910.134. Both the respirator and cartridges specified shall be fit-tested prior to use. Air purifying respirators shall not be worn if contaminant levels exceed designated use concentrations.

No personnel who have facial hair, which interferes with the respirator's sealing surface, will be permitted to wear a respirator and will not be permitted to work in areas requiring respirator use. Only workers who have been certified by a physician as being physically capable of respirator usage shall be issued a respirator. Personnel unable to pass a respiratory fit test or without medical clearance for respirator use will not be permitted to enter or work in areas on-site that require respirator protection.

7. Decontamination Procedures

7.1 Personnel

As deemed necessary by the project manager, personnel involved with activities that involve disturbing petroleum-impacted soil, fill material, or groundwater will follow the decontamination procedures described herein to ensure that materials which workers may have contacted in the work zone and/or transition zone do not result in personal exposure and are not spread to clean areas of the Site.

7.2 Equipment

If equipment becomes contaminated, it shall be decontaminated before leaving the Site. Decontamination procedures can vary depending upon the contaminant involved, but may include sweeping, wiping, scraping, hosing, or steam cleaning the exterior of the equipment. Personnel performing this task will wear the proper PPE.

7.3 Disposal

Disposable clothing will be treated as contaminated waste or solid waste and be disposed of in accordance with applicable regulations. Liquids (e.g., decontamination water, etc.), if generated by project activities, will be disposed of in accordance with applicable regulations.

8. Air Monitoring

During activities that disturb petroleum-impacted soil, fill material, or groundwater, air monitoring will be conducted in order to determine airborne particulate and potential contaminant levels. This ensures that respiratory protection is adequate to protect personnel against the contaminants, and that contaminants are not migrating off-site. Additional air monitoring may be conducted at the discretion of the project manager.

9. Emergency Response

The following telephone numbers/addresses are listed in case there is an emergency at the Site. Should residual contamination be encountered during site activities, the NYSDEC Spills Unit shall be notified within 48-hours.

EMERGENCY RESPONSE			
(911 Service is Available ☒ Yes ☐ No			
Emergency Medical Treatment - Hospital Name: Hospital Address:	Rochester General Hospital 1425 Portland Ave, 14621	Number:	911 585-922-4000
Fire Department Name	St. Paul Boulevard Fire Department	Number:	585-266-4645
NYSDEC Spill Prevention and Response	NYSDEC	Number	585-226-5428

APPENDIX E – ENGINEERING DRAWINGS

73070 REDI - GRANTS

EAST SIDE OF GENESEE RIVER - MO.03 & MO.09

400 ANDREWS STREET ROCHESTER, NY 14604

TION MAP
'O SCALE

TOWN OF ROCHESTER

EAST SIDE OF GENESEE RIVER
ROCHESTER, NEW YORK

JANUARY 2021

O'BRIEN & GERE ENGINEERS, INC.
A RAMBOLL COMPANY

INDEX TO DRAWINGS

	TITLE SHEET
CIVIL	
G-001	GENERAL NOTES, ABBREVIATIONS & LEGEND
C-100	OVERALL SITE PLAN
C-101	SITE PLAN
C-102	SITE PLAN
C-103	SITE PLAN
C-501	MISCELLANEOUS DETAILS
C-502	MISCELLANEOUS DETAILS

GENERAL NOTES:

1. VERIFY DIMENSIONS PERTINENT TO THE WORK OF THIS CONTRACT IN THE FIELD. PROPOSED GRADES AND ELEVATIONS SHOWN ARE SUBGRADE ELEVATIONS WHERE NOTED AND FINISHED ELEVATIONS. IF DISCREPANCIES ARE FOUND BETWEEN THE PLANS AND PHYSICAL CONDITIONS OF THE SITE, NOTIFY THE ENGINEER.
2. THESE DRAWINGS SHOW EXISTING AND PROPOSED CONTOURS AT A 1-FT INTERVAL.
3. PROPOSED WORK IS SHOWN IN BOLD TEXT AND LINES.
4. MAINTAIN EXISTING DRAINAGE FACILITIES AND CHANNELS DURING PERFORMANCE OF WORK TO BE FREE OF DEBRIS AND FOREIGN MATTER AND OPERATIONAL. PROPER EROSION CONTROL TECHNIQUES (INCLUDING SILT FENCES AND STONE CHECK DAMS) SHALL BE IMPLEMENTED AS REQUIRED AND IN ACCORDANCE WITH THE SWPPP.
5. EXCAVATE AND STAGE EXCESS MATERIALS RELATED TO THE CONSTRUCTION IN ACCORDANCE WITH TECHNICAL SPECIFICATION.
6. RESTORE DISTURBED AREAS IN ACCORDANCE WITH TECHNICAL SPECIFICATION 31 22 19 TOPSOIL SEEDING AND PLANTING.
7. CLEAN FILL BROUGHT ONTO THE SITE SHALL MEET NYS PART 375 UNRESTRICTED SOIL CLEAN UP OBJECTIVES, OR AS APPROVED BY NYSDEC.
8. WORK SHALL BE PERFORMED IN SUBSTANTIVE COMPLIANCE WITH NYSDEC SPDES GP-0-20-001, SECTION 401 AND 404 OF THE CLEAN WATER ACT AND PURSUANT TO THE PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP) SUCH THAT PROJECT ACTIVITIES DO NOT RESULT IN SIGNIFICANT IMPACTS TO WATER QUALITY.
9. TURBIDITY CURTAINS SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN LAKE WATER LIMITS.
10. ANY FISH ENTRAPPED WITHIN THE TURBIDITY CURTAINS WILL BE RETURNED TO THE LAKE UPON DISCOVERY.
11. CONCRETE FORMS MUST BE INSTALLED AND SECURED IN A MANNER THAT POSITION AND GEOMETRY WILL BE MAINTAINED. INSPECTIONS WILL BE PERFORMED TO MONITOR THAT FORMS DO NOT DISCHARGE CONCRETE INTO THE WATERBODY.

TOPOGRAPHIC SURVEY AND MAPPING:

1. SURVEY INFORMATION SHOWN ON THE CONTRACT DRAWINGS IS REFERENCED HORIZONTALLY TO THE NORTH AMERICAN DATUM OF 1983 (NAD83) AND PROJECTED TO THE STATE PLANE COORDINATE SYSTEM (WESTERN ZONE) AND REFERENCED VERTICALLY TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). HORIZONTAL COORDINATES ARE REFERENCED TO THE GRID COORDINATE SYSTEM.
2. TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THE CONTRACT DRAWINGS IS FROM THE FOLLOWING SOURCES:

   POPLI DESIGN GROUP, DATED DECEMBER 2020

   a. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OR UP TO DATE TITLE REPORT AND IS THEREFORE SUBJECT TO ANY EASEMENTS, RESTRICTIONS, COVENANTS OR ANY STATEMENT OF FACTS THAT SUCH DOCUMENTS MAY DISCLOSE.

   b. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM DATA OBTAINED BY FIELD SURVEY, PREVIOUS MAPS AND RECORDS, (AND PAROLE TESTIMONY). THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHER UNDERGROUND UTILITIES, THE EXISTENCE OF WHICH ARE NOT KNOWN TO THE UNDERSIGNED, SIZE AND LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES MUST BE VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO ANY CONSTRUCTION.

GENERAL UTILITY:

1. EXACT DIMENSIONS AND LOCATIONS OF STRUCTURES AND UTILITIES ARE CONSIDERED APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD. IN ADDITION, OTHER UNDERGROUND PIPES, UTILITIES OR STRUCTURES NOT SHOWN ON THE DRAWINGS MAY EXIST.
2. CONTACT DIG SAFELY NEW YORK AND THE OWNER PRIOR TO INITIATION OF CONSTRUCTION ACTIVITIES. PROVIDE AT LEAST 72 HOURS (3 BUSINESS DAYS) NOTIFICATION.
3. COORDINATE WORK AFFECTING EXISTING UTILITIES WITH THE RESPECTIVE UTILITY COMPANY OWNER. DETAILS OF CONSTRUCTION AND/OR RELOCATION SHALL BE APPROVED BY THE UTILITY OWNERS AND OTHER APPROVING AGENCIES, IF REQUIRED.
4. PIPE ELEVATIONS GIVEN ARE INVERT ELEVATIONS, UNLESS SPECIFIED OTHERWISE.
5. ALL EXISTING DRAINAGE INLETS, MANHOLES, ELECTRICAL MANHOLES, ETC., WITH FRAMES AND GRATES/LIDS TO REMAIN AND TO BE RESET TO FINISH GRADE ELEVATIONS.

