



PRELIMINARY DESIGN REPORT WEST SIDE GENESEE SHORELINE RESILIENCY IMPROVEMENTS (MO-07 AND MO-10)

CITY OF ROCHESTER, NEW YORK
FEBRUARY 1, 2021

PRELIMINARY DESIGN REPORT WEST SIDE GENESEE SHORELINE RESILIENCY IMPROVEMENTS (MO-07 AND MO-10)

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CONTENTS

1.	Introduction	2
1.1	Background	2
1.2	Purpose and Scope	3
2.	Proposed Improvements – Basis of Design	4
2.1	Design Water Levels	4
2.2	Geotechnical Evaluation	4
2.3	Shoreline Protection	5
2.4	Flood Wall	7
2.5	Floating Dock Improvements	14
2.6	Floodplain Modeling	15
2.7	Excavated Soil Management	15
3.	Required Permits and Approvals	16
4.	Project Schedule	18
5.	Project Costs	19

List of Appendices

- A. Geotechnical Evaluation [including boring logs, laboratory test results]
- B. Wetland Delineation
- C. Engineering Drawings
- D. Floodplain Modeling Report
- E. Soil Management Plan
- F. Project Schedule [MS Project]
- G. Cost Estimate Detail and Supporting Documentation

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 west 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 encompasses an evaluation of alternatives and 10% conceptual design to help guide the next steps of the project execution process and identifies 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 2,800-foot stretch of Genesee River shoreline (Figure 1-1). The shoreline consists of the City of Rochester's River St. Marina 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, riverbank erosion 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-07 West Side Genesee River Businesses, generally from the train station heading north, and MO-10 City of Rochester Marina, extending south from the train station to the north boundary of Gibbs Marina.



Figure 1-1. *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, 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

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 or flood protection 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. Therefore, in zones calling for bank stabilization, the measures are proposed to extend to elevation of 252.0' (2-foot wave allowance, no freeboard). 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). Wave height allowance is an assumed allowance.

To comply with the National Flood Insurance Program (NFIP) and local floodplain development requirements, detailed modeling and wave height calculations will be performed 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 assist in the design of the proposed improvements to the project shorelines. The subsurface conditions were evaluated based on an exploration program conducted from November 2 to November 10, 2020. A total of eight (8) borings were drilled by CME Associates, Inc., under subcontract to Ramboll, at the locations shown in Appendix A.

The termination depths of the borings ranged from 10 feet to about 90 feet below the existing ground surface. The borings generally encountered 1.5 to 8 feet of fill below the existing grade. The fill consists of heterogeneous mixtures of gravel, sand and silt. Cinders and wood fragments were also encountered in the fill. The fill primarily classifies as moist, medium dense, silty sand with gravel (SM). The fill is underlain by alluvium, then glacial till. The alluvium primarily consists of moist, soft, silty clay (CL-ML)

and silt (ML). The thickness of the alluvium varied from about 43 to 83 feet. The till primarily classifies as moist, very dense silt with gravel (ML).

The proposed sheet pile flood wall was analyzed using the Shoring Suite software program. The geotechnical design parameters and sheet pile analysis results are provided in the Geotechnical Evaluation (Appendix A).

2.3 Shoreline Protection

This section provides recommendations for shoreline protection in Zones A through E, outlined in Section 4 and Appendix A of the March 2020 REDI Engineering Report. The shoreline protection measures will stabilize portions of the riverbank that are unprotected from foreseeable high-water events and wave run-up. The recommended improvements include:

- Rip-rap extension for Zones A, B, C, and E
- Precast wall extension for Zone D (Figure 2-1)



Figure 2-1. Aerial Map of Zones A through E

Existing conditions in Zones A, B, C and E consist of rip-rap to an elevation of 250' and dense vegetation, covering the rip-rap and encroaching on the adjacent floating docks. A wetland delineation was performed in this area and segments were determined to be emergent wetland. The full delineation is included as Appendix B.

The vegetation above the elevation of 250' to 253' will require minimal clearing and grubbing to support placement of rip-rap. The existing rip-rap is in sound condition and requires minimal improvements in the toe section of the existing revetment, minimizing disruption within the riverbed. In Zone D, the existing retaining wall extends to a height of 250' elevation and has not been damaged. The area behind the wall is a combination of grass and bare ground under the Colonel Rourke Bridge. Proposed improvements are described below:

Rip-Rap Extension – Zones A, B, C and E

The shoreline along Zones A, B, C and E will be modified by clearing out debris within the existing rip-rap and extending the rip-rap up the river-bank to a final elevation of 253'. The top of the bank will be regraded to blend the existing grades into the rip-rap. The new stone will match the existing stone characteristics to the extent possible.

Advantages to the proposed rip-rap extension design (Figure 2-2) include:

- Continuous protection to a crest elevation of 253'
- Minimal to no grading of existing bank slope (2:1)
- Easily maintained and modified, consisting of new and existing medium-sized stone
- Minimal disruption within the riverbed

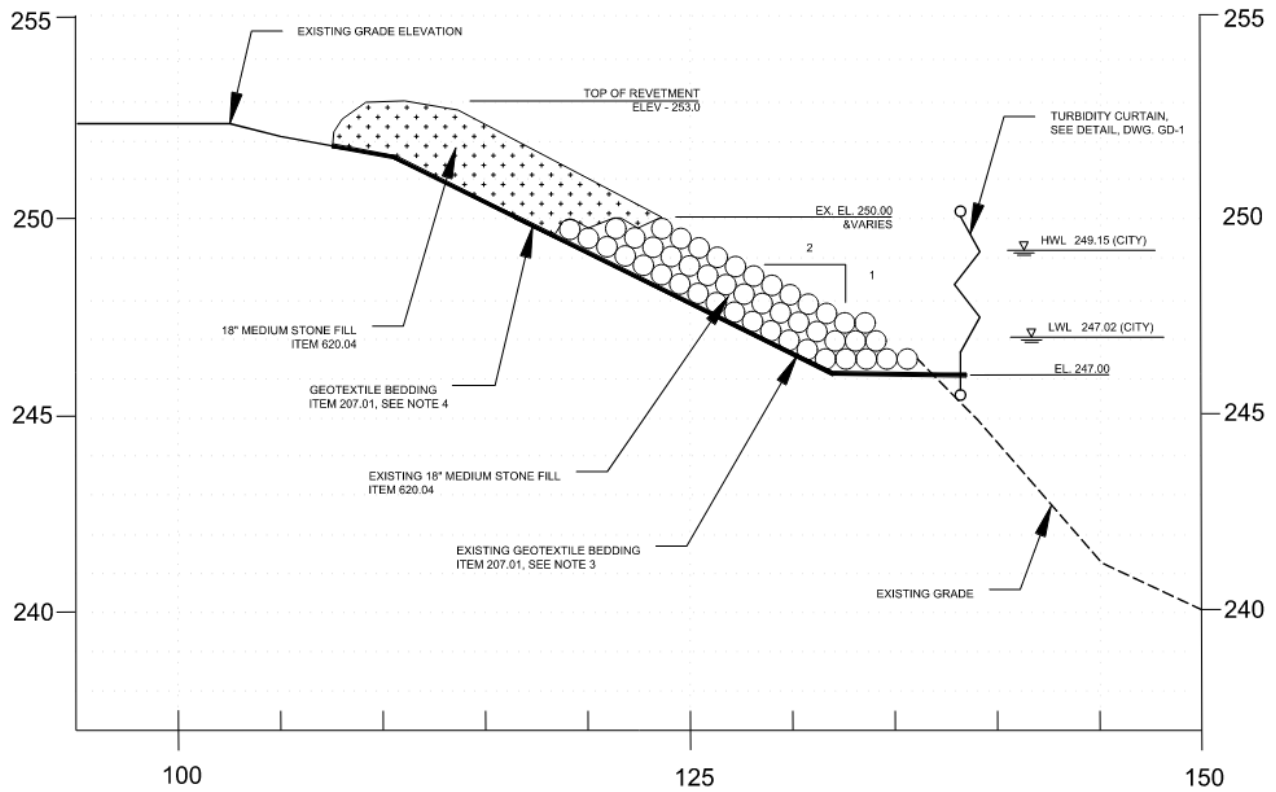


Figure 2-2. Rip-Rap Extension: Zone A, B, C and E

Pre-Cast Wall Extension – Zone D

The proposed pre-cast wall extension would raise the existing wall by 3 feet to a final elevation of 253' using three 1-foot precast concrete sections. The backside of the wall will be filled with drainage stone and topsoil, graded and seeded to provide drainage and prevent against erosion.

Advantages to the proposed pre-cast wall extension design (Figure 2-3) include:

- Continuous protection to a crest elevation of 253'
- Little to no loss of adjacent green space
- No disruption within the riverbed

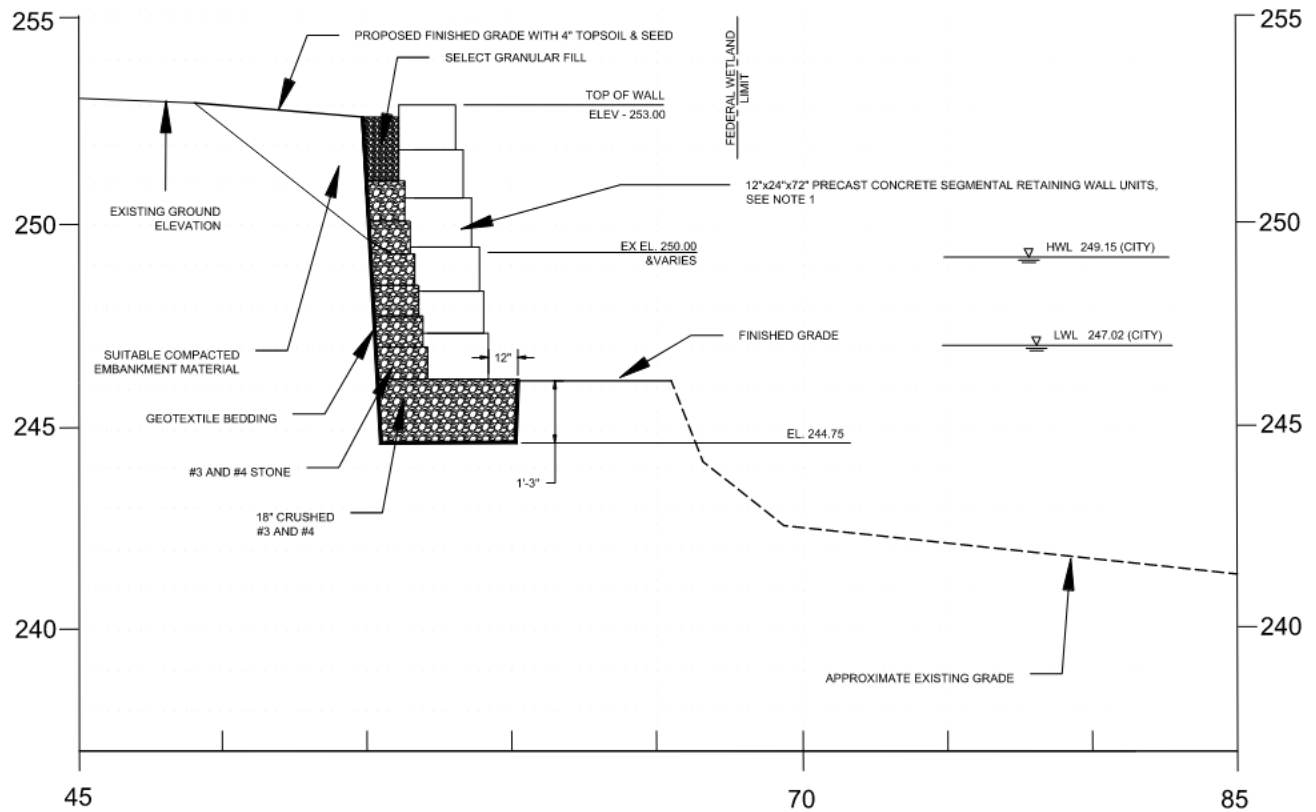


Figure 2-3. Pre-cast Wall Extension: Zone D

2.4 Flood Wall

Zones F-1 and F-2

The existing boardwalk structure in Zones F-1 and F-2 was constructed in 2006 and consists of wood planking and floor joists supported by pile-supported timber bent frames. The bents are anchored to the reinforced concrete cap of a continuous steel sheet pile bulkhead. The top of the boardwalk in Zone F-1 is at El. 253.2' and varies between El. 253.2' and El. 251.75' in Zone F-2. Figure 2-4 shows the approximate limits of Zones F-1 and F-2.



Figure 2-4. Aerial Map of Zone F

A new concrete flood wall will protect both zones from future flooding. The new flood wall will be achieved by extending the concrete cap with reinforced concrete to match the finished floor elevation of the existing train depot (approximate El. 253.7'). Openings in the new flood wall will be provided at the existing train station, boater services building doors and along the parking lot. Aluminum stoplogs will be provided to close these openings during flood events. Figures 2-5 and 2-6 show typical sections in Zones F-1 and F-2.