NEW YORK STATE D.O.T. SPECIFICATIONS:

1. EXCEPT AS MODIFIED HEREIN, SECTIONS 200 THROUGH 700 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS, CONSTRUCTION AND MATERIALS ISSUED BY THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION, OFFICE OF ENGINEERING, INCLUDING ALL REVISIONS AND ADDENDA ISSUED BY NYSDOT PRIOR TO THE DATE THE NOTICE TO BIDDERS IS ADVERTISED, HEREINAFTER REFERRED TO AS THE NYSDOT STANDARD SPECIFICATIONS AND APPLICABLE STANDARD DETAILS, SHALL GOVERN THE WORK TO BE DONE WHERE REFERRED TO ON THE PLANS AND IN THE SPECIFICATIONS. IF A CONFLICT EXISTS BETWEEN THE NYSDOT STANDARD SPECIFICATIONS AND THESE CONTRACT DOCUMENTS, THE CONTRACT DOCUMENTS SHALL GOVERN.
2. ANY REFERENCE TO NYSDOT STANDARD SPECIFICATIONS IS LIMITED IN SCOPE TO TECHNICAL ENGINEERING AND CONSTRUCTION WORK; MATERIALS, DETAILS, PROCEDURES, ETC. ALL REFERENCES TO THE STATE OR THE NYSDOT OR ADMINISTRATIVE OFFICERS OR EMPLOYEES THEREOF ARE NULL AND VOID WITH RESPECT TO LEGAL OR CONTRACTUAL RESPONSIBILITIES.
3. FOR CLARIFICATION, WHERE THE STATE OF NEW YORK OR THE NYSDOT OR ADMINISTRATIVE OFFICERS OR EMPLOYEES THEREOF ARE NAMED IN THE STANDARD SPECIFICATIONS, SUCH REFERENCES SHALL BE TAKEN TO MEAN EITHER THE ENGINEER OR OWNER AS DEFINED BY THE CONTRACT, EACH WITH SEPARATE AND DISTINCT RESPONSIBILITIES DESCRIBED OR REASONABLY IMPLIED BY THE CONTRACT.
4. THE CONTRACTOR IS ADVISED THAT THE METHOD OF MEASUREMENT AND BASIS OF PAYMENT FOR INDIVIDUAL NYSDOT ITEM NUMBERS DOES NOT NECESSARILY REFLECT THE OWNER'S METHOD OF MEASUREMENTS AND/OR BASIS OF PAYMENT.

STORM SEWER NOTES:

1. THE CONTRACTOR SHALL FURNISH ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS TO CONSTRUCT ALL STORM SEWERS, MANHOLES, CATCH BASINS (VARIOUS TYPES) AND NECESSARY APPURTENANT WORK AS DEPICTED ON THE PLANS, WITHIN THE TECHNICAL SPECIFICATIONS AND SPECIFIED HEREIN. NO SEWERS SHALL BE ACCEPTED UNTIL SEWERS HAVE PASSED THE SYSTEM ACCEPTANCE TESTS AND SATISFACTORY VISUAL INSPECTION BY THE TOWN.
2. ALL NEW STORM SEWER PIPE SHALL BE HDPE WATERTIGHT, SMOOTH INTERIOR CORRUGATED POLYETHYLENE DRAINAGE PIPE WITH MANNINGS "N" OF 0.012 OR LESS (HANCOR HI-Q, ADS N-12 OR APPROVED EQUAL).
3. IN THE EVENT CORRUGATED STEEL PIPE IS REQUIRED TO MAKE REPAIRS TO EXISTING PIPE OR CLOSURE SECTIONS THE PIPE SHALL BE BITUMINOUS COATED, FULLY PAVED WITH BITUMINOUS MATERIAL, CORRUGATED STEEL PIPE OR COATED STEEL PIPE OR APPROVED EQUAL, WITH EQUIVALENT MANNINGS "N" VALUE OF .012 OR LESS. GAUGES SHALL BE AS FOLLOWS UNLESS OTHERWISE SPECIFIED:

6" DIAMETER	16 GAUGE
10" DIAMETER	16 GAUGE
12" DIAMETER	16 GAUGE
15" DIAMETER	16 GAUGE
18" DIAMETER	16 GAUGE
24" DIAMETER	14 GAUGE
30" DIAMETER	14 GAUGE
36" DIAMETER	14 GAUGE

4. ALL STRUCTURES AND APPURTENANCES SHALL BE DESIGNED FOR H25 LOADINGS.
5. ALL EXISTING DRAINAGE FACILITIES TO REMAIN SHALL BE MAINTAINED FREE OF DEBRIS AND FOREIGN MATTER AND OPERATIONAL THROUGHOUT THE DURATION OF THE CONTRACT.
6. UPON COMPLETION OF THE CONTRACT WORK, ALL PROPOSED DRAINAGE SYSTEMS AND EXISTING DRAINAGE SYSTEMS TO REMAIN WITHIN THE LIMITS OF THIS CONTRACT SHALL BE CLEANED TO ATTAIN THEIR FULL FLOW CAPABILITIES AND SHALL BE ACCEPTED BY THE OWNER AS SUFFICIENTLY CLEANED.
7. THE LOCATION AND SIZE OF EXISTING DRAINAGE FACILITIES ARE FROM ACTUAL FIELD MEASUREMENTS, LIMITED FIELD RECONNAISSANCE OR PLANS OF RECORD. ALL FACILITIES WHICH ARE TO REMAIN OR BE MODIFIED FOR REUSE UNDER THIS CONTRACT SHALL BE FIELD VERIFIED AS TO ACTUAL LOCATION, ELEVATIONS, SIZE, TYPE AND CONDITION. ANY DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THE PLANS SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE WHO SHALL DETERMINE IF MODIFICATION TO THE PLANS ARE REQUIRED.

SANITARY SEWER:

1. CONTRACTOR SHALL NOT DIRECT SURFACE OR SUBSURFACE WATER TO THE SANITARY SEWER SYSTEM.

EROSION CONTROL NOTES:

1. EROSION AND SEDIMENT CONTROL FACILITIES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL. SOIL EROSION AND SEDIMENT CONTROL FACILITIES SHALL BE CONSTRUCTED PRIOR TO SITE DISTURBANCE AND MAINTAINED BY THE CONTRACTOR DURING CONSTRUCTION. THESE FACILITIES SHALL BE REMOVED, THE AREA RE-GRADED, TOPSOILED AND SEEDED (WHERE NECESSARY OR APPLICABLE) UPON COMPLETION OF CONSTRUCTION, AND WHEN THE DRAINAGE AREA IS STABILIZED.
2. ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS SHALL BE PROTECTED TO PREVENT THE DEPOSITION OF MATERIALS ONTO TRAVERSED PUBLIC THOROUGHFARES EITHER BY INSTALLING AND MAINTAINING A STABILIZED CONSTRUCTION ENTRANCE OR BY WASHING ALL VEHICLE WHEELS IN A SAFE DISPOSAL AREA. ALL MATERIALS DEPOSITED ONTO PUBLIC THOROUGHFARES SHALL BE REMOVED IMMEDIATELY. PROPER PRECAUTIONS SHOULD BE TAKEN TO ENSURE THAT MATERIALS DEPOSITED ONTO PUBLIC THOROUGHFARES ARE REMOVED SO THAT THEY DO NOT ENTER DRAINAGE SYSTEMS. SWEEPING OF ROADS UTILIZED DURING CONSTRUCTION SHALL BE DONE ON A DAILY BASIS AT A MINIMUM OR AS ORDERED BY THE OWNER AT NO ADDITIONAL COST TO THE OWNER.
3. IT IS THE INTENT OF THIS CONTRACT TO STRIP THE SITE OF EXISTING TOPSOIL AND STOCKPILE ON-SITE FOR RE-USE. ONCE SITE IS GRADED TO FINAL GRADES SHOWN, CONTRACTOR TO TOPSOIL THE SITE WITH EXISTING TOPSOIL MATERIAL ONLY. UNDER THIS CONTRACT, THE CONTRACTOR IS NOT OBLIGATED TO PROVIDE OFF-SITE TOPSOIL. THE ENTIRE SITE IS TO BE HYDROSEEDED AND MULCHED AS REQUIRED.
4. SILT FENCES SHALL BE INSTALLED AT TOES OF SLOPES, AT EDGE OF CLEARING AND GRADING LIMITS, AND AT OTHER LOCATIONS NEEDED TO PREVENT AND CONTROL EROSION DURING CONSTRUCTION AS SHOWN OR DIRECTED BY THE OWNER'S REPRESENTATIVE.
5. 5. TEMPORARY EROSION CONTROL STRUCTURES SHALL BE CLEANED WHEN STRUCTURES REACH 50% OF ITS CAPACITY.
6. ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO PRECLUDE CONTAMINATION OF ANY WATERWAYS AND/OR POTENTIAL WETLANDS BY SUSPENDED SOLIDS, SEDIMENTS, FUELS, SOLVENTS, LUBRICANTS, EPOXY COATINGS, PAINTS, CONCRETE, LEACHATE, OR ANYOTHER ENVIRONMENTALLY DELETERIOUS MATERIALS ASSOCIATED WITH THE PROJECT WORK.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING DUST ON THE SITE AT ALL TIMES AND IN ACCORDANCE WITH THE SWPPP. A WATER TRUCK OR OTHER SUFFICIENT MEANS OF CONTROLLING DUST SHALL BE ON SITE AND IN WORKING ORDER AT ALL THE OWNER'S REPRESENTATIVE HAS AUTHORITY TO ORDER AND/OR DIRECT THE CONTRACTOR TO CONTROL DUST AT ANY TIME.
8. THE CONTRACTOR IS TO MAINTAIN THE CAPACITY OF THE SEDIMENT TRAP THROUGHOUT CONSTRUCTION, UNTIL THE SITE HAS BEEN STABILIZED.
9. EMBANKMENT SLOPES SUSCEPTIBLE TO EROSION SHALL BE STABILIZED BY THE CONTRACTOR AS NEEDED OR AS ORDERED BY OWNER OR OWNER'S REPRESENTATIVE.
10. AN ADEQUATE RESERVE OF EROSION CONTROL MATERIALS SHALL BE ON SITE AT ALL TIMES FOR EMERGENCY OR ROUTINE REPLACEMENT AND SHALL INCLUDE MATERIALS TO REPAIR SILT FENCES, MULCH AND OTHER DEVICES USED TO STABILIZE THE SITE.
11. THE AREAS OF CONSTRUCTION SHALL REMAIN IN STABLE CONDITION AT THE CLOSE OF EACH CONSTRUCTION DAY. EROSION CONTROL FACILITIES SHALL BE MONITORED AT THIS TIME, AND MAINTAINED, REPAIRED OR REPLACED BY THE CONTRACTOR IF NECESSARY.
12. EXISTING STORM INLETS ARE TO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION BY USE OF INLET PROTECTION.
13. ALL ADJACENT ROADWAYS SHALL BE KEPT CLEAN. FILL MATERIAL, CONSTRUCTION DEBRIS, OR CONSTRUCTION MATERIALS SHALL NOT BE STORED OR SPILLED ONTO THE ROADWAY.
14. 14. ON-SITE SOIL STOCKPILE AREAS SHOULD NOT BE LOCATED WITHIN 50 FEET OF A CATCH BASIN, OPEN CHANNEL, OR A STREAM. STOCKPILE AREAS TO BE SURROUNDED WITH SILT FENCE OR OTHER EROSION CONTROL MEASURES AS ORDERED BY THE OWNER OR OWNER'S REPRESENTATIVE.

CLIENT
CITY OF ROCHESTER

NO.	DATE	REVISION	INT.

DESIGNER / PROFESSIONAL ENGINEER RESPONSIBLE

DESIGNED BY
CHECKED BY RCG
DRAWN BY JRD
FILE NO. 1087699.00197
DATE 10/22/19

O'BRIEN & GERE ENGINEERS, INC.
A RAMBOLL COMPANY
RAMBOLL

PROJECT
REDI-GRANTS EAST SIDE OF GENESEE RIVER - MO-03 AND MO-09

ADDRESS
400 ANDREWS ST., ROCHESTER, NY 14604

MATCH LINE - SEE SHEET C-107

PLAN

1"=20'

20' 0 20'

NORTH

Y PERSON, ECTION OF A THIS DOCUMENT.

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR TO DETERMINE THE ACTUAL SIZE. DRAWING IS NOT SCALABLE IF NO SCALE BAR IS PRESENT.

PRELIMINARY NOT FOR CONSTRUCTION

DATE: 02/03/2021

HESTER

NO.	DATE	REVISION	INT.

DESIGNER / PROFESSIONAL ENGINEER RESPONSIBLE

DESIGNED BY

FILE NO. 1087699.00197

CHECKED BY RCG

DATE 10/22/19

DRAWN BY JRD

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

PROJECT

REDI-GRANTS EAST SIDE OF GENESEE RIVER - MO-03 AND MO-09

ADDRESS

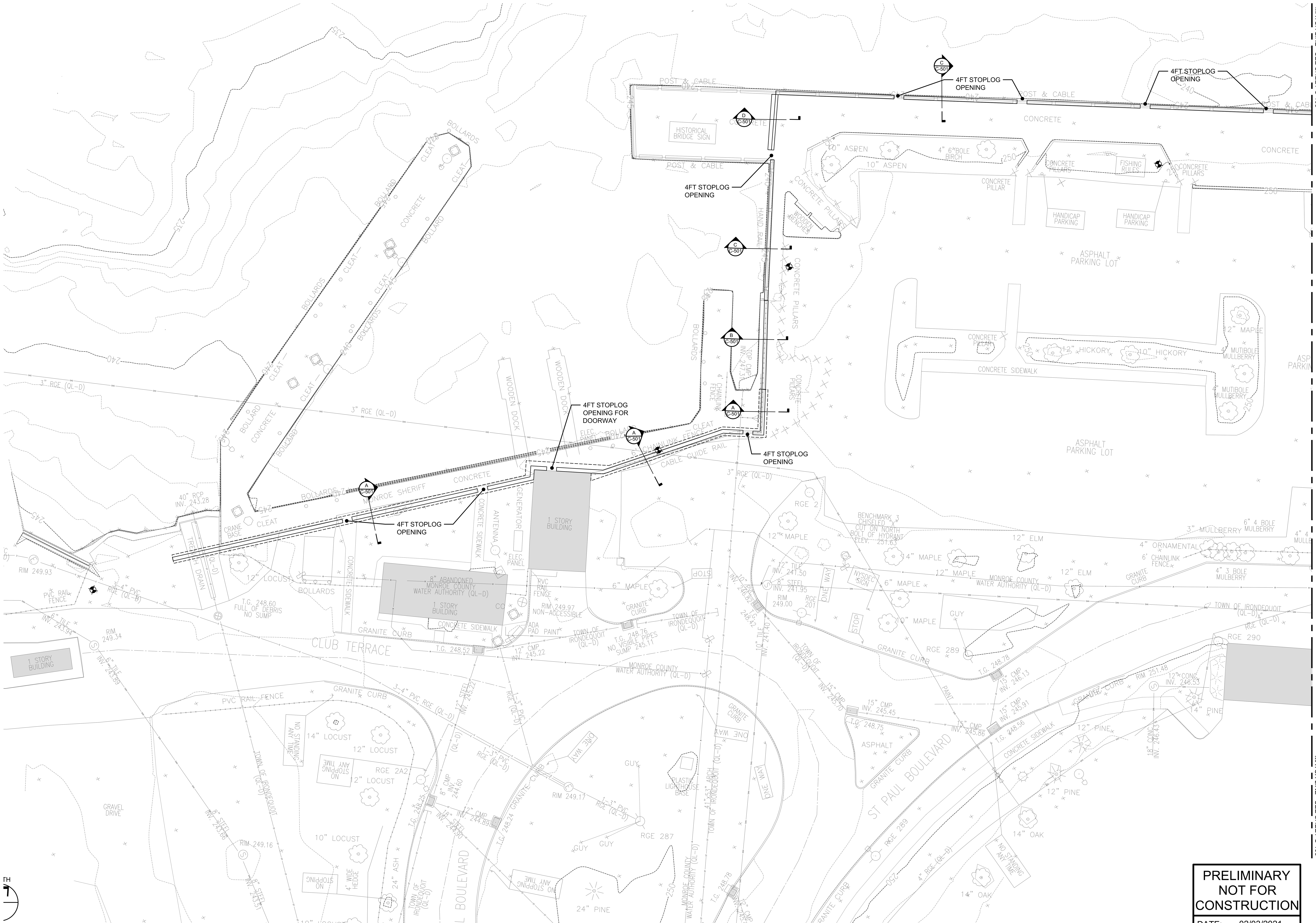
400 ANDREWS ST., ROCHESTER, NY 14604

SHEET DESCRIPTION

SITE PLAN

DRAWING LOCATION

C-101



PRELIMINARY NOT FOR CONSTRUCTION

DATE: 02/03/2021

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NO.	DATE	REVISION	INT.