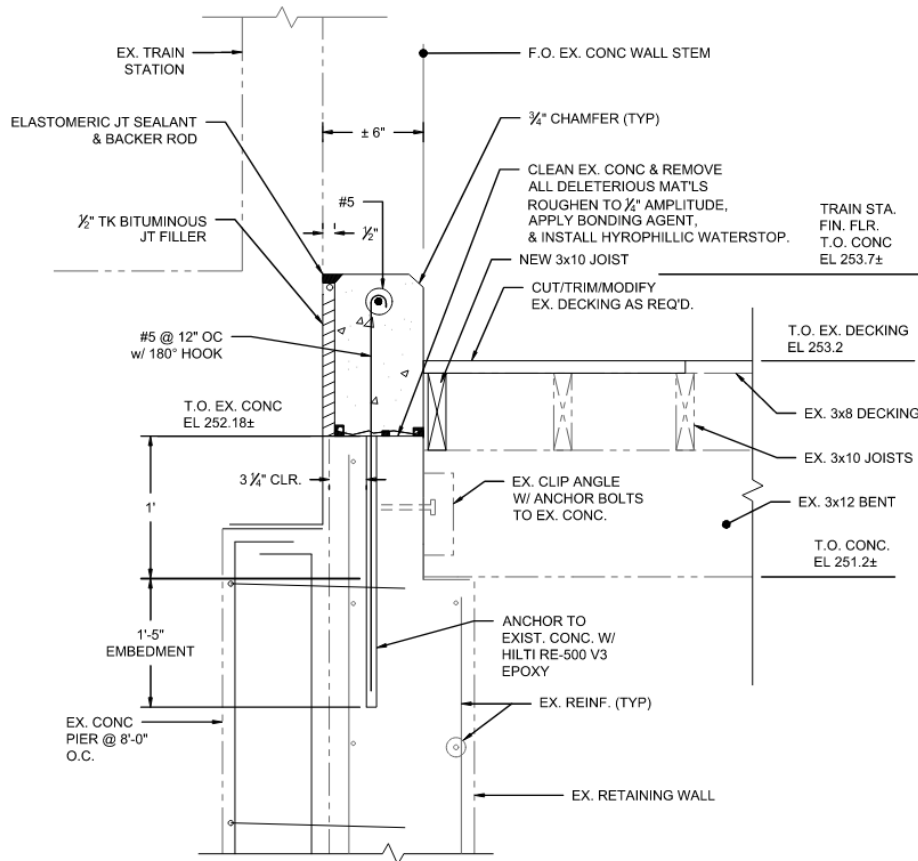


Figure 2-5. Flood Wall Raising Detail at Zone F-1

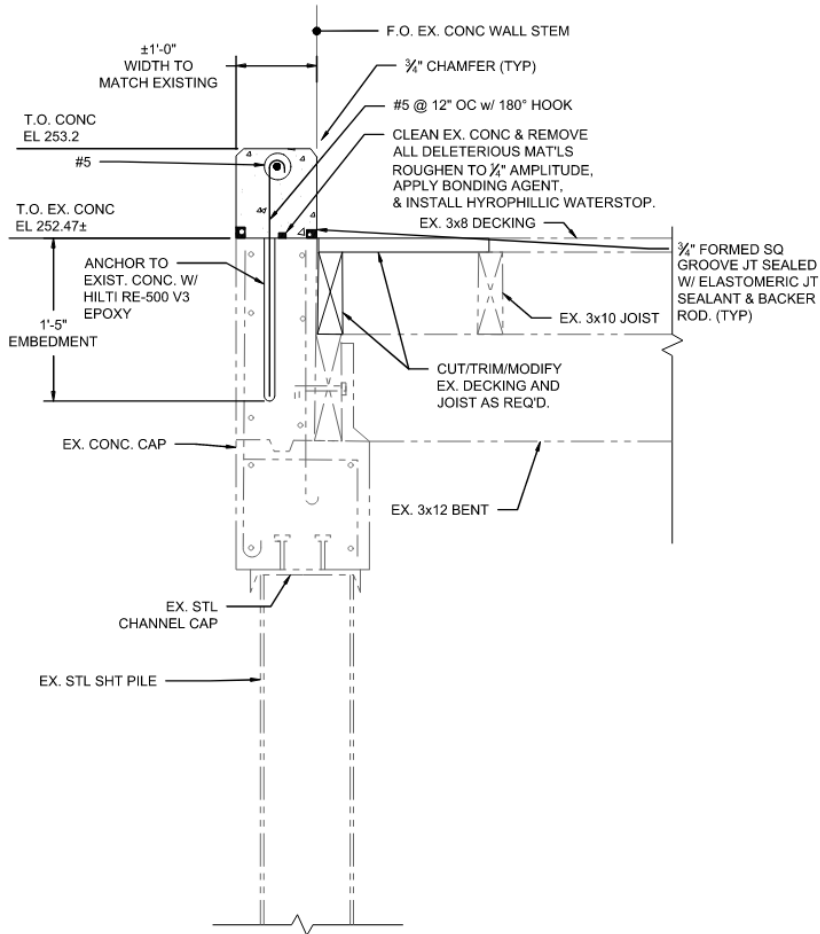


Figure 2-6. Flood Wall Raising Detail at Zone F-2

Zone G

Zone G extends north from the northern end of Zone F-2 to the northern terminus of the Charlotte Pump Station parcel. Figure 2-7 shows the limit of Zone G.



Figure 2-7. Aerial Map of Zone G

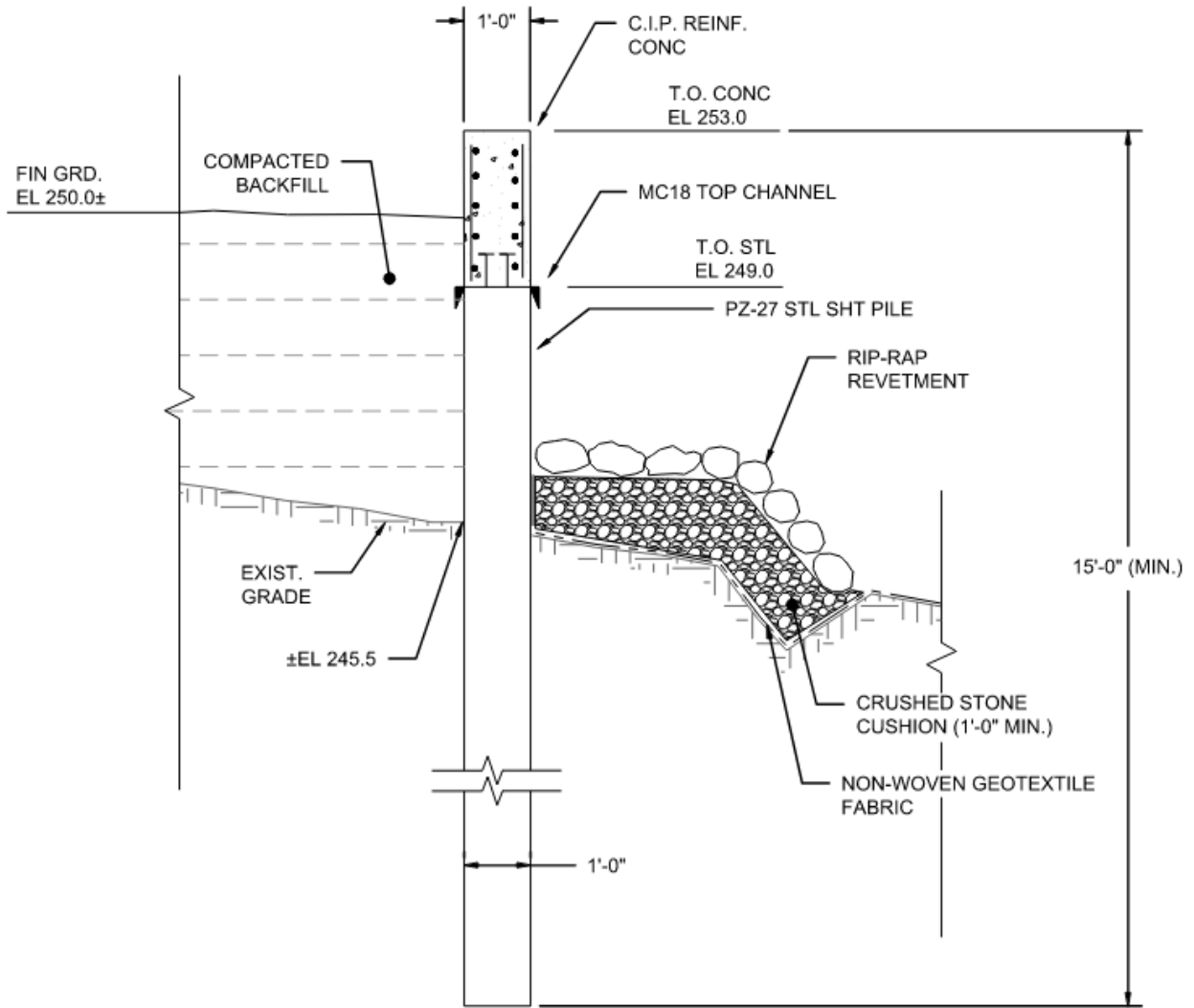


Figure 2-9. Flood Wall Detail at Boat Launch

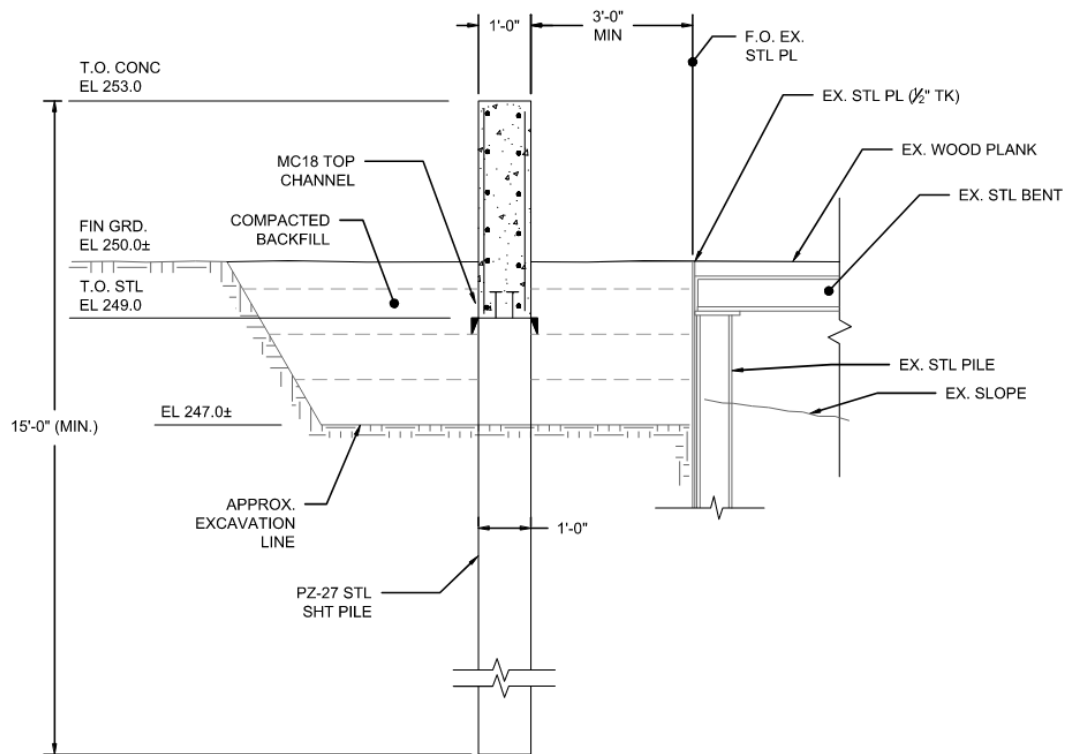


Figure 2-10. Flood Wall Detail at US Coast Guard Auxiliary Dock

USCG Auxiliary Station

Ramboll understands that the USCG is in the beginning stages for building a new auxiliary station that meets current federal standards. More detailed information about the new auxiliary station is required to determine whether or not additional flood protection is required at this property. Until more information is available, Ramboll proposes to design a new steel sheet pile flood wall with a reinforced concrete cap inboard (land side) of the existing USCG dock to protect the property to El. 253.0'. A stop log opening will be provided at the auxiliary building for access to the dock.

Monroe County (Charlotte) Pump Station

A new reinforced concrete flood wall will protect the Monroe County Pump station to El. 253.0'. The proposed flood wall will extend the entire parcel length, connecting to the flood wall at the USCG auxiliary to the south and will abut the flood wall of the private residence on 530 River Street to the north. Due to poor soil conditions and multiple underground utilities present at the site, the flood wall will be designed as a pile-supported grade beam foundation system. The wall will be supported by a single row of timber friction piles spaced approximately 8 to 10 feet on center. The grade beam will be designed to span between concrete pile caps located on either side of the underground utility crossings where piles cannot be driven. Figure 2-11 provides a typical flood wall cross-section. The existing boardwalk structure has been severely damaged by prior flooding and will be removed and not replaced.

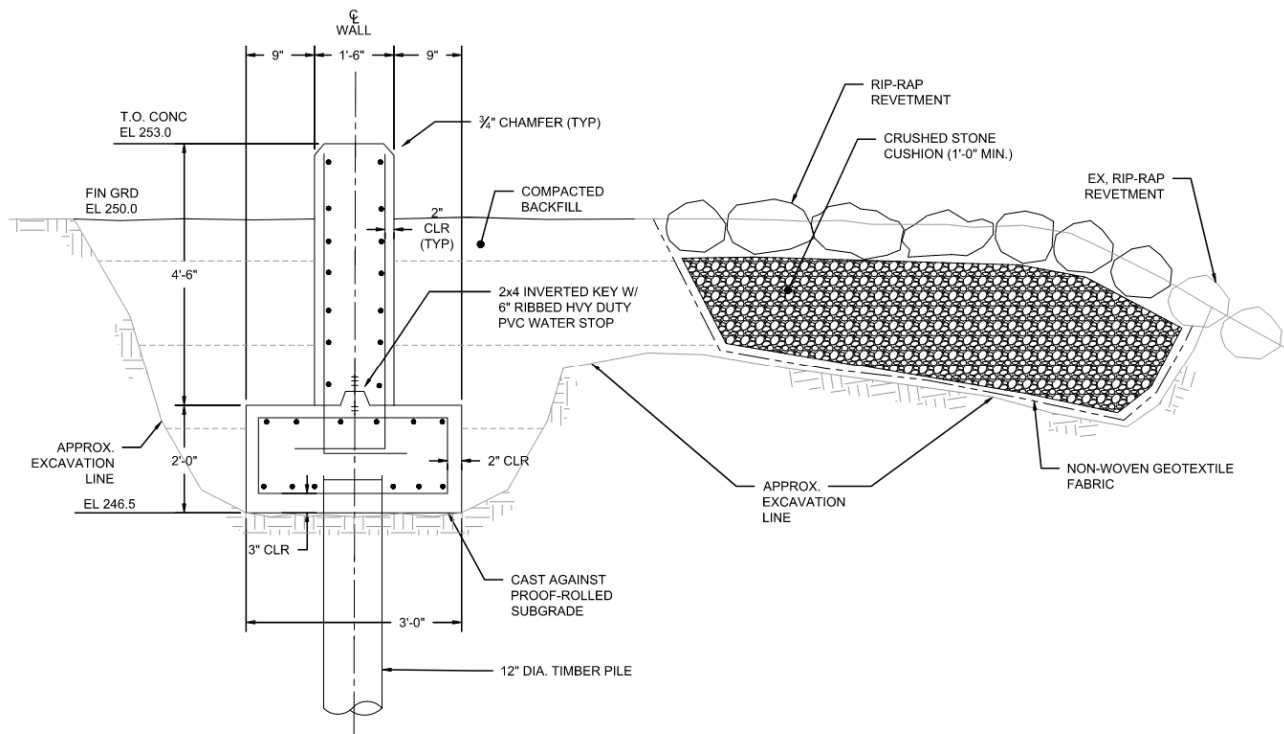


Figure 2-11. Flood Wall Detail at Charlotte Pump Station

The cast-in-place concrete features will be analyzed and designed in accordance with the United States Army Corps of Engineers (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 and designed 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.