DESIGNER / PROFESSIONAL ENGINEER RESPONSIBLE

DESIGNED BY: MAD
CHECKED BY: RCG
DRAWN BY: JRD
FILE NO.: 1087699.00197
DATE: 10/22/19

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

RAMBOLL

PROJECT: REDI-GRANTS EAST SIDE OF GENESEE RIVER - MO-03 AND MO-09

ADDRESS: 400 ANDREWS ST., ROCHESTER, NY 14604

SHEET DESCRIPTION: SITE PLAN

DRAWING LOCATION

C-102

PLAN

1"=20' 20' 0 20'

NORTH

PRELIMINARY
NOT FOR CONSTRUCTION
DATE: 02/03/2021

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HESTER

NO.	DATE	REVISION	INT.

DESIGNER / PROFESSIONAL ENGINEER RESPONSIBLE

DESIGNED BY MAD
CHECKED BY RCG
DRAWN BY JRD
FILE NO. 1087699.00197
DATE 10/22/19

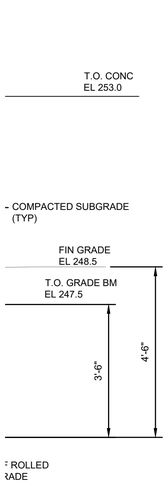
RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

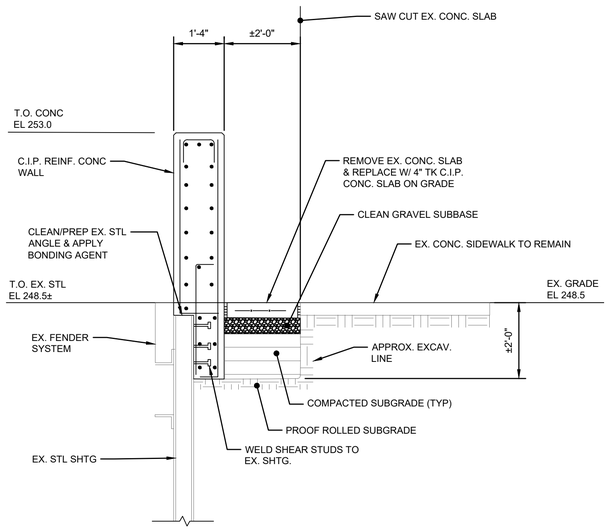
RAMBOLL

PROJECT
REDI-GRANTS EAST SIDE OF GENESEE RIVER - MO-03 AND MO-09
ADDRESS
400 ANDREWS ST., ROCHESTER, NY 14604

SHEET DESCRIPTION
SITE PLAN
DRAWING LOCATION

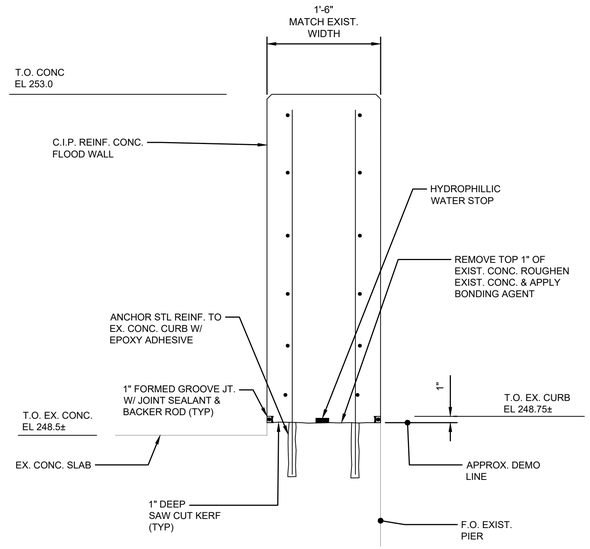
C-103





B FLOOD WALL DETAIL @ BOAT SLIP

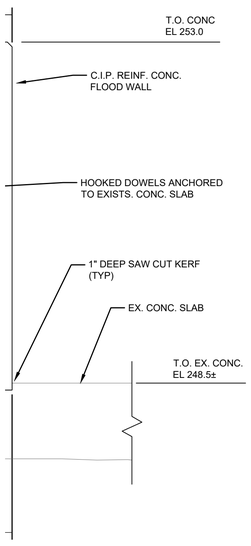
1/2" = 1'



C FLOOD WALL DETAIL @ NYS DEC FISHING PIER

1" = 1'

@ MONROE RINE HQ



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PRELIMINARY
NOT FOR
CONSTRUCTION
DATE: 02/03/2021

HESTER

NO.	DATE	REVISION	INT.

DESIGNER / PROFESSIONAL ENGINEER RESPONSIBLE

DESIGNED BY MAD
CHECKED BY RCG
DRAWN BY JRD
FILE NO. 1087699.00197
DATE 10/22/19

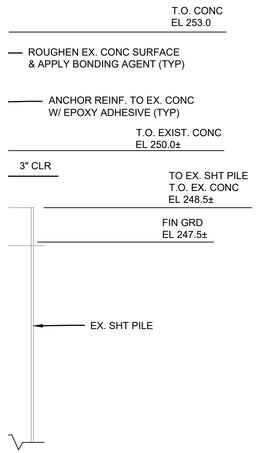
RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

RAMBOLL

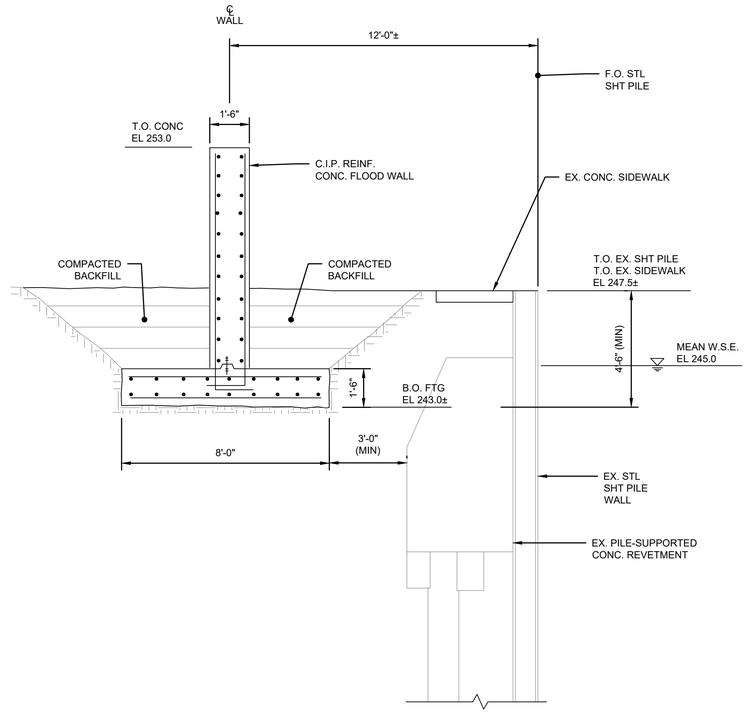
PROJECT
REDI-GRANTS EAST SIDE OF GENESEE RIVER - MO-03 AND MO-09
ADDRESS
400 ANDREWS ST., ROCHESTER, NY 14604