Stormwater Management

During recent flooding events in 2017 and 2019, water ponded in River Street as the elevation of the street and associated stormwater system was lower than the level of the Genesee River. This condition caused water to back up into the street and further limited any flow of storm water into the river. As a stopgap measure, the owner of 560-566 River Street installed a temporary pumping system to evacuate the water and convey it to the river. This measure coupled with temporary sandbags and a short masonry wall provided some level of flood protection to the adjacent structures.

A permanent system consisting of two pumping stations is proposed to convey water that collects on River Street and cannot flow by gravity to the river during high water conditions. The reason for two pump

stations is that an existing elliptical storm pipe running down River St (E-W) bisects the 18-inch River St. storm drain isolating the storm drainage into two sectors.

The first pumping station will be located 504 River St. and consist of the following:

- Manhole located in River St. intersecting the 18-inch diameter stormwater line
- 8-foot diameter precast concrete wet well, approximately 9'-0" deep
- Precast concrete valve vault
- 10-inch diameter force main extending to the Genesee River
- Submersible pumping system with capacity of approximately 1,500 GPM; final capacity to be determined during detailed design
- New electrical service and portable backup power connection

A second pump station is proposed in the northeast corner of 530 River St. to remove water that collects in this area and convey it to the Genesee River. This pump station will be a pre-engineered system designed to fit into a small area and convey approximately 700 GPM.

To reduce backflow of water from the river into the system, check valves are recommended on the existing storm drains.

The proposed location of the pumping stations and discharge piping is shown on the attached drawings (Appendix C).

2.5 Floating Dock Improvements

The existing floating docks located along Zones A, B, C and F are limited to vertical travel due to the type of lateral/vertical deadman struts utilized (Figure 2-12).



Figure 2-12. Existing Floating Docks in Zone E

To provide additional vertical travel for the docks, these struts will be removed and piles installed adjacent to and attached to the docks to allow for unimpeded vertical travel.

The piles will be fabricated of concrete filled steel pipe (6 to 8-inch diameter) installed at a spacing of 30 to 50 feet along the inboard side of the docks and will be embedded a minimum of 15 feet into the riverbed to provide long-term lateral stability.

The electric service to the docks will be modified to provide greater vertical travel to support water elevations outlined in section 2.1.

2.6 Floodplain Modeling

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

2.7 Excavated Soil Management

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

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.

Table 3-1. Required Permits and Approvals

Agency	Permit	Regulated Activity
US Army Corps of Engineers	Sections 404 and 408 of Clean Water Act/Section 10 of Rivers and Harbors Act (Joint Application)	Section 404 – Regulates fill and/or discharge of dredged material in Waters of the United States. Section 408 - Use or alteration of a Civil Works project by another party. Section 10 – Regulates activities in federally designated navigable waterbodies.
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.
NOAA/National Marine Fisheries Service	Consultation	Essential fish habitat review; recommended for work near regulated fish habitat.
US Coast Guard/Monroe County Sheriff	Notice to Mariners	Notify the Coast Guard of location and schedule of work that affects boat traffic
NYS Department of Environmental Conservation	State Environmental Quality Review Act (SEQRA)	Environmental impact assessment through preparation of Full Environmental Assessment Form.
	Article 15 – Protection of Waters (Joint Application)	Disturbance to bed/banks of the Genesee River (Class B) and Excavation or Fill in Navigable Waters.
	Article 34: Coastal Erosion Hazard Permit Area (Joint Application)	Disturbance within a designated Coastal Erosion Hazard Area.
	6 NYCRR Part 182: Incidental Take Permit (Joint Application)	May be required due to the potential presence of New York State listed Threatened or Endangered mussel species within the project area.
	Section 401 Water Quality Certification (Joint Application; pre-filing meeting request)	Certification that the proposed activity will not violate State water quality standards.
	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.

Agency	Permit	Regulated Activity
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 General Services	Notice of Petition for Grant or Easement for Underwater Lands	Modification of State lands underwater.
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:

- To reduce impacts to fish species in the lower Genesee River, construction activities may be restricted during certain times of year by the NYSDEC.
- 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.
- Pursuant to Section 401 of the CWA, a Water Quality Certification (WQC) pre-filing meeting request will need to be submitted to the NYSDEC at least 30 days prior to submitting the Section 401 WQC request via the Joint Application for Permit.
- The NYSDEC requested that a mussel survey be performed for West Side Zone G at a minimum. Survey and relocation (if required) can be completed at the same time within one season as long as the relocation is in same season as the construction start.
- An incidental take permit may be required if protected mussel species are identified during the mussel survey.
- Jurisdictional wetlands were identified within the project area along a portion of the western shoreline. Impacts to these wetlands should be avoided and minimized to the extent practicable to avoid the potential need to provide compensatory mitigation for impacted acreage.
- The USACE has indicated that the proposed project may be authorized under their Nationwide Permit (NWP) program, specifically NWP. No. 13 (Bank Stabilization). A Pre-Construction Notification (PCN) will be prepared and submitted to the USACE requesting a jurisdictional determination of the delineated wetlands and authorization of the proposed project under NWP No. 13.

4. Project Schedule

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

Table 4-1. *Schedule Summary*

Activity or Milestone	Target Date
Finalize "preliminary investigations"	Nov 30, 2020
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	March 19, 2021
Final design – 60% design submittal	March 24, 2021
Final design – 90% design submittal	Apr 21, 2021
Advertise for bids	May 2021
Receive bids	Jun 2021
Award/execute construction contracts	Aug 2021
Issue notice to proceed to contractors	Aug 2021
Contractor's mobilize	Sep 2021
Construction Substantial Completion	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 G.

Table 5-1. Project Cost Summary

Item/Description	Amount
Shoreline Improvements	\$2,101,000
Subtotal	\$ 2,101,000
Contingency allowance (20%)	420,200
Escalation thru midpoint of construction	37,000
Total estimated construction cost	\$ 2,558,200
Engineering, legal and administrative fees	600,000
Total estimated project cost	\$ 3,158,200

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

The project budget established through the REDI program is \$3,289,000 and requires a minimum City match of 5%. Additional program features may be added but reimbursement through REDI is limited to \$3,124,550 and any cost above this will be picked up by the City or other funding sources.

APPENDIX A – WETLAND DELINEATION

MEMO

Project name **West Side Genesee Shoreline Resiliency Improvements Project – Lower Genesee River, Rochester, NY**
Project no. **1940100197**
Client **City of Rochester**
To **Jeff Mroczek**
From **Ron Chiarello**
Copy to **Kyle Buelow, CERP, CPESC, CPSWQ, ENV SP; Rick Duff**

Ramboll performed a wetlands presence/absence survey within the proposed area of impact associated with west side Genesee River shoreline resiliency improvements located in the City of Rochester, Monroe County, New York. This project is being completed as part of the Resiliency and Economic Development Initiative (REDI). Under the REDI program, the project area has been separated into two distinct but connected projects: 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. The survey was conducted by Ronald Chiarello on October 8, 2020, a Ramboll biologist trained in wetlands identification and delineation.

Date December 1, 2020

The Genesee River shoreline area identified in Figure 1 was field inspected for the potential presence of wetlands and waters, as regulated by the U.S Army Corps of Engineers (USACE) and the New York State Department of Environmental Conservation (NSYDEC).

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Figure 1. PROJECT LOCATION MAP

Wetlands Presence/Absence Survey

Methodology

The USACE and U.S. Environmental Protection Agency (USEPA) jointly define wetlands as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions [33 Code of Federal Regulation (CFR) 328.3(b), 40 CFR 230.3(t)]. Environmental criteria for wetlands, as defined by the USACE, include:

- the dominant vegetation is hydrophytic (water tolerant)
- the soils present have been classified as hydric or possess reducing soil characteristics
- the area is either permanently or periodically inundated at mean water depths less than or equal to 6.6 feet, or the soil is permanently or periodically saturated to the surface during the growing season.

The potential presence of habitats that would likely meet the criteria established by the USACE and NYSDEC for wetland habitat in the following Manuals was evaluated throughout the project area:

- USACE. 1987. *Corps of Engineers Wetlands Delineation Manual*, Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
- USACE. 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region*. ERDC/EL TR-09-19. USACE's Engineer Research and Development Center, Vicksburg, MS. January.
- NYSDEC 1995. *Freshwater Wetlands Delineation Manual*. July.

According to the Manuals, wetlands are characterized based on hydrology, soils and vegetation. These three parameters were evaluated within the project area for wetland indicators such as hydric soils, periodic flooding or soil saturation, and the presence of hydrophytes (water tolerant vegetation). On-site activities included evaluation of vegetation, soil and hydrologic characteristics to identify potential wetland habitat.

To make a positive wetland determination, a minimum of one wetland indicator from each criterion (vegetation, soil, and hydrology) must be found.

New York State Freshwater Wetlands (NYSFW)

The NYSFW maps were developed by the NYSDEC pursuant to Article 24 of the Environmental Conservation Law. These maps present the approximate boundaries of freshwater wetlands regulated by the NYSDEC. In most instances, the State-mapped boundaries are based on aerial photographs and soil survey interpretation and, therefore, require site-specific field verification.

As shown on Figure 2, no NYSFWs or associated check zones are located in the vicinity of the project site.



Figure 2. NYSEW MAP

Soil Mapping

The Web Soil Survey (USDA-NRCS 2020) for the project area identifies Urban land, Made land, and Water as the mapped soil elements within the area of impact. This is consistent with what was observed in the field. Based on information presented in the Web Soil Survey, none of the mapped soils at the project location are designated as hydric (wetland) soils.

On-Site Investigation

Ramboll biologists performed the field activities associated with wetland presence/absence survey on October 8, 2020. On-site activities included the evaluation of vegetative communities, the soil substrate, and hydrologic characteristics to identify the presence/absence of wetlands. Field data were gathered at several locations within the limits of disturbance. Vegetative, soil, and hydrologic conditions were evaluated pursuant to the USACE delineation methodology and the boundary provided in Figure 3 illustrates the approximate limits of three wetland habitats (W1, W2 and W3) that were identified along the western shoreline of the Genesee River within the project boundaries. These wetland limits were based on the following:

1. Vegetation – The following palustrine wetland species were observed along the Genesee River shoreline, before the wetland habitat transitions to the riverine/open water habitat of the river beyond the approximate eastern wetland boundaries of each wetland:

Wetland 1 (W1)

- Lake sedge (*Carex lacustris*)
- Pennsylvania smartweed (*Persicaria pennsylvanica*)

W2

- Hybrid cattail (*Typha X glauca*)
- Common reed (*Phragmites australis*)
- Pennsylvania smartweed
- Flowering rush (*Butomus umbellatus*)

W3

- Flowering rush
- Hybrid cattail
- Pennsylvania smartweed
- Lake sedge
- Reed canary grass (*Phalaris arundinacea*)

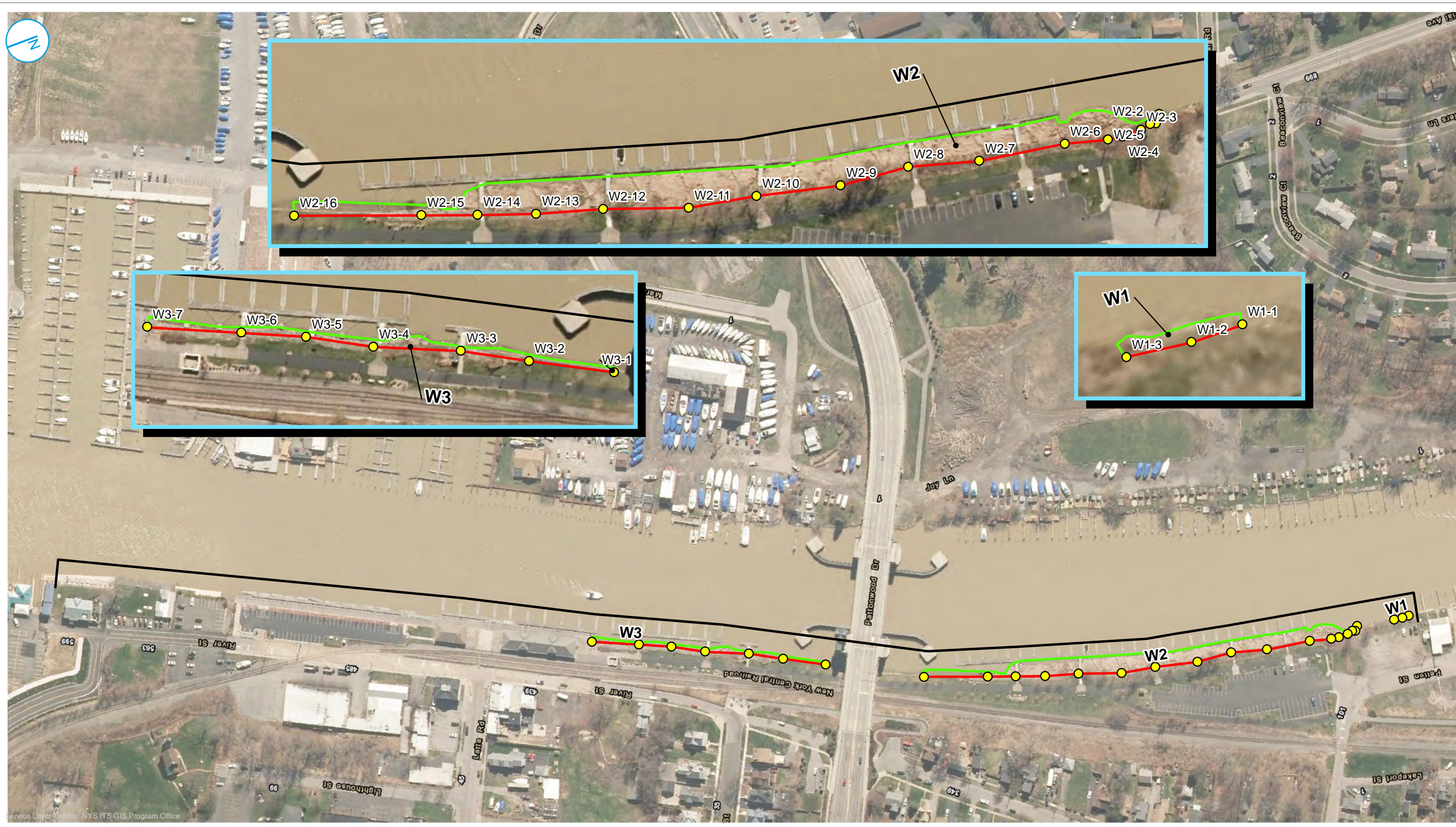
The remainder of the shoreline area is armored with riprap and/or over-topped by wooden/metal piers and transitions to the open water/riverine habitat without palustrine wetland habitat.

2. Soils – Soil observed within the areas where emergent vegetation is present were predominantly inundated mucky soils.
3. Hydrology – The area within the wetland boundaries shown on Figure 3 were predominately inundated by the Genesee River with water depths ranging from approximately -1 ft to 3 ft. The landward area to the west at and above the armored shoreline does not possess wetland hydrology, while the area to the east is riverine/open water habitat with water depths greater than 2 ft.

Wetland characteristics observed for a point near the southern portion of W2 are summarized on the Wetland Data Form included as Attachment 1. An upland sample point is also included in Attachment 1. A photograph log of the proposed project location documenting field survey activities is included as Attachment 2.

Summary

Ramboll biologists performed a wetlands presence/absence survey on October 8, 2020 within the proposed area of impact associated with shoreline resiliency improvements along the western shoreline of the lower Genesee River. Palustrine wetland habitat that was identified and delineated within the project area was limited to along the western shoreline. The wetland features observed were within the anticipated area of disturbance associated with shoreline improvements; however, the extent of disturbance, if any, is uncertain and will be dependent on the final project design. The remainder of the project area includes armored and/or developed shoreline or riverine/open water habitat.



- APPROX. PROJECT AREA
- WESTERN WETLAND BOUNDARY
- EASTERN APPROX. WETLAND BOUNDARY
- WETLAND FLAG



**APPROXIMATE WETLAND BOUNDARY
WEST SIDE OF GENESSEE RIVER IMPROVEMENTS**

FIGURE 3

ATTACHMENT 1
WETLAND DATA FORMS

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: West Side Genesee R Shoreline Resiliency Improvements City/County: Rochester/Monroe Sampling Date: 10/8/2020
 Applicant/Owner: City of Rochester State: NY Sampling Point: 2
 Investigator(s): R.Chiarello and C. Nack Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Floodplain/River shoreline Local relief (concave, convex, none): none Slope %: 0-2
 Subregion (LRR or MLRA): LRR L, MLRA 101 Lat: 43°14'45.08"N Long: 77°36'47.68"W Datum: _____
 Soil Map Unit Name: Urban land and Made land NWI classification: nono

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
---	---

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 2

<u>Tree Stratum</u> (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
				=Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
				=Total Cover
<u>Herb Stratum</u> (Plot size: _____)				
1. <u>Hieracium lachenalii</u>	10	No	UPL	
2. <u>Cirsium vulgare</u>	15	Yes	FACU	
3. <u>Artemisia vulgaris</u>	30	Yes	UPL	
4. <u>Oenothera biennis</u>	5	No	FACU	
5. <u>Carex scoparia</u>	5	No	FACW	
6. <u>Lythrum salicaria</u>	10	No	OBL	
7. <u>Persicaria pensylvanica</u>	5	No	FACW	
8. <u>Impatiens capensis</u>	5	No	FACW	
9. <u>Plantago major</u>	5	No	FACU	
10. <u>Symphyotrichum ericoides</u>	20	Yes	FACU	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
				110 =Total Cover
<u>Woody Vine Stratum</u> (Plot size: _____)				
1. <u>Vitis riparia</u>	5	Yes	FAC	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				5 =Total Cover

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>10</u>	x 1 = <u>10</u>
FACW species <u>15</u>	x 2 = <u>30</u>
FAC species <u>5</u>	x 3 = <u>15</u>
FACU species <u>45</u>	x 4 = <u>180</u>
UPL species <u>40</u>	x 5 = <u>200</u>
Column Totals: <u>115</u> (A)	<u>435</u> (B)
Prevalence Index = B/A = <u>3.78</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

Remarks: (Include photo numbers here or on a separate sheet.)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: West Side Genesee R Shoreline Resiliency Improvements City/County: Rochester/Monroe Sampling Date: 10/8/2020
 Applicant/Owner: City of Rochester State: NY Sampling Point: 1
 Investigator(s): R. Chiarello and C. Nack Section, Township, Range: _____
 Landform (hillside, terrace, etc.): floodplain river shoreline Local relief (concave, convex, none): none Slope %: 0
 Subregion (LRR or MLRA): LRR L, MLRA 101 Lat: 43°14'45.1"N Long: 77°36'47.4"W Datum: NAD83
 Soil Map Unit Name: Water NWI classification: Riverine (R2UBH and R2UBHx)

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
--	---

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>4</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Sample point below ordinary high water of the Genesee River.

VEGETATION – Use scientific names of plants.

Sampling Point: 1

<u>Tree Stratum</u> (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
				=Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
				=Total Cover
<u>Herb Stratum</u> (Plot size: <u>1m sq.</u>)				
1. <u>Typha X glauca</u>	90	Yes	OBL	
2. <u>Carex lacustris</u>	10	No	OBL	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
				100 =Total Cover
<u>Woody Vine Stratum</u> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				=Total Cover

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>100</u>	x 1 = <u>100</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>100</u> (B)
Prevalence Index = B/A = <u>1.00</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No

Remarks: (Include photo numbers here or on a separate sheet.)

ATTACHMENT 2
PHOTO LOG

Attachment 1 - Photograph Log

Client Name: City of Rochester		Site Location: West Side Genesee Shoreline Resiliency Improvements (MO-07 and MO-10) Project – Lower Genesee River, Rochester, NY	Project No. 1940100197
Photo No. 1	Date: 10/8/2020		
Description Looking south at W1 – small emergent wetland habitat at base of armored shoreline in southern portion of project area.			
Client Name: City of Rochester		Site Location: West Side Genesee Shoreline Resiliency Improvements (MO-07 and MO-10) Project – Lower Genesee River, Rochester, NY	Project No. 1940100197
Photo No. 2	Date: 10/8/2020		
Description Looking north at southern end of W2 in southern portion of project area – dominated by <i>Typha X glauca</i> .			

Client Name: City of Rochester	Site Location: West Side Genesee Shoreline Resiliency Improvements (MO-07 and MO-10) Project – Lower Genesee River, Rochester, NY	Project No. 1940100197
--	---	----------------------------------

Photo No. 3	Date: 10/8/2020
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Description
Looking north at W2 and dock with boat slips – transition from wetland to riverine/open water habitat of Genesee River occurs on boat slip side of dock.



Client Name: City of Rochester	Site Location: West Side Genesee Shoreline Resiliency Improvements (MO-07 and MO-10) Project – Lower Genesee River, Rochester, NY	Project No. 1940100197
--	---	----------------------------------

Photo No. 4	Date: 10/8/2020
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Description
Looking south at typical upland habitat west of W2 and Genesee River.



Client Name: City of Rochester		Site Location: West Side Genesee Shoreline Resiliency Improvements (MO-07 and MO-10) Project – Lower Genesee River, Rochester, NY	Project No. 1940100197
--	--	---	----------------------------------

Photo No. 5	Date: 10/8/2020
-----------------------	---------------------------

Description
Looking north at northern end of W2 and typical armored shoreline – W2 to right of armored shoreline and typical shrub and tree upland to left in photograph.



Client Name: City of Rochester		Site Location: West Side Genesee Shoreline Resiliency Improvements (MO-07 and MO-10) Project – Lower Genesee River, Rochester, NY	Project No. 1940100197
--	--	---	----------------------------------

Photo No. 6	Date: 10/8/2020
-----------------------	---------------------------

Description
Looking south at northern end of W2 and armored shoreline near Col. Patrick O'Rourke Memorial Bridge – sparse wetland vegetation predominantly invasion flowering rush (*Butomus umbellatus*).



Client Name: City of Rochester		Site Location: West Side Genesee Shoreline Resiliency Improvements (MO-07 and MO-10) Project – Lower Genesee River, Rochester, NY	Project No. 1940100197
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Photo No. 7	Date: 10/8/2020
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Description
Looking north at southern end of W3 and dock with boat slips – transition from wetland to riverine/open water habitat of Genesee River occurs between shore and dock.



Client Name: City of Rochester		Site Location: West Side Genesee Shoreline Resiliency Improvements (MO-07 and MO-10) Project – Lower Genesee River, Rochester, NY	Project No. 1940100197
--	--	---	----------------------------------

Photo No. 8	Date: 10/8/2020
-----------------------	---------------------------

Description
Looking north at northern end of W3 and armored shoreline.



Client Name: City of Rochester		Site Location: West Side Genesee Shoreline Resiliency Improvements (MO-07 and MO-10) Project – Lower Genesee River, Rochester, NY	Project No. 1940100197
--	--	---	----------------------------------

Photo No. 9	Date: 10/8/2020
-----------------------	---------------------------

Description
Looking north at developed shoreline and riverine/open water habitat towards northern end of project area.



Client Name: City of Rochester		Site Location: West Side Genesee Shoreline Resiliency Improvements (MO-07 and MO-10) Project – Lower Genesee River, Rochester, NY	Project No. 1940100197
--	--	---	----------------------------------

Photo No. 10	Date: 10/8/2020
------------------------	---------------------------

Description
Looking south at developed shoreline and riverine/open water habitat at northern end of project area.



APPENDIX B – GEOTECHNICAL EVALUATION



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

Project: West Side Genesee Shoreline Shoreline Resiliency
Improvements (MO-07 and MO-10)

Job Ref.
1940100197

Section:
Geotechnical Evaluation

Sheet no./rev.
1

Calc. by
MFN

Date
12/16/2020

Chk'd by
DDW

Date
1/25/2021

App'd by

Date

1. INTRODUCTION

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 as detailed in the Engineering Report (ER) dated February 14, 2020. A subsurface exploration was implemented, as recommended in the ER, to evaluate the subsurface conditions for the proper design and construction of the potential mitigating strategies.

2. GEOTECHNICAL INVESTIGATION

2.1. Regional Geology

The project location is situated within the Erie-Ontario Lowlands Province, according to the Physiographic Map of New York, produced by the New York State Geological Survey/New York State Museum. The Lowlands lie on the southern shore of Lake Erie and Lake Ontario and is composed of lake plains which were previously glacier-covered. The surficial geology is recent alluvial deposits. According to the State Education Department of the University of the State of New York, these alluvial deposits are composed of particles ranging in size from fine sand to gravel, sometimes overlain by silt. The project location is underlain by the Queenstone Formation, which is composed of shale and siltstone, with a depth up to 900 feet.

2.2. Subsurface Exploration and Testing

The subsurface conditions were evaluated based on an exploration program conducted from November 2 to November 10, 2020. A total of 8 borings were drilled by CME Associates, Inc. (CME), under subcontract to Ramboll, at the locations shown in the attachment. The boring termination depths ranged from 10 feet to about 90 feet below the existing ground surface.

The test borings were drilled using an ATV-mounted CME 550X drill rig equipped with hollow-stem augers (HSA). Standard Penetration Testing (SPT) was conducted at 2-foot depth intervals, continuously for the first 20 feet, then at 5 feet intervals thereafter to the selected termination depths. SPT consists of driving a 1 3/8-inch I.D., 2-inch O.D., split-barrel sampler with a 140-pound hammer, free falling a distance of 30 inches. The number of hammer blows required to drive the sampler 2 feet was recorded in intervals of 6 inches. The total number of hammer blows required to drive the sampler from 6 to 18 inches represents the SPT "N-value". The split-barrel sampling was conducted in accordance with ASTM 1586 "Standard Method for Penetration Test and Spilt Barrel Sampling of Soils". Soil samples recovered from split-barrel sampling and standard penetration testing were visually classified in general accordance with ASTM D-2488, "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)" and recorded on the field boring logs.

2.3. General Soil Profile

A general soil profile identifying the major strata encountered in the borings is provided below.

Fill: Encountered below the ground cover and extending to depths ranging from 1.5 feet to 8 feet. The fill consists of heterogeneous mixtures of gravel, sand, and silt. Cinders and wood fragments were also encountered in the fill. The soils primarily classify as moist, medium dense, silty sand with gravel (SM). The median N-value was approximately 13 blows per foot (bpf).

Alluvium: Encountered below the fill and ranged in thickness from 43 feet to 83 feet. The soils are primarily fine grained and classify as moist, soft, silty clay (CL-ML) and silt (ML). Trace organics were occasionally encountered in the stratum at varying depths. The median N-value was about 4 bpf.

Glacial Till: Encountered below the alluvium soils in the deeper borings (WGB -7 and WGB-8). The borings were terminated soon after encountering the till. The stratum primarily classifies as moist, very dense silt with gravel (ML). The median N-value was 60 bpf.



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

Project: West Side Genesee Shoreline Shoreline Resiliency
Improvements (MO-07 and MO-10)

Job Ref.
1940100197

Section:
Geotechnical Evaluation

Sheet no./rev.
2

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MFN

Date
12/16/2020

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DDW

Date
1/25/2021

App'd by

Date

2.4. Laboratory Testing Summary

Selected soil samples were obtained from the borings to be tested for grain-size analysis (ASTM D422/D6913), Atterberg Limits (ASTM D4318), and natural moisture contents (ASTM D2216). The grain-size analysis and Atterberg Limits testing was performed to establish the Unified Soil Classification System (USCS) designation for the soil and to provide information regarding soil behavior, useful to establish soil parameters for foundation design.