SHEET DESCRIPTION
MISCELLANEOUS DETAILS
DRAWING LOCATION

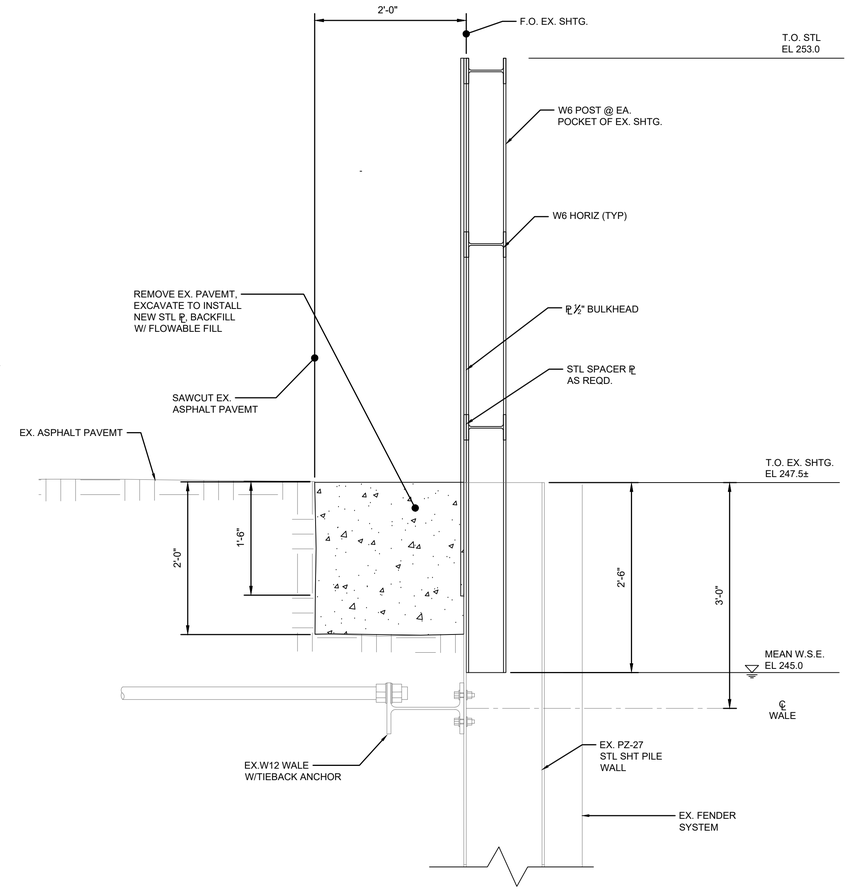
C-501



L RAISING
SCG DOCK



FLOOD WALL SECTION
@ USCG BOAT SLIP
F
NOT TO SCALE



FLOOD WALL SECTION
@ USCG BOAT SLIP END WALL
G
1" = 1'-0"

PRELIMINARY
NOT FOR
CONSTRUCTION
DATE: 02/03/2021

HESTER

NO.	DATE	REVISION	INT.

DESIGNER / PROFESSIONAL ENGINEER RESPONSIBLE

DESIGNED BY MAD
CHECKED BY RCG
DRAWN BY JRD
FILE NO. 1087699.00197
DATE 10/22/19

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

RAMBOLL

PROJECT
REDI-GRANTS EAST SIDE OF GENESEE RIVER - MO-03 AND MO-09
ADDRESS
400 ANDREWS ST., ROCHESTER, NY 14604

SHEET DESCRIPTION
MISCELLANEOUS DETAILS
DRAWING LOCATION

C-502

SAVED: 2/1/21 4:57 PM

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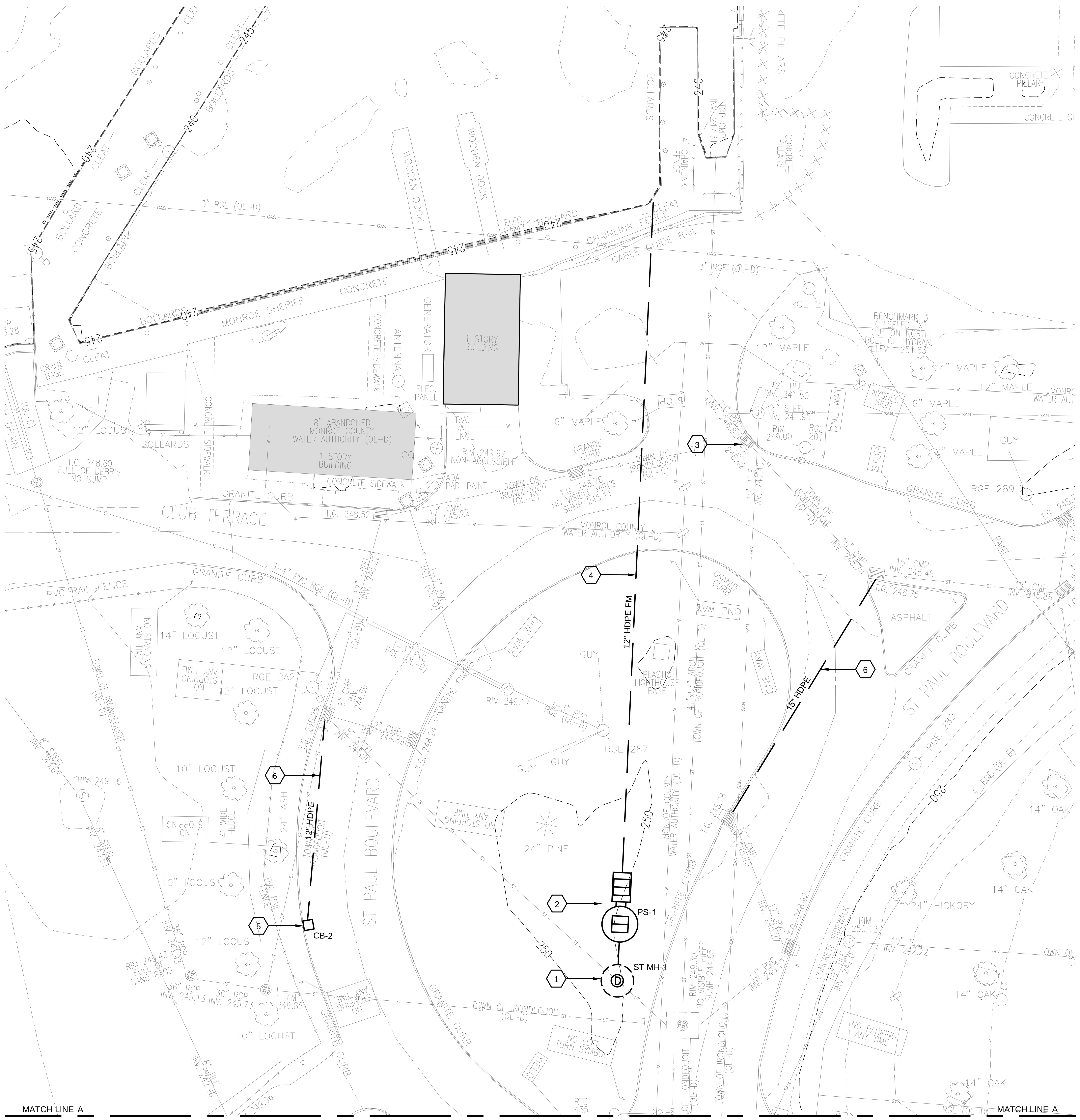