The soil laboratory test data results are included in the attached CME Data Report.

2.5. Groundwater Conditions

Measurements of water levels during drilling are shown on the attached boring logs. Water level measurements in the borings generally ranged from about 5 feet to 11 feet below the existing ground surface.

3. GEOTECHNICAL DESIGN EVALUATION

3.1. Design Parameters

Various methods are available for estimating soil strength parameters, including laboratory test results, in-situ testing, prior experience, and published information on similar soil types. The soils were generally assigned strength parameters based on published correlations with lower bound SPT N-values (relative density) and soil classifications. The design soil parameters for the existing soils and proposed fills provided in the table below are recommended for the project.

Table 1. Design Soil Parameters

	Existing Fill	Alluvium
Saturated Unit Weight, γ_{sat} (pcf)	125	115
ϕ' (°)	33	26
c' (psf)	0	0
Allowable Bearing Capacity, q_a (psf)	3,000	N/A
<u>Lateral Earth Pressures</u>		
Active, K_a	0.29	N/A
Passive, K_p	3.4	N/A
At-Rest, K_o	0.46	N/A
Modulus of Subgrade Reaction, k_s (pci)	100	N/A

The improvements will require deep foundations (piles) to provide adequate support to new structural elements and keep settlement of the structures within allowable ranges. Based on the subsurface data, driven piles will gain most of their capacity from skin friction. In granular soils, such as those of the fill, the skin friction on piles is a function of the lateral earth pressure acting on the pile times the average effective overburden pressure (q_{avg}) at segmental depths along the length of the pile. An ultimate skin friction of $0.5x q_{avg}$ (ksf) is recommended for the fill material.

The skin friction on piles in fine-grained soils is a function of the cohesion of the soil. A cohesion of 400 psf is recommended for the alluvium soils.

The following properties are recommended for the lateral analysis of the piles:



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3

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Date
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Date
1/25/2021

App'd by

Date

Stratum	Existing Fill	Alluvium
Horizontal Soil Modulus (k)	100 pci	50 pci
Strain @50% of Failure Stress (E_{50})	0.01	0.05

3.2. Sheet Pile Analysis

The proposed remediation along the northern end of the project includes sheet pile flood walls with a crest elevation at 253 +/- . The proposed sheet pile wall was analyzed with Shoring Suite (version 8). Shoring Suite is a well-established software package based on Federal Highway Administration (FHWA) methods, the US Navy DM-7 (NAVFAC) manual, the Steel Sheet Pile Design manual (USS), and the Trenching and Shoring Manual of the California Department of Transportation. The program links to EarthPres and Surcharge modules so that the data from these two programs can be directly imported into Shoring. The soil parameters for the analyses were based on the correlations provided in the program for the inputted SPT N-values and soil classifications.

The following sheet piles are recommend based on the analysis:

- PZ-22 Sheet Pile or Equiv.
- 15-foot long sheets, minimum.



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

Project: West Side Genesee Shoreline Shoreline Resiliency
Improvements (MO-07 and MO-10)

Job Ref.
1940100197

Section:
Subsurface Investigation

Sheet no./rev.
1

Calc. by
MFN

Date
1/17/2021

Chk'd by

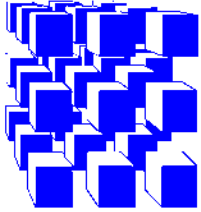
Date

App'd by

Date

DESCRIPTION

- Soil Exploration Data Report by CME Associates, Inc. (under contract to Ramboll); Test Borings (8 total) drilled from November 2 to November 10, 2020, boring location plan, and laboratory test data.



CME
Associates, Inc.

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

Transmittal

January 25, 2021

Ramboll
333 West Washington Street
Syracuse, New York 13202

Attn: Mr. Rick Duff, Project Manager

Re: West Side Genesee River REDI Project
Rochester, New York
CME Project No.: 27719-05

Gentlepeople:

Enclosed you will find....

Number of Copies

1

Report Number/Description

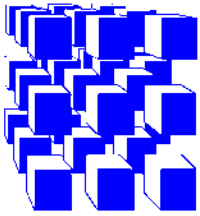
27719B-01-0121/Subsurface
Exploration Data Report

This report was emailed to Mr. Rick Duff at Rick.Duff@ramboll.com and Mr. D. Dreher Whetstone, P.E., Project Manager at Dreher.Whetstone@ramboll.com on 01/25/21.

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

January 25, 2021

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
West Side Genesee River REDI Project
Rochester, New York
Report No.: 27719B-01-0121
Page 1 of 2

1.0 INTRODUCTION

CME Associates, Inc. (CME) was authorized by Ramboll (Client) to provide subsurface exploration services for the subject project. CME advanced eight (8) Test Borings at the project site between November 2 and 10, 2020.

The Scope of Basic Services and this report have been provided pursuant to Client Purchase Order No. 1940001642, dated October 15, 2020 and amended on January 12, 2021. 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 2A and 2B). 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 2 and 10, 2020, eight (8) Test Borings (I.D. Nos. WAB-1, WCB-2, WDB-3, WEB-4, WF1B-4, WF2B-6, WGB-7, and WGB-8) were advanced using a CME 550X, ATV-mounted, rotary exploration drill rig, equipped with 3-1/4" I.D. hollow stem augers and drive sampling tools. Two planned exploration locations (I.D. Nos. WF2B-5 and WGB-9) 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 Geologist, Nicholas Smith, P.G. The visual soil classifications were made using a modified Burmister

A New York State Certified Woman-Owned Business Enterprise (WBE)

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 WAB-1, WCB-2, WDB-3, WEB-4, WF1B-4, WF2B-6, WGB-7, and WGB-8 are attached.

Following visual classification of the soil samples, the Subsurface Exploration Logs were provided to Client for review and selection of sample depths to be analyzed for natural moisture content (ASTM method D2216), Atterberg Limits (ASTM method D4318), or particle size analysis (ASTM method D422). All laboratory testing was conducted in CME's East Syracuse AASHTO re:source¹ Accredited Laboratory, and results are presented in the attached Laboratory Test Summary Report, labeled CME Report Number 27719L-01-0121.

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.

A handwritten signature in blue ink, appearing to read "Nicholas A. Smith".

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

Attachment Listing:

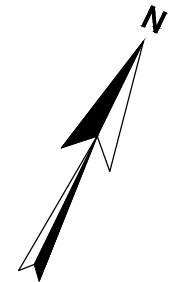
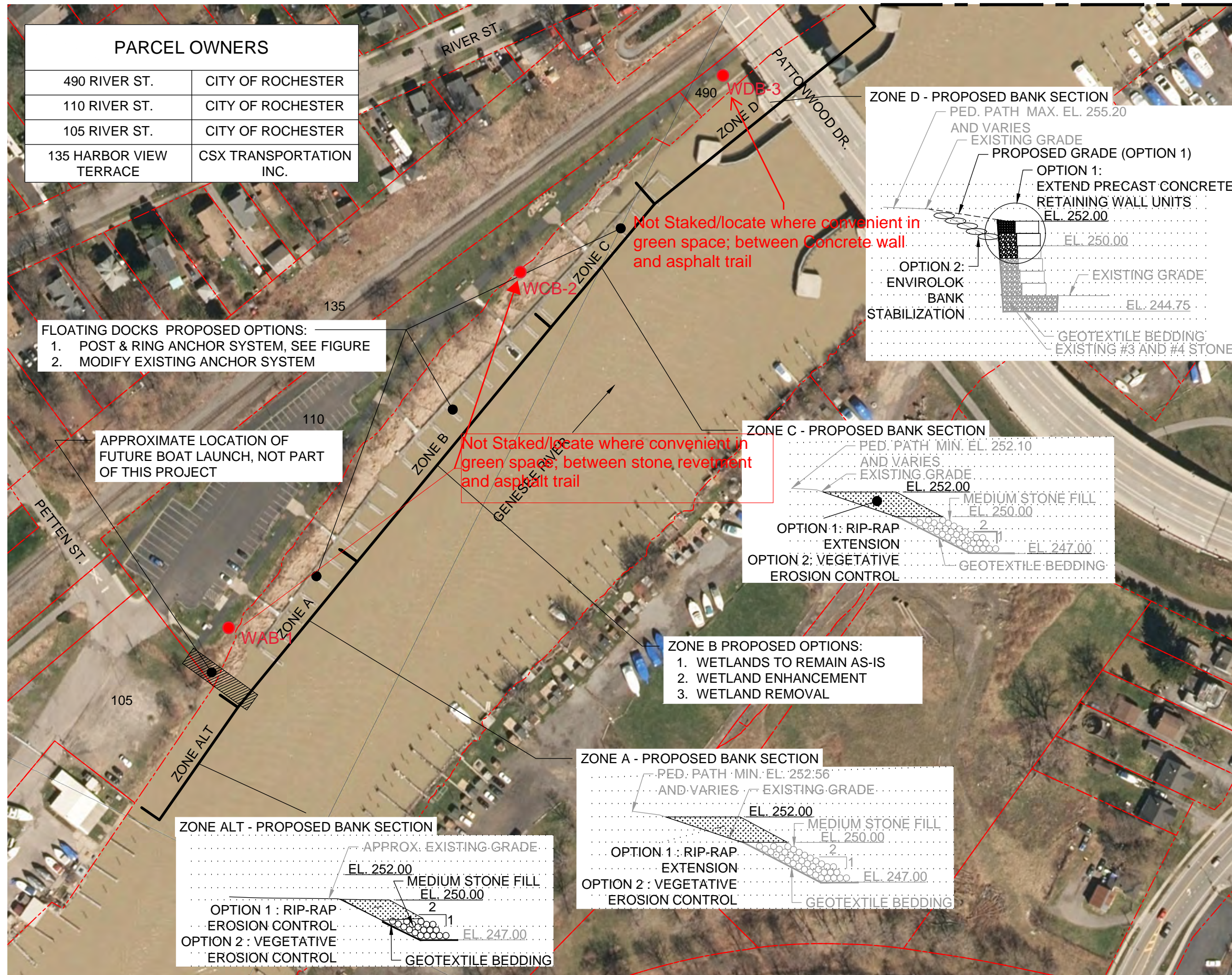
- Client Provided Figures 2A and 2B: Proposed Improvement Alternatives (2 of 2)
- CME Exploration Location Plan ELP-1 (1 of 1)
- Subsurface Exploration Logs, WAB-1, WCB-2, WDB-3, WEB-4, WF1B-4, WF2B-6, WGB-7, and WGB-8 (13 of 13)
- General Information & Key to Test Boring Logs* (4 of 4)
- Laboratory Test Summary, CME Report Number 27719L-01-0121 (4 of 4)

¹ **AASHTO re:source** – American Association of State Highway & Transportation Officials (AASHTO) Materials Reference Laboratory, a Federal Agency having jurisdiction to assess laboratory competency according to the Standards of the United States of America. CME East Syracuse accreditation includes testing of Portland Cement Concrete, Aggregate and Soil Materials. www.AASHTOresource.org.

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MATCH LINE - SEE FIGURE NO. 2B

PARCEL OWNERS	
490 RIVER ST.	CITY OF ROCHESTER
110 RIVER ST.	CITY OF ROCHESTER
105 RIVER ST.	CITY OF ROCHESTER
135 HARBOR VIEW TERRACE	CSX TRANSPORTATION INC.



LEGEND

- SITE FEATURE
- TAX PARCEL
- PARCEL ADDRESS
- PROJECT ZONE
- Proposed 10ft Boring

NEW YORK STATE
OFFICE OF GENERAL SERVICES
WEST SIDE OF GENESEE RIVER
IMPROVEMENTS
ROCHESTER, NY

PROPOSED IMPROVEMENT
ALTERNATIVES

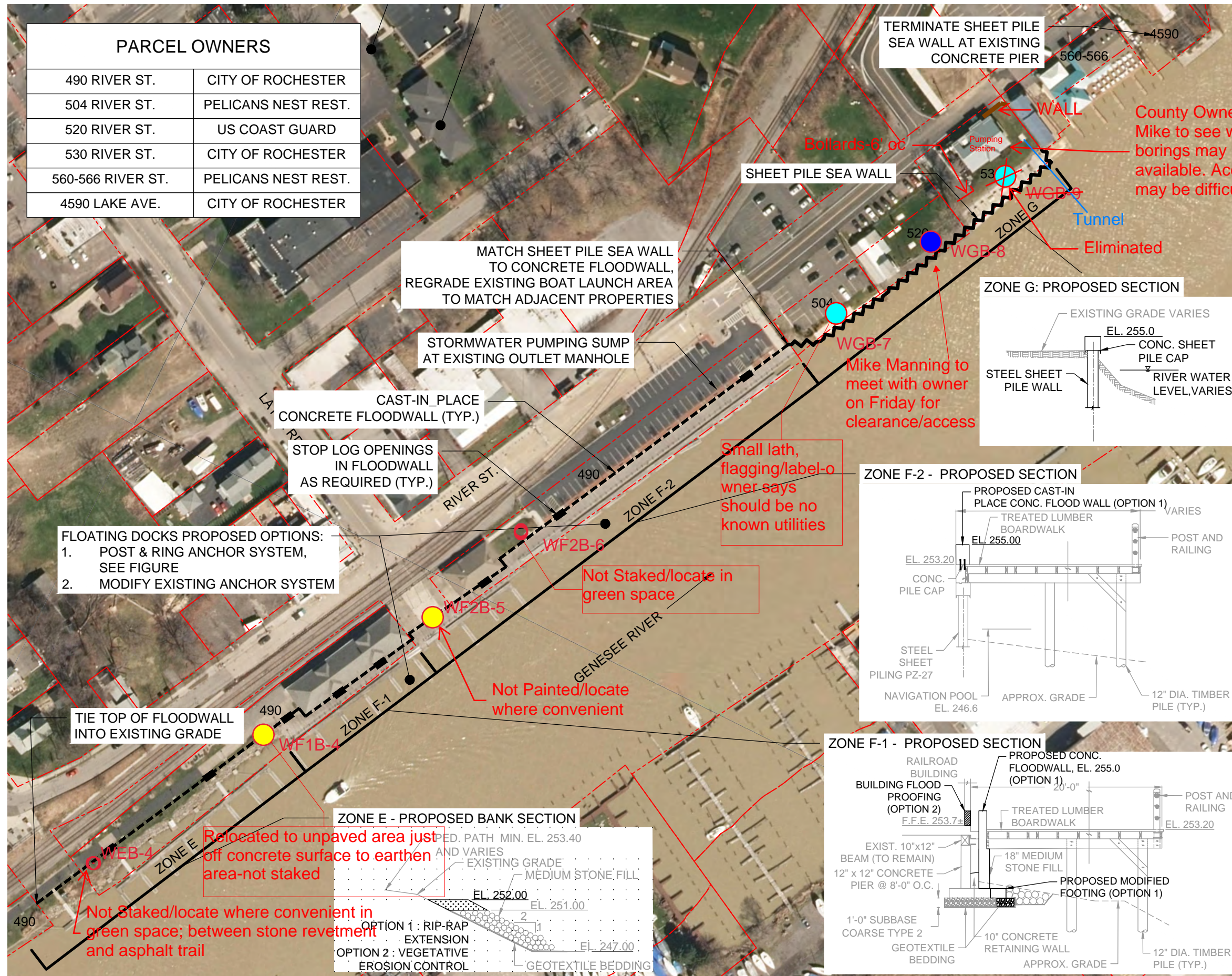


FILE NO. 2039.73070-FIG2A
FEBRUARY 2020

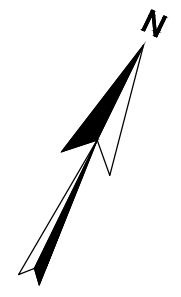
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A RAMBOLL COMPANY