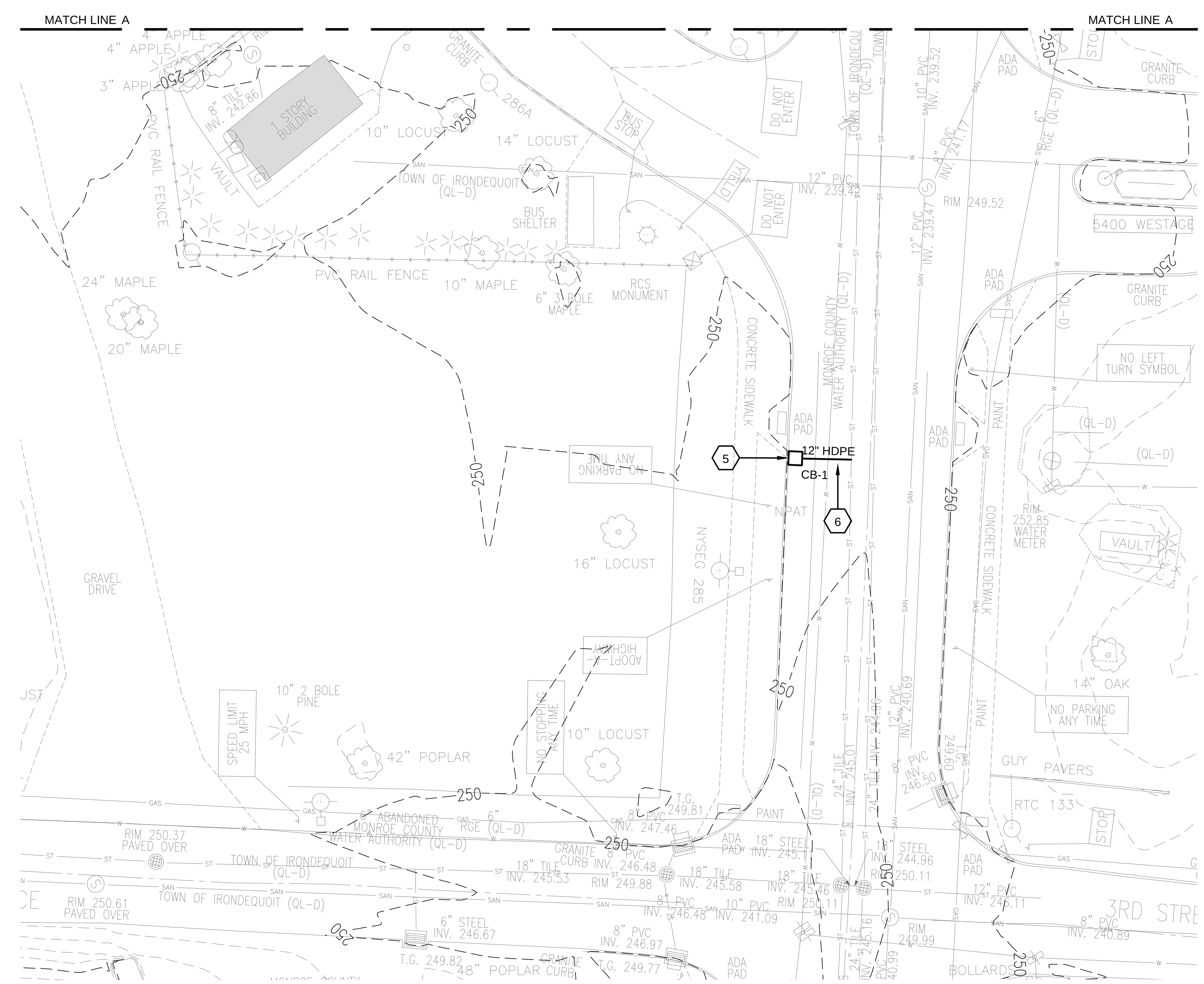

DRAWING NOTES ⓧ:

1. EXCAVATE TO REQUIRED DEPTH, CUT EXISTING STORM SEWER. PROVIDE 5'-0" I.D. PRECAST CONCRETE MANHOLE WITH C.I. FRAME AND COVER. RECONNECT EXISTING SEWER.
2. STORMWATER PUMP STATION PS-1: 10'-0" I.D. PRECAST CONCRETE WET WELL WITH DUPLEX SUBMERSIBLE PUMPS AND 5'-0" x 8'-0" PRECAST CONCRETE VALVE CHAMBER. EACH STRUCTURE TO BE FURNISHED WITH A 5'-0" x 5'-0" WATERTIGHT ANODIZED ALUMINUM DOUBLE-LEAF ACCESS HATCH.
3. PROVIDE TIDEFLEX CHECK VALVE AT 15" CMP NORTHEAST INVERT, INSTALLED INSIDE EXISTING CATCHBASIN.
4. STORMWATER FORCEMAIN DISCHARGE TO RIVER - PIPE SIZE AND TYPE AS INDICATED.
5. PRECAST CONCRETE CATCHBASIN WITH HEAVY DUTY FRAME AND GRATE.
6. STORM SEWER - PIPE SIZE AND TYPE AS INDICATED.

SITE UTILITY PLAN - STORMWATER PUMP STATION

1" = 20'-0"

20' 0 20'

NORTH

PRELIMINARY NOT FOR CONSTRUCTION

DATE: TBD

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR TO DETERMINE THE ACTUAL SIZE. DRAWING IS NOT SCALABLE IF NO SCALE BAR IS PRESENT.

CLIENT
CITY OF ROCHESTER

NO.	DATE	REVISION	INT.

DESIGNER / PROFESSIONAL ENGINEER RESPONSIBLE

DESIGNED BY KKS
CHECKED BY JMF
DRAWN BY KKS
FILE NO. 1087699.00197
DATE

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

RAMBOLL

POPLI DESIGN GROUP

PROJECT
REDI-GRANTS EAST SIDE OF GENESEE RIVER - MO-03 AND MO-09

ADDRESS
400 ANDREWS ST., ROCHESTER, NY 14604

SHEET DESCRIPTION
SITE UTILITY PLAN - STORMWATER PUMP STATIONS

DRAWING LOCATION

C-201

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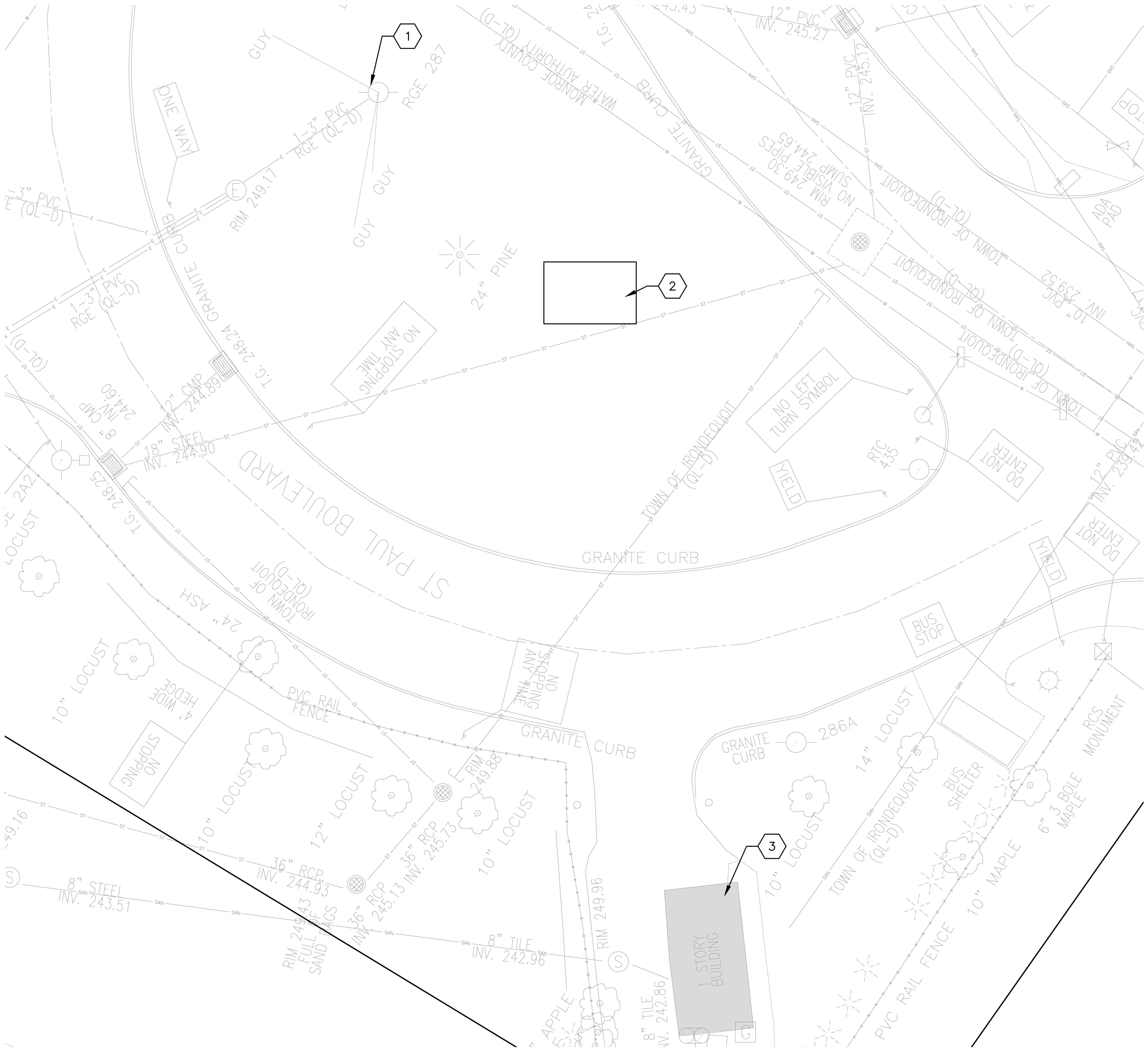

PROPOSED EAST SIDE PUMP STATION

N.T.S

20' 0 20'

NORTH

KEYNOTES: #

1. PLACE POLE MOUNTED TRANSFORMERS ON POLE RGE 287 TO FEED PUMPS LOCATED IN STORM PUMP STATION.
2. NEW STORM PUMP STATION.
3. EXISTING SANITARY PUMP STATION.

PRELIMINARY NOT FOR CONSTRUCTION

DATE: TBD

CLIENT
CITY OF ROCHESTER

NO.	DATE	REVISION	INT.

DESIGNER / PROFESSIONAL ENGINEER RESPONSIBLE

DESIGNED BY — FILE NO. 1087699.00197
CHECKED BY — DATE
DRAWN BY

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

RAMBOLL

PDG POPLI DESIGN GROUP

PROJECT
REDI-GRANTS EAST SIDE OF GENESEE RIVER - MO-03 AND MO-09

ADDRESS
400 ANDREWS ST., ROCHESTER, NY 14604

SHEET DESCRIPTION
ELECTRICAL PLANS - PROPOSED EAST SIDE PUMP STATION

DRAWING LOCATION

E-100

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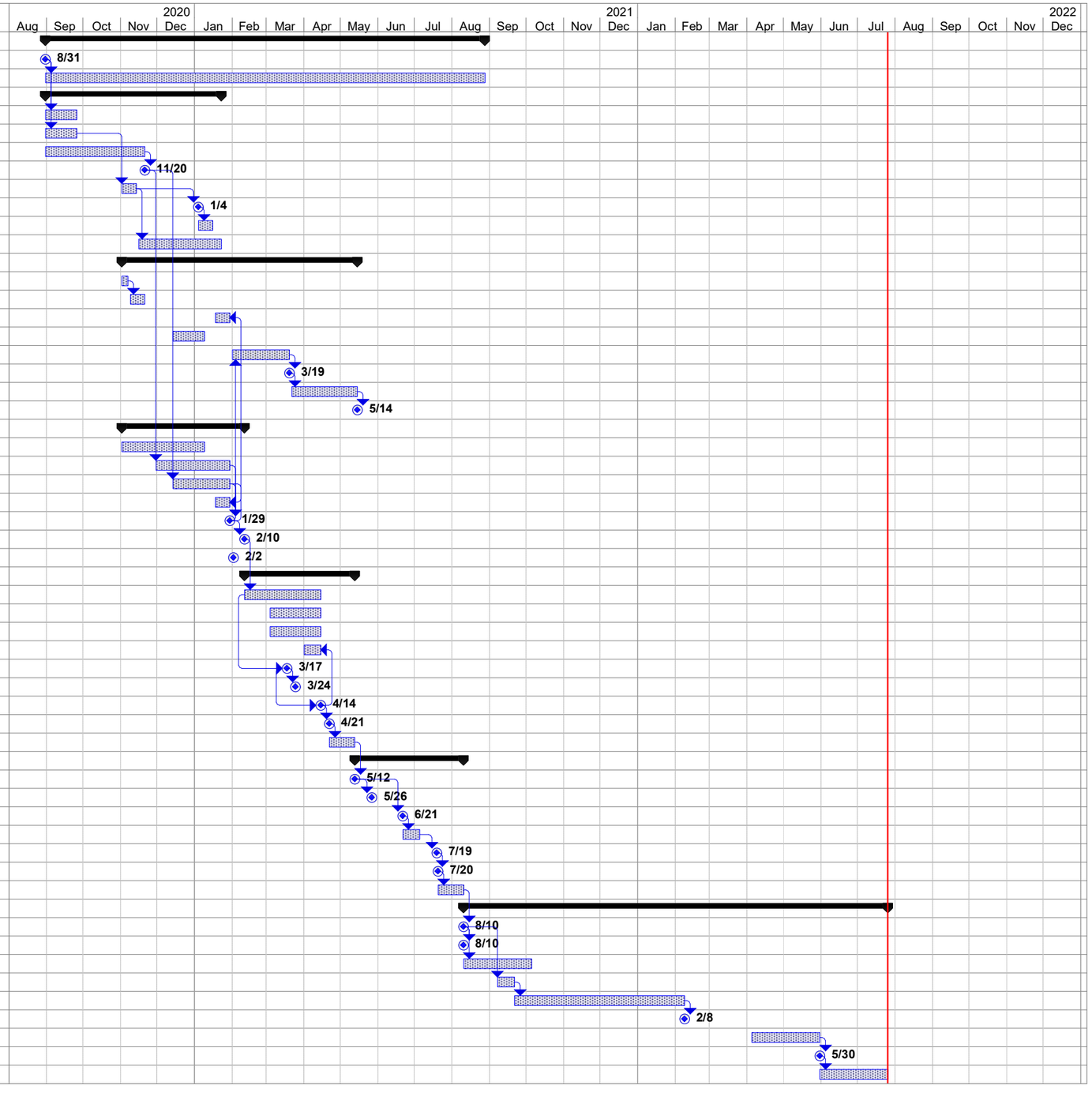
APPENDIX F – PROJECT SCHEDULE

PROJECT SCHEDULE
REDI SHORELINE RESILIENCY IMPROVEMENTS MO-03 and MO-09
CITY OF ROCHESTER, NEW YORK

ID	Task Name	Duration	Start	Finish	Predecessors
1	**A. Program Management**	**260 days**	**Mon 8/31/20**	**Fri 8/27/21**	
2	Engineering Agreements executed	0 days	Mon 8/31/20	Mon 8/31/20	
3	Conduct program management activities	52 wks	Mon 8/31/20	Fri 8/27/21	2
4	**B. Preliminary Investigations**	**105 days**	**Mon 8/31/20**	**Fri 1/22/21**	
5	Request/obtain existing mapping from City	4 wks	Mon 8/31/20	Fri 9/25/20	2
6	Prepare subcontract agreements	4 wks	Mon 8/31/20	Fri 9/25/20	2
7	Conduct topographic/bathymetric surveys	12 wks	Mon 8/31/20	Fri 11/20/20	
8	Receive survey mapping	0 days	Fri 11/20/20	Fri 11/20/20	7
9	Perform geotechnical soil borings	2 wks	Mon 11/2/20	Fri 11/13/20	6
10	Receive soil boring logs	0 days	Mon 1/4/21	Mon 1/4/21	9FS+2 wks
11	Perform geotechnical laboratory analyses	2 wks	Mon 1/4/21	Fri 1/15/21	10
12	Prepare geotechnical analysis and evalulation (technical memorandum)	10 wks	Mon 11/16/20	Fri 1/22/21	9
13	**C. Permitting and Flood Plain Evaluations**	**140 days**	**Mon 11/2/20**	**Fri 5/14/21**	
14	Conduct wetlands and aquatic resource delineation	1 wk	Mon 11/2/20	Fri 11/6/20	
15	Prepare delineation report	2 wks	Mon 11/9/20	Fri 11/20/20	14
16	Confirm permit requirements	2 wks	Mon 1/18/21	Fri 1/29/21	27FF
17	Perform floodplain modeling	4 wks	Mon 12/14/20	Fri 1/8/21	
18	Prepare Joint Application for Permit (x2)	7 wks	Mon 2/1/21	Fri 3/19/21	27
19	Submit Joint Application for Permit (x2)	0 days	Fri 3/19/21	Fri 3/19/21	18
20	Regulatory agencies review	8 wks	Mon 3/22/21	Fri 5/14/21	19
21	Obtain permits	0 days	Fri 5/14/21	Fri 5/14/21	20
22	**D. Preliminary Design**	**73 days**	**Mon 11/2/20**	**Wed 2/10/21**	
23	Coordinate with agencies and stakeholders	10 wks	Mon 11/2/20	Fri 1/8/21	
24	Prepare preliminary design (30%) drawings	9 wks	Mon 11/30/20	Fri 1/29/21	8FS+1 wk
25	Prepare preliminary design report	7 wks	Mon 12/14/20	Fri 1/29/21	8FS+3 wks
26	Prepare cost estimates	2 wks	Mon 1/18/21	Fri 1/29/21	25FF
27	Submit prelimimary design to City	0 days	Fri 1/29/21	Fri 1/29/21	24,25
28	Conduct preliminary design review meeting with City (virtual)	0 days	Wed 2/10/21	Wed 2/10/21	27FS+8 days
29	Conduct public meeting (virtual)	0 days	Tue 2/2/21	Tue 2/2/21	
30	**E. Final Design**	**65 days**	**Thu 2/11/21**	**Wed 5/12/21**	
31	Prepare final contract drawings	9 wks	Thu 2/11/21	Wed 4/14/21	28
32	Prepare technical specifications	6 wks	Thu 3/4/21	Wed 4/14/21	
33	Prepare bid documents/project manuals	6 wks	Thu 3/4/21	Wed 4/14/21	
34	Update cost estimates	2 wks	Thu 4/1/21	Wed 4/14/21	37FF
35	Submit 60% design to City	0 days	Wed 3/17/21	Wed 3/17/21	31SS+5 wks
36	Conduct 60% design review meeting with City	0 days	Wed 3/24/21	Wed 3/24/21	35FS+1 wk
37	Submit 90% design to City	0 days	Wed 4/14/21	Wed 4/14/21	35SS+4 wks
38	Conduct 90% design review meeting with City	0 days	Wed 4/21/21	Wed 4/21/21	37FS+1 wk
39	Finalize/issue contract documents for bid	3 wks	Thu 4/22/21	Wed 5/12/21	38
40	**F. Bidding Phase**	**63.5 days**	**Wed 5/12/21**	**Tue 8/10/21**	
41	Advertise for bids	0 days	Wed 5/12/21	Wed 5/12/21	39
42	Conduct pre-bid meetings	0 days	Wed 5/26/21	Wed 5/26/21	41FS+2 wks
43	Bid opening	0 days	Mon 6/21/21	Mon 6/21/21	41FS+5.5 wks
44	Review/tabulate bids, issue recommendation of award	2 wks	Mon 6/21/21	Mon 7/5/21	43
45	City awards contracts	0 days	Mon 7/19/21	Mon 7/19/21	44FS+2 wks
46	Issue Notice of Award	0 days	Tue 7/20/21	Tue 7/20/21	45FS+1 day
47	Execute construction contracts	3 wks	Tue 7/20/21	Tue 8/10/21	46
48	**G. Construction Phase**	**249.5 days**	**Tue 8/10/21**	**Mon 7/25/22**	
49	Issue notice to proceed	0 days	Tue 8/10/21	Tue 8/10/21	47
50	Conduct pre-construction conferences	0 days	Tue 8/10/21	Tue 8/10/21	49
51	Contractor submittals, Engineer reviews	8 wks	Tue 8/10/21	Tue 10/5/21	49
52	Contractors mobilize	2 wks	Tue 9/7/21	Tue 9/21/21	49FS+4 wks
53	Active construction	20 wks	Tue 9/21/21	Tue 2/8/22	52
54	Construction substantially complete	0 days	Tue 2/8/22	Tue 2/8/22	53
55	Complete punchlist work, close-out contracts	8 wks	Tue 4/5/22	Mon 5/30/22	
56	Final contract completion	0 days	Mon 5/30/22	Mon 5/30/22	55
57	Prepare/submit record drawings	8 wks	Tue 5/31/22	Mon 7/25/22	56