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PARCEL OWNERS	
490 RIVER ST.	CITY OF ROCHESTER
504 RIVER ST.	PELICANS NEST REST.
520 RIVER ST.	US COAST GUARD
530 RIVER ST.	CITY OF ROCHESTER
560-566 RIVER ST.	PELICANS NEST REST.
4590 LAKE AVE.	CITY OF ROCHESTER

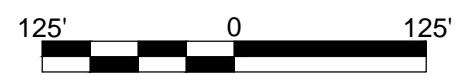


LEGEND

- SITE FEATURE
- TAX PARCEL
- PARCEL ADDRESS
- PROJECT ZONE
- Proposed 10 ft boring
- Proposed 20 ft boring
- Proposed 30 ft boring
- Proposed 50 ft boring

NEW YORK STATE
OFFICE OF GENERAL SERVICES
WEST SIDE OF GENESEE RIVER
IMPROVEMENTS
ROCHESTER, NY

PROPOSED IMPROVEMENT ALTERNATIVES



FILE NO. 2039.73070-FIG2B
FEBRUARY 2020

O'BRIEN & GERE ENGINEERS, INC
A RAMBOLL COMPANY



MATCH LINE - SEE FIGURE NO. 2A

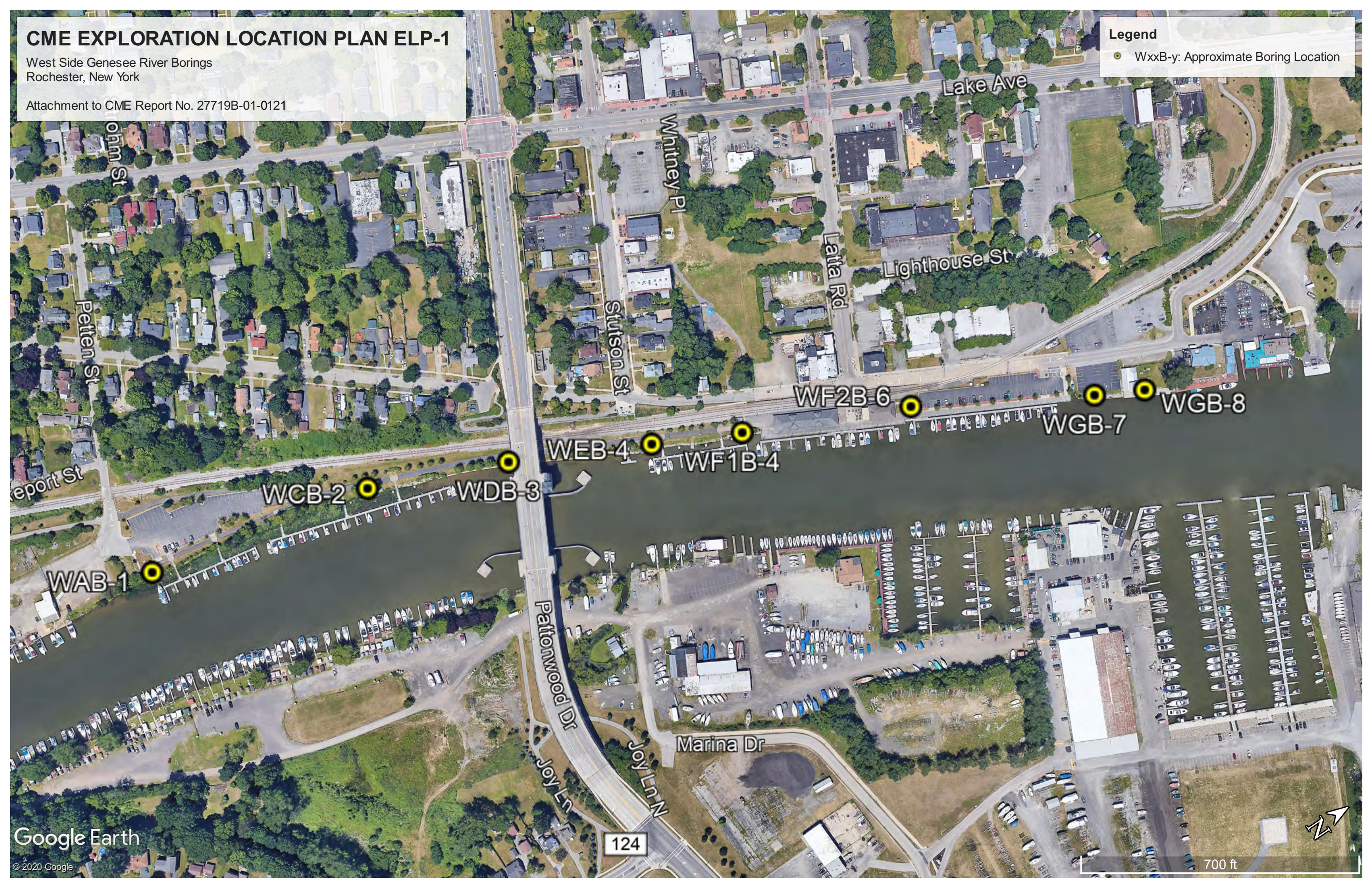
CME EXPLORATION LOCATION PLAN ELP-1

West Side Genesee River Borings
Rochester, New York

Attachment to CME Report No. 27719B-01-0121

Legend

● WxxB-y: Approximate Boring Location





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**SUBSURFACE EXPLORATION
 TEST BORING LOG**

Boring No. WAB-1
Page No. 1 of 1
Report No. 27719B-01-0121

Project Name: West Side Genesee River Borings, Rochester, New York
Client: Ramboll
Location: See Exploration Location Plan ELP-1

Date Started: 11/06/20
Date Finished: 11/06/20
Surface Elev.:

METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS			
Driller:	Beau Fletcher	Casing:	3/4" ID H.S.A.	Date	Time	Depth (Ft.)	Casing At (Ft.)
Driller:	Ryan Casatelli	Casing Hammer:		11/06/20	While Drilling	6.2'	8.0'
Inspector:		Other:		11/06/20	Before Casing Removed	6.2'	10.0'
Drill Rig:	CME 550X	Soil Sampler:	2" OD Split Barrel	11/06/20	After Casing Removed	6.2'	out
Type:	ATV Mounted	Hammer Wt:	140 lbs.	11/06/20	After Casing Removed	caved @ 7.0'	out
Rod Size:	AWJ	Hammer Fall:	30 in.				

LOG OF BORING SAMPLES					VISUAL CLASSIFICATION OF MATERIAL				
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine		SPT "N" or RQD %
		From	To				and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%		
0	1	0.0	2.0	SS/21	4-7-11-16		Miscellaneous FILL; Brown silt, cmf sand, mf gravel, brick, organic material (moist) <i>See remark 1</i>		18
1									
2	2	2.0	4.0	SS/22	16-20-14-18		Miscellaneous FILL; Light/Dark Brown/Black cmf sand, silt, cinders, ash (moist)		34
3									
4	3	4.0	6.0	SS/20	8-6-2-2		Miscellaneous FILL; Grey/Dark Grey cmf sand, mf gravel, silt, coal, cinders, ash (moist)		8
5						6.0			
6	4	6.0	8.0	SS/12	8-6-5-3		Grey cmf SAND, little SILT, trace ORGANIC MATERIAL (wet, medium compact)		11
7									
8	5	8.0	10.0	SS/12	1-1-2-2		Grey cmf SAND and SILT, trace ORGANIC MATERIAL (wet, very loose)		3
9									
10							Bottom of Boring @ 10.0'		
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

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.	WCB-2
Page No.	1 of 1
Report No.	27719B-01-0121

Project Name:	West Side Genesee River Borings, 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				GROUNDWATER OBSERVATIONS			
Driller:	Beau Fletcher	Casing:	3 1/4" ID H.S.A.	Date	Time	Depth (Ft.)	Casing At (Ft.)
Driller:	Ryan Casatelli	Casing Hammer:		11/06/20	While Drilling	5.2'	8.0'
Inspector:		Other:		11/06/20	Before Casing Removed	5.2'	10.0'
Drill Rig:	CME 550X	Soil Sampler:	2" OD Split Barrel	11/06/20	After Casing Removed	None Noted	out
Type:	ATV Mounted	Hammer Wt:	140 lbs.	11/06/20	After Casing Removed	caved @ 2.8'	out
Rod Size:	AWJ	Hammer Fall:	30 in.				

LOG OF BORING SAMPLES					VISUAL CLASSIFICATION OF MATERIAL				
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine		SPT "N" or RQD %
		From	To				and - 35 to 50% / some - 20 to 35%	little - 10 to 20% / trace - 0 to 10%	
0	1	0.0	2.0	SS/22	3-6-5-6		Miscellaneous FILL; Dark Brown cmf sand, silt, cmf gravel, cinders, organic material (moist) <i>See remark 1</i>		11
1						2.0			
2	2	2.0	4.0	SS/19	3-3-3-2		Brown/Grey mottled mf SAND, some SILT, trace ORGANIC MATERIAL (moist, loose) <i>Possible fill or reworked material</i>		6
3									
4	3	4.0	6.0	SS/18	1-1-2-2		Grey SILT, little mf SAND, trace woody ORGANIC MATERIAL (wet, soft)		3
5									
6	4	6.0	8.0	SS/18	WH-2-4-3		Grey SILT, little cmf GRAVEL, little cmf SAND (wet, medium stiff)		6
7									
8	5	8.0	10.0	SS/19	WH-2-2-2		Grey SILT, little mf SAND, trace ORGANIC MATERIAL (Wood), trace SHELLS (moist, loose)		4
9									
10							Bottom of Boring @ 10.0'		
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

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.	WDB-3
Page No.	1 of 1
Report No.	27719B-01-0121

Project Name:	West Side Genesee River Borings, Rochester, New York	Date Started	11/10/20
Client:	Ramboll	Date Finished	11/10/20
Location:	See Exploration Location Plan ELP-1	Surface Elev.	

METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS			
Driller:	Beau Fletcher	Casing:	3/4" ID H.S.A.	Date	Time	Depth (Ft.)	Casing At (Ft.)
Driller:	Ryan Casatelli	Casing Hammer:		11/10/20	While Drilling	None Noted	8.0'
Inspector:		Other:		11/10/20	Before Casing Removed	None Noted	10.0'
Drill Rig:	CME 550X	Soil Sampler:	2" OD Split Barrel	11/10/20	After Casing Removed	None Noted	out
Type:	ATV Mounted	Hammer Wt:	140 lbs.	11/10/20	After Casing Removed	caved @ 3.0'	out
Rod Size:	AWJ	Hammer Fall:	30 in.				

LOG OF BORING SAMPLES						VISUAL CLASSIFICATION OF MATERIAL			
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine		SPT "N" or RQD %
		From	To				and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%		
0	1A	0.0	0.5	SS/14	2-4-4-5	0.5	Topsoil and Organic Material (moist)		8
1	1B	0.5	2.0				Miscellaneous FILL; Brown/Grey concrete, cmf gravel, cmf sand, silt (moist)		
2	2	2.0	4.0	SS/15	4-3-3-4		Brown SILT, little fine SAND, trace ORGANIC MATERIAL (moist, medium stiff) <i>Possible fill or reworked material</i>		6
3									
4	3	4.0	6.0	SS/15	4-3-3-4		Similar as above (moist, medium stiff)		6
5									
6	4	6.0	8.0	SS/16	4-3-3-4		Grey SILT and CLAY, trace fine SAND (moist, medium stiff)		6
7									
8	5	8.0	10.0	SS/16	3-3-3-3		Grey CLAY, some SILT, trace fine SAND (moist, medium stiff)		6
9									
10							Bottom of Boring @ 10.0'		
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

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

Remarks:



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 Phone: 315-701-0522

**SUBSURFACE EXPLORATION
 TEST BORING LOG**

Boring No.	WEB-4
Page No.	1 of 1
Report No.	27719B-01-0121
Date Started	11/10/20
Date Finished	11/10/20
Surface Elev.	

Project Name:	West Side Genesee River Borings, Rochester, New York
Client:	Ramboll
Location:	See Exploration Location Plan ELP-1

METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS			
Driller:	Beau Fletcher	Casing:	3/4" ID H.S.A.	Date	Time	Depth (Ft.)	Casing At (Ft.)
Driller:	Ryan Casatelli	Casing Hammer:		11/10/20	While Drilling	None Noted	8.0'
Inspector:		Other:		11/10/20	Before Casing Removed	None Noted	10.0'
Drill Rig:	CME 550X	Soil Sampler:	2" OD Split Barrel	11/10/20	After Casing Removed	None Noted	out
Type:	ATV Mounted	Hammer Wt:	140 lbs.	11/10/20	After Casing Removed	caved @ 3.0'	out
Rod Size:	AWJ	Hammer Fall:	30 in.				