APPENDIX G – COST ESTIMATE DETAIL AND SUPPORTING DOCUMENTATION

St Paul Terminus Resiliency Improvements - MO-03 and 09

2021 Construction Cost Estimate

	Item	Quantity	Unit	Unit Price	Total
CONTRACT G - BASE BID ITEMS					
1	**Item 1**				
a	Wall Improvements - Sheriff Station				
	- Mobilization and Prep Work	1	LS	$10,000	$10,000
	- Excavation	189	CY	$8	$1,512
	- Dispose Excavated Spoil	163	CY	$69	$11,247
	- Remove Existing Chainlink Fench	262	LF	$5	$1,310
	- Backfill	26	CY	$30	$780
	- Timber Piles	1044	LF	$30	$31,320
	- C.I.P. Reinf. Concrete Flood Wall	173	CY	$1,500	$259,500
	- Install New Chainlink Fence	113	LF	$60	$6,780
	- Aluminum Stoplogs, 4ft wide x 4.5 ft tall, 2 each	1	LS	$6,400	$6,400
	- Stairs	2	EA	$5,000	$10,000
	- Miscellaneous	1	LS	$15,000	$15,000
	- Navigation Lights - Pier	1	LS	$10,000	$10,000
	Wall Improvements - Boat Slip				
	- Excavation	8	CY	$8	$64
	- Remove Existing Chainlink Fench	55	LF	$5	$275
	- Demo Existing Steel Guard Rail	57	LF	$5	$285
	- Demo Concrete Sidewalk	1	CY	$248	$248
	- C.I.P. Reinf. Concrete Flood Wall	22	CY	$2,200	$48,400
	- Backfill	8	CY	$30	$240
	- Replace C.I.P. Conc Sidewalk	72	SF	$7	$504
	- Install New Chainlink Fence	55	LF	$60	$3,300
	- Aluminum Stoplogs, 4ft wide x 4.5 ft tall, 1 each	1	LS	$3,200	$3,200
	- Miscellaneous	1	LS	$15,000	$15,000
b	Wall Improvements - NYSDEC Fishing Access				
	- Prep Work	1	LS	$10,000	$10,000
	- Concrete Demo	538	SF	$8	$4,304
	- Demo Existing Steel Guard Rail	256	LF	$5	$1,280
	- C.I.P. Reinf. Concrete Flood Wall	88	CY	$2,200	$193,600
	- Aluminum Stoplogs, 4ft wide x 4.5 ft tall, 5 each	5	LS	$16,000	$80,000
	- Miscellaneous	1	LS	$15,000	$15,000
c	Wall Improvements - Private Property				
	- Connect South Side O'Loughlins	1	LS	$7,500	$7,500
	- Connect North Side O'Loughlins	1	LS	$7,500	$7,500
d	Wall Improvements - USCG Dock - Included as Alternate				
d	Wall Improvements - USCG Slip				
	- Prep Work	1	LS	$10,000	$10,000
	- Excavation	243	CY	$8	$1,944
	- Backfill	115	CY	$30	$3,450
	- C.I.P. Reinf. Concrete Flood Wall	76	CY	$2,200	$167,200
	- Remove Asphalt Pavement	44	SF	$12	$528
	- Demo existing steel bulkhead	22	LF	$119	$2,618
	- New Steel Bulkhead	22	LF	$560	$12,320
	- Aluminum Stoplogs, 4ft wide x 5.5 ft tall, 2 each	1	LS	$7,800	$7,800
	- Miscellaneous	1	LS	$15,000	$15,000
e	Storm Water Pumping Station				
	- Precast Concrete Stuctures Installed	1	LS	$150,000	$150,000
	- PS Piping Systems	1	LS	$30,000	$30,000
	- Pumps	1	LS	$70,000	$70,000
	- Force Main	250	LF	$40	$10,000
	- Storm Sewers	1	LS	$35,000	$35,000
	- Restoration	1	LS	$7,500	$7,500
d	Summerville Pumping Station				
	- Collection System Improvements	1	LS	$3,800	$3,800
	- Flood Protection	1	LS	$5,607	$5,607
	- Pump System Supply	1	LS	$92,256	$92,256
	- Piping and Pump Installation	1	LS	$33,890	$33,890
	- Bypass Pumping	1	LS	$9,040	$9,040
	- Gas Service Modifications	1	LS	$5,000	$5,000
2	Asphalt Paving	1	LS	$15,000	$15,000
3	**Maintainance & Protection of Traffic**	1	LS	$15,000	$15,000
4	**Erosion & Sediment Control**	1	LS	$20,000	$20,000
5	**Mobilization/Demob**	1	LS	$75,000	$75,000
				Subtotal	**$1,552,502**

St Paul Terminus Resiliency Improvements - MO-03 and 09

2021 Construction Cost Estimate

				20% Contingency	$310,500
				ESTIMATED TOTAL CONTRACT G COST	**$1,863,002**
				ROUNDED CONTRACT G COST	**$1,863,100**
Add Alternative 1; INCLUDE ALTERNATES AS NEEDED - REMOVE IF NONE					
a	Wall Improvements - USCG				
	- Mobilization and Prep Work	1	LS	$10,000	$10,000
	- C.I.P. Reinf. Concrete Flood Wall; incl surface prep, drill and grout anchors, conc, rebar, formwork	119	CY	$2,200	$261,800
	- Miscellaneous	1	LS	$15,000	$15,000
b	Spare Submersible Pump (Summerville)	1	LS	$19,900	$19,900
c	Aluminum Stop Logs (interior) Summerville	1	LS	$13,840	$13,840
				Subtotal	**$320,540**
				20% Contingency	$64,108
				ESTIMATED TOTAL ALTERNATE COST	**$384,648**
				ROUNDED ALTERNATE COST	**$384,700**
Work to Be Provided by City/Town/County (describe)					
1	New 480v Electric Service	1	LS	$10,000	$10,000
				Subtotal	**$10,000**
				20% Contingency	$2,000
				ESTIMATED TOTAL TOWN COST	**$12,000**
				ROUNDED TOWN COST	**$12,000**
CONTACT E - BASE BID					
1	**Mobilization**	1	LS	$15,000	$15,000
2	**Summerville Pumping Station**				
	- Electrical Upgrades	1	LS	$30,000	$30,000
3	**SW Pumping Station**				
	- Combined Power Service (panel in SV PS)	1	LS	$15,000	$15,000
	- Power for SW PS	1	LS	$7,500	$7,500
	- Misc Elect and Controls	1	LS	$5,000	$5,000
4	**USCG Station**				
	Electrical Relocation	1	LS	$40,000	$40,000
4	**Backup Power System**				
	- NG Fired Genset (exterior)	1	LS	$75,000	$75,000
	- ATS (located inside Summerville PS)	1	LS	$15,000	$15,000