LOG OF BORING SAMPLES					VISUAL CLASSIFICATION OF MATERIAL				
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine		SPT "N" or RQD %
		From	To				and - 35 to 50% / some - 20 to 35%	little - 10 to 20% / trace - 0 to 10%	
0	1	0.0	2.0	SS/18	3-12-7-9		Miscellaneous FILL; Brown silt, brick, mf gravel, cmf sand, organic material (moist) <i>See remark 1</i>		19
1							-----		
2	2	2.0	4.0	SS/14	3-5-5-7		FILL; Brown/Grey mottled silt, clay, mf sand (moist) <i>Reworked material</i>		10
3									
4	3A	4.0	5.0	SS/16	2-5-7-6		Similar as above (moist)		12
5	3B	5.0	6.0				-----		
6	4	6.0	8.0	SS/23	10-12-10-7		Grey cmf SAND, trace SILT, trace ORGANIC MATERIAL (moist)		22
7									
8	5	8.0	10.0	SS/22	3-5-3-7		Grey cmf SAND, trace fine GRAVEL, trace SILT (wet, loose)		8
9									
10							Bottom of Boring @ 10.0'		
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

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.	WF1B-4
Page No.	1 of 1
Report No.	27719B-01-0121
Date Started	11/10/20
Date Finished	11/10/20
Surface Elev.	

Project Name: West Side Genesee River Borings, Rochester, New York
Client: Ramboll
Location: See Exploration Location Plan ELP-1

METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS			
Driller:	Beau Fletcher	Casing:	3/4" ID H.S.A.	Date	Time	Depth (Ft.)	Casing At (Ft.)
Driller:	Ryan Casatelli	Casing Hammer:		11/10/20	While Drilling	None Noted	18.0'
Inspector:		Other:		11/10/20	Before Casing Removed	None Noted	20.0'
Drill Rig:	CME 550X	Soil Sampler:	2" OD Split Barrel	11/10/20	After Casing Removed	None Noted	out
Type:	ATV Mounted	Hammer Wt:	140 lbs.	11/10/20	After Casing Removed	caved @ 4.0'	out
Rod Size:	AWJ	Hammer Fall:	30 in.				

LOG OF BORING SAMPLES						VISUAL CLASSIFICATION OF MATERIAL			
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine		SPT "N" or RQD %
		From	To				and - 35 to 50% / some - 20 to 35%	little - 10 to 20% / trace - 0 to 10%	
0	1	0.0	2.0	SS/15	1-5-27-9		Miscellaneous FILL; Dark Brown silt, mf gravel, cmf sand, concrete, coal, cinders, ash, organic material (moist)		32
1									
2	2	2.0	4.0	SS/14	6-5-4-5		Miscellaneous FILL; Brown/Grey silt, cmf gravel, concrete, cmf sand, cinders, ash, organic material (moist)		9
3									
4	3	4.0	6.0	SS/4	7-9-8-5		FILL; Dark Brown cmf sand, silt, organic material (moist) <i>Low recovery, rip rap present at this interval</i>		17
5									
6	4	6.0	8.0	SS/9	1-4-8-2		Grey cmf SAND, little coarse SILT, little cmf GRAVEL, trace ORGANIC MATERIAL (moist, medium compact) <i>Possible fill or reworked material</i>		12
7									
8	5	8.0	10.0	SS/17	7-2-2-2		Grey SILT, little CLAY, little mf SAND, trace ORGANIC MATERIAL (moist, medium stiff)		4
9									
10	6	10.0	12.0	SS/24	2-2-2-2		Similar as above (moist, medium stiff)		4
11									
12	7	12.0	14.0	SS/24	1-1-2-2		Grey/Brown SILT, little mf SAND, trace CLAY, trace ORGANIC MATERIAL (moist, soft)		3
13						14.0			
14	8	14.0	16.0	SS/18	WH-WH-1-2		Grey cmf SAND, little SILT (wet, very loose)		1
15									
16	9	16.0	18.0	SS/24	1-2-1-2		Similar as above (wet, very loose)		3
17									
18	10	18.0	20.0	SS/23	3-2-3-3		Grey/Brown cmf SAND, little SILT, trace mf GRAVEL (wet, loose)		5
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:



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**SUBSURFACE EXPLORATION
 TEST BORING LOG**

Boring No.	WF2B-6
Page No.	1 of 1
Report No.	27719B-01-0121

Project Name:	West Side Genesee River Borings, Rochester, New York	Date Started	11/10/20
Client:	Ramboll	Date Finished	11/10/20
Location:	See Exploration Location Plan ELP-1	Surface Elev.	

METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS			
Driller:	Beau Fletcher	Casing:	3 1/4" ID H.S.A.	Date	Time	Depth (Ft.)	Casing At (Ft.)
Driller:	Ryan Casatelli	Casing Hammer:		11/10/20	While Drilling	None Noted	8.0'
Inspector:		Other:		11/10/20	Before Casing Removed	None Noted	10.0'
Drill Rig:	CME 550X	Soil Sampler:	2" OD Split Barrel	11/10/20	After Casing Removed	None Noted	out
Type:	ATV Mounted	Hammer Wt:	140 lbs.	11/10/20	After Casing Removed	caved @ 6.2'	out
Rod Size:	AWJ	Hammer Fall:	30 in.				

LOG OF BORING SAMPLES						VISUAL CLASSIFICATION OF MATERIAL			
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine		SPT "N" or RQD %
		From	To				and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%		
0	1A	0.0	0.5	SS/22	4-11-25-17	0.5	Topsoil and Organic Material (moist)		36
1	1B	0.5	2.0				Miscellaneous FILL; Black silt, cmf gravel, cmf sand, coal, cinders, ash (moist)		
2	2	2.0	4.0	SS/2	14-14-9-9		Miscellaneous FILL; Black/Brown silt, cmf sand, mf gravel, cinders (moist)		23
3							-----		
4	3	4.0	6.0	SS/22	4-5-6-4		Brown/Grey mottled SILT, little fine SAND (moist, stiff)		11
5									
6	4	6.0	8.0	SS/16	3-4-5-4		Grey/Brown, Similar as above (wet, stiff)		9
7									
8	5	8.0	10.0	SS/18	2-2-3-3		Grey SILT, some CLAY, trace fine SAND, trace ORGANIC MATERIAL (wet, medium stiff)		5
9									
10							Bottom of Boring @ 10.0'		
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

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

Remarks:



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**SUBSURFACE EXPLORATION
 TEST BORING LOG**

Boring No.	WGB-7
Page No.	1 of 3
Report No.	27719B-01-0121

Project Name:	West Side Genesee River Borings, Rochester, New York	Date Started	11/02/20
Client:	Ramboll	Date Finished	11/02/20
Location:	See Exploration Location Plan ELP-1	Surface Elev.	

METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS			
Driller:	Beau Fletcher	Casing:	3/4" ID H.S.A.	Date	Time	Depth (Ft.)	Casing At (Ft.)
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.	11/02/20	While Drilling	4.9'	4.0'
				11/02/20	Before Casing Removed	11.1'	58.6'
				11/02/20	After Casing Removed	6.0'	out
				11/02/20	After Casing Removed	caved @ 51.0'	out

LOG OF BORING SAMPLES						VISUAL CLASSIFICATION OF MATERIAL				
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		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 %
		From	To							
0	1	0.0	0.2	SS/12	6-7-6	0.2	Asphalt		13	
1		0.5	2.0				Miscellaneous FILL; Brown/Black cmf sand, cmf gravel, silt, brick cinders (moist)			
2	2	2.0	4.0	SS/15	3-3-7-6		Miscellaneous FILL; Black/Grey/Red silt, brick, wood (timbers), cmf sand, silt (moist)		10	
3										
4	3A 3B	4.0	4.5	SS/12	13-3-3-3		Miscellaneous FILL; Dark Grey wood (timber) (moist)		6	
5		4.5	6.0				FILL; Grey/Brown silt, clay, cmf sand, organic material (moist)			
6	4	6.0	8.0	SS/18	3-3-2-3		FILL; Grey/Brown silt, clay, cmf sand, woody organic material (moist)		5	
7							<i>Reworked material</i>			
8	5	8.0	10.0	SS/0	WH-1-1-1		Grey SILT, some mf SAND, trace CLAY, trace ORGANIC MATERIAL (wet, soft)		2	
9							<i>See remark 1</i>			
10	6	10.0	12.0	SS/16	2-1-1-1		Grey SILT, some CLAY, some mf SAND, trace ORGANIC MATERIAL (wet, soft)		2	
11										
12	7	12.0	14.0	SS/12	WH-1-3-2		Grey/Dark Brown SILT, little CLAY, little woody ORGANIC MATERIAL, trace mf SAND (wet, medium stiff)		4	
13										
14	8	14.0	16.0	SS/6	1-3-2-2		Grey SILT, little mf SAND, little CLAY, trace ORGANIC MATERIAL (wet, medium stiff)		5	
15										
16	9	16.0	18.0	SS/24	WH-WH-3-2		Similar as above (moist)		3	
17										
18	10	18.0	20.0	SS/20	WH-WH-WH-3		Grey SILT, little CLAY, trace mf SAND, trace woody ORGANIC MATERIAL (moist, very soft)		0	
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. No recovery with a 2" split spoon, therefore a 3" split spoon was utilized.



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**SUBSURFACE EXPLORATION
 TEST BORING LOG**

Boring No.	WGB-7
Page No.	2 of 3
Report No.	27719B-01-0121

LOG OF BORING SAMPLES					VISUAL CLASSIFICATION OF MATERIAL				
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		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 %
		From	To						
20							Continued from page 1		
21									
22									
23	11	23.5	25.0	SS/18	2-2-3			Similar as above (moist, medium stiff)	5
24									
25									
26									
27									
28	12	28.5	30.0	SS/18	WH-2-3			Similar as above (moist, medium stiff)	5
29									
30									
31									
32									
33	13	33.5	35.0	SS/18	3-2-3			Grey/Dark Brown SILT, little ORGANIC MATERIAL, trace mf SAND, trace CLAY (moist, medium stiff)	5
34									
35									
36									
37									
38	14	38.5	40.0	SS/18	WH-1-5			Dark Grey SILT, little mf SAND, trace CLAY (moist, medium stiff)	6
39									
40									
41									
42									
43	15	43.5	45.0	SS/12	WH-WH-2			Dark Grey SILT, little mf SAND, little CLAY, trace ORGANIC MATERIAL(wet, soft)	2
44									
45								Continued on page 3	

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

Remarks:



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**SUBSURFACE EXPLORATION
 TEST BORING LOG**

Boring No.	WGB-7
Page No.	3 of 3
Report No.	27719B-01-0121

LOG OF BORING SAMPLES					VISUAL CLASSIFICATION OF MATERIAL				
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		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 %
		From	To						
45							Continued from page 2		
46									
47									
48	16	48.5	50.0	SS/18	1-3-4			Brown/Red SILT, trace mf SAND, trace fine GRAVEL, trace ORGANIC MATERIAL (moist, medium stiff)	7
49									
50									
51									
52									
53	17	53.5	55.0	SS/18	35-20-25			Augered harder @ 52.5' Red/Brown SILT, little completely weathered ROCK FRAGMENTS (Shale), trace cmf SAND (moist, hard)	45
54									
55									
56									
57									
58	18	58.5	58.6	SS/1	100@1"			Similar as above (moist, hard) Bottom of Boring @ 58.6'	100+
59									
60									
61									
62									
63									
64									
65									
66									
67									
68									
69									
70									

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

Remarks:



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**SUBSURFACE EXPLORATION
 TEST BORING LOG**

Boring No. WGB-8
Page No. 1 of 4
Report No. 27719B-01-0121

Project Name: West Side Genesee River Borings, Rochester, New York
Client: Ramboll
Location: See Exploration Location Plan ELP-1

Date Started: 11/03/20
Date Finished: 11/03/20
Surface Elev.:

METHODS OF INVESTIGATION

GROUNDWATER OBSERVATIONS

Driller: Beau Fletcher	Casing: 3/4" ID H.S.A.	Date	Time	Depth (Ft.)	Casing At (Ft.)
Driller: Ryan Casatelli	Casing Hammer:	11/03/20	While Drilling	4.3'	4.0'
Inspector:	Other:	11/03/20	Before Casing Removed	52.0'	90.0'
Drill Rig: CME 550X	Soil Sampler: 2" OD Split Barrel	11/03/20	After Casing Removed	None Noted	out
Type: ATV Mounted	Hammer Wt: 140 lbs.	11/03/20	After Casing Removed	caved @ 21.4'	out
Rod Size: AWJ	Hammer Fall: 30 in.				

LOG OF BORING SAMPLES

VISUAL CLASSIFICATION OF MATERIAL

Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		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 %
		From	To						
0	1A	0.0	1.0	SS/16	2-2-4-6	1.0	Topsoil, cmf gravel and Organic Material (moist)		6
1	1B	1.0	2.0				FILL; Brown cmf sand, silt (moist)		
2	2	2.0	4.0	SS/15	22-20-11-13		FILL; Brown/Grey cmf gravel, cmf sand, silt (moist) <i>See remark 1</i>		31
3							-----		
4	3	4.0	6.0	SS/10	11-20-6-6		Miscellaneous FILL; Brown/Black cmf sand, wood, brick, silt (moist) <i>See remark 1</i>		26
5							-----		
6	4	6.0	8.0	SS/12	1-2-2-2		Grey SILT, little CLAY, little mf SAND (wet, medium stiff)		4
7							-----		
8	5	8.0	10.0	SS/8	WH-1-2-4		Grey cmf SAND, some SILT, trace mf GRAVEL, trace ORGANIC MATERIAL, trace SHELLS (wet, very loose)		3
9							-----		
10	6	10.0	12.0	SS/9	1-2-1-1		Grey/Brown SILT, little CLAY, trace cmf SAND, trace woody ORGANIC MATERIAL (wet, soft)		3
11							-----		
12	7	12.0	14.0	SS/15	2-2-1-2		Grey CLAY, some SILT, little mf SAND, trace ORGANIC MATERIAL (wet, soft)		3
13							-----		
14	8	14.0	16.0	SS/11	2-1-1-2		Similar as above (wet, soft)		2
15							-----		
16	9	16.0	18.0	SS/14	2-1-2-1		Grey SILT and CLAY, trace mf SAND, trace ORGANIC MATERIAL (wet, soft)		3
17							-----		
18	10	18.0	20.0	SS/23	WH-WH-WH-3		Grey CLAY, some SILT, trace mf SAND, trace ORGANIC MATERIAL (wet, very soft)		0
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.	WGB-8
Page No.	2 of 4
Report No.	27719B-01-0121

LOG OF BORING SAMPLES						VISUAL CLASSIFICATION OF MATERIAL			
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		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 %
		From	To						
20							Continued from page 2		
21									
22									
23									
24	11	23.5	25.0	SS/18	3-3-3		Grey CLAY, some SILT, little cmf SAND, trace cmf GRAVEL, trace woody ORGANIC MATERIAL (wet, medium stiff)		6
25	12	25.0	27.0	U/20	Shelby Tube		<i>Used 3" spoon to prepare hole for Shelby Tube sample</i> Grey CLAY and SILT, trace fine SAND, trace ORGANIC MATERIAL (moist)		
26									
27									
28									
29	13	28.5	30.0	SS/18	WH-3-2		Grey SILT, little mf SAND, trace CLAY, trace ORGANIC MATERIAL (moist, medium stiff)		5
30									
31									
32									
33									
34	14	33.5	35.0	SS/18	1-3-2		Grey/Dark Brown SILT, little mf SAND, trace ORGANIC MATERIAL, trace SHELLS (moist, medium stiff)		5
35									
36									
37									
38									
39	15	38.5	40.0	SS/18	2-2-2		Similar as above (moist, medium stiff)		4
40									
41									
42									
43									
44	16	43.5	45.0	SS/18	1-2-3		Grey/Brown SILT, little mf SAND, little CLAY, trace ORGANIC MATERIAL (moist, medium stiff)		5
45							Continued on page 3		

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

Remarks:



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**SUBSURFACE EXPLORATION
 TEST BORING LOG**

Boring No.	WGB-8
Page No.	3 of 4
Report No.	27719B-01-0121

LOG OF BORING SAMPLES					VISUAL CLASSIFICATION OF MATERIAL				
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		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 %
		From	To						
45							Continued from page 2		
46									
47									
48	17	48.5	50.0	SS/18	WH-WH-WH		Grey SILT, little mf SAND, trace CLAY, trace ORGANIC MATERIAL (moist, very soft)		0
49									
50									
51									
52									
53	18	53.5	55.0	SS/18	WH-WH-2		Grey SILT, little mf SAND, trace ORGANIC MATERIAL (moist, soft)		2
54									
55									
56									
57									
58	19	58.5	60.0	SS/18	2-3-3		Grey/Brown SILT, trace mf SAND, trace ORGANIC MATERIAL, trace SHELLS (moist, medium stiff)		6
59									
60									
61									
62									
63	20	63.5	65.0	SS/18	3-2-5		Similar as above (moist, medium stiff)		7
64									
65									
66									
67									
68	21	68.5	70.0	SS/18	3-3-3		Grey/Brown SILT, little cmf GRAVEL, little cmf SAND, trace ORGANIC MATERIAL (moist, medium stiff)		6
69									
70							Continued on page 4		

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

Remarks:



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**SUBSURFACE EXPLORATION
 TEST BORING LOG**

Boring No.	WGB-8
Page No.	4 of 4
Report No.	#REF!

LOG OF BORING SAMPLES					VISUAL CLASSIFICATION OF MATERIAL				
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		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 %
		From	To						
70							Continued from page 3		
71									
72									
73									
74	22	73.5	75.0	SS/18	3-3-5		Grey/Brown SILT, some cmf SAND, little cmf GRAVEL, trace ORGANIC MATERIAL (moist, stiff)		8
75									
76									
77									
78									
79	23A	78.5	79.7	SS/18	3-3-5		Grey SILT, some cmf SAND, trace ORGANIC MATERIAL (moist, stiff)		8
	23B	79.7	80.0				Red/Brown SILT, little cmf SAND, trace mf GRAVEL (moist, stiff)		
80									
81									
82									
83									
84	24	83.5	85.0	S/18	3-4-5		Red/Brown/Grey SILT, some cmf GRAVEL, little cmf SAND, trace CLAY (moist, stiff)		9
85									
86									
87									
88									
89	25	88.5	90.0	SS/18	9-50-34		Red/Brown SILT and highly weathered ROCK FRAGMENTS, little cmf SAND (moist, hard)		84
90							Bottom of Boring @ 90.0'		
91									
92									
93									
94									
95									

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 **Weight of Hammer + Rod** or **Weight of Rod**, 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			
TERM	PLASTICITY INDEX	DRY STRENGTH TEST	
		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 Scatched 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 Scatched distinctly by penknife or steel nail. Can't be peeled or scraped with knife.
	Hard Scatched with difficulty by penknife or steel nail. Requires more than one blow with a geologic hammer to break it
	Very Hard Cannot be scatched 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 less than 1/8 th inch
	Laminated 1/8 th to 1 inch
	Thinly Bedded 1 inch to 4 inches
	Medium Bedded 4 inches to 12 inches
	Thickly Bedded 12 inches to 48 inches
	Massive 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.

 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			GROUNDWATER OBSERVATIONS						
Driller: 10	Casing: 10	Date	Time	Depth (Ft.)	Casing At (Ft.)				
Driller:	Casing Hammer:		While Drilling	9	9				
Inspector:	Other:		Before Casing Removed						
Drill Rig:	Soil Sampler:		After Casing Removed						
Type:	Hammer Wt:		After Casing Removed						
Rod Size:	Hammer Fall:								
LOG OF BORING SAMPLES				VISUAL CLASSIFICATION OF MATERIAL					
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From 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:



LABORATORY TEST SUMMARY
West Side Genesee River Borings, Rochester, New York
Ramboll
CME Report No.: 27719L-01-0121
January 14, 2021
Page 1 of 4

CME Representatives obtained soil samples from Test Borings advanced as part of the Subsurface Exploration Program conducted for the subject project. Selected samples were delivered to CME's East Syracuse facility, an AASHTO re:source¹ accredited laboratory for various laboratory testing. The results are presented below:

Sample ID Notations: WGB - Test Boring, S - Sample

I. Natural Moisture Content (ASTM D2216)

Sample ID	Natural Moisture (%)
WGB-7; S-4	26.1
WGB-7; S-6	35.3
WGB-7; S-17	8.4
WGB-8; S-4	25.6
WGB-8; S-12	49.1

II. Atterberg Limits Testing (ASTM D4318)

Sample ID	Liquid Limit	Plastic Limit	Plasticity Index	Natural Moisture (%)
WGB-7; S-4	26	19	7	26.1
WGB-7; S-6	44	28	16	35.3
WGB-7; S-17	19	14	5	8.4
WGB-8; S-4	25	19	6	25.6
WGB-8; S-12	60	36	24	49.1

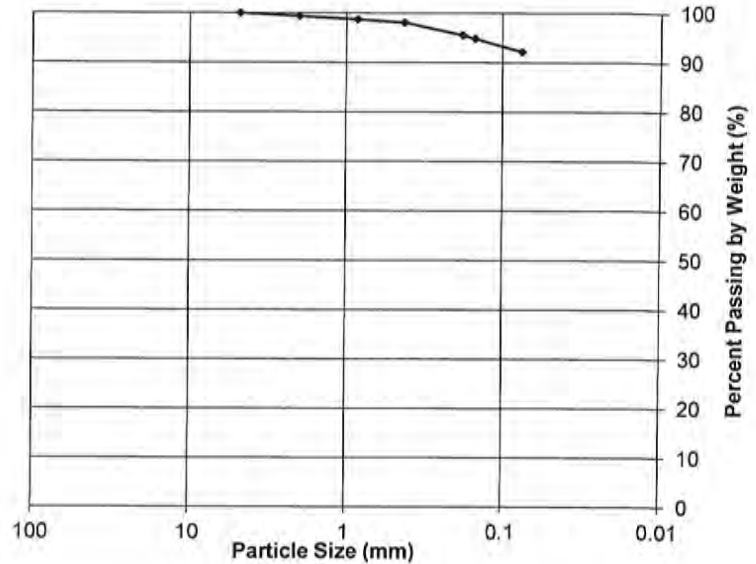
¹AASHTO re:source – American Association of State Highway & Transportation Officials (AASHTO) Materials Reference Laboratory, a Federal Agency having jurisdiction to assess laboratory competency according to the Standards of the United States of America. CME East Syracuse accreditation includes testing of Portland Cement Concrete, Aggregate and Soil Materials. www.AASHTOresource.org.

III. Particle Size Analysis (ASTM D422)

Sample #
 WGB-7; S-4

Classification
 Grey/Brown SILT, some CLAY, trace cmf SAND,
 trace ORGANIC MATERIAL*
Grain Size Distribution Curve

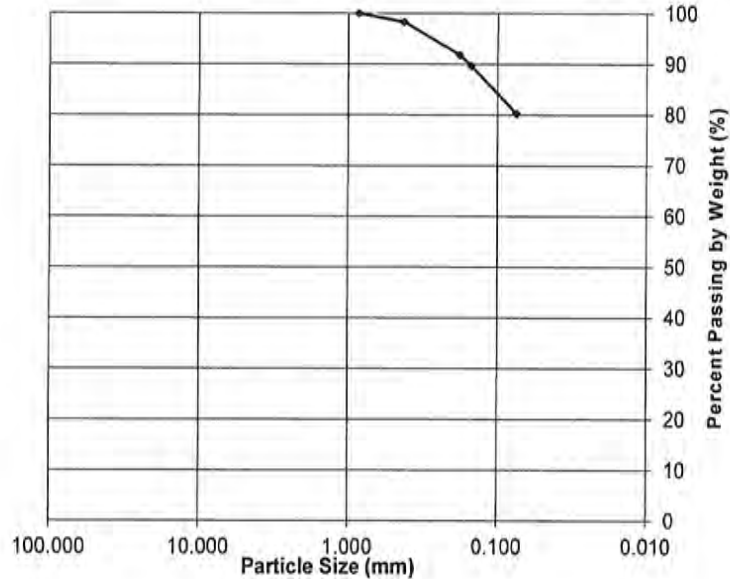
<u>Sieve Designation</u>	<u>Sieve Size (mm)</u>	<u>% Passing by Dry Weight</u>
No.4	4.75	100
No.10	2.00	99
No.20	0.850	99
No.40	0.425	98
No.80	0.180	95
No.100	0.150	95
No.200	0.075	92



Sample #
 WGB-7; S-6

Classification
 Grey SILT, some CLAY, some mf SAND,
 trace ORGANIC MATERIAL*
Grain Size Distribution Curve

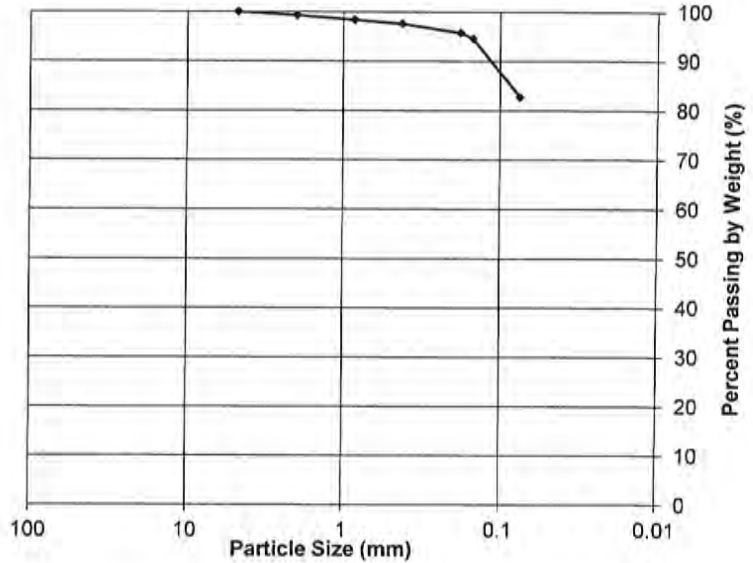
<u>Sieve Designation</u>	<u>Sieve Size (mm)</u>	<u>% Passing by Dry Weight</u>
No.20	0.850	100
No.40	0.425	98
No.80	0.180	92
No.100	0.150	90
No.200	0.075	80



Sample #
 WGB-7; S-17

Classification
 Red/Brown SILT, little weathered ROCK FRAGMENTS,
 trace cmf SAND*
Grain Size Distribution Curve

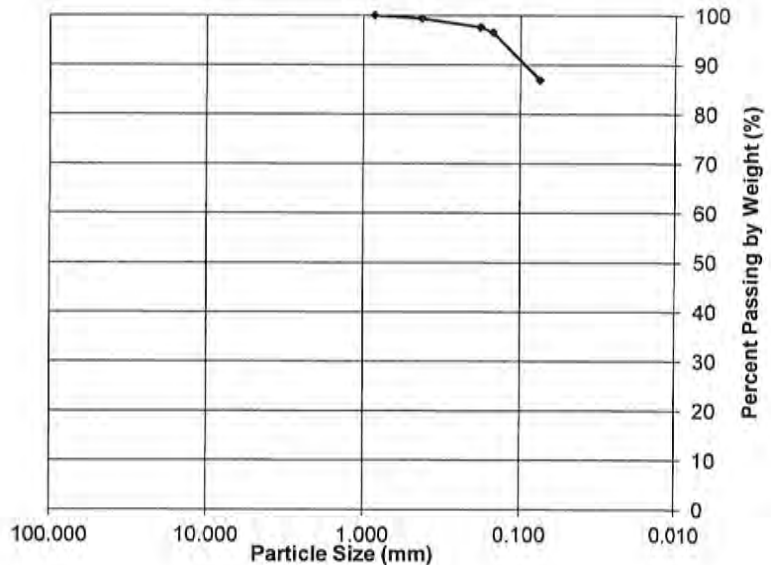
<u>Sieve Designation</u>	<u>Sieve Size (mm)</u>	<u>% Passing by Dry Weight</u>
No.4	4.75	100
No.10	2.00	99
No.20	0.850	98
No.40	0.425	98
No.80	0.180	96
No.100	0.150	95
No.200	0.075	83



Sample #
 WGB-8; S-4

Classification
 Grey SILT, little CLAY, little mf SAND*
Grain Size Distribution Curve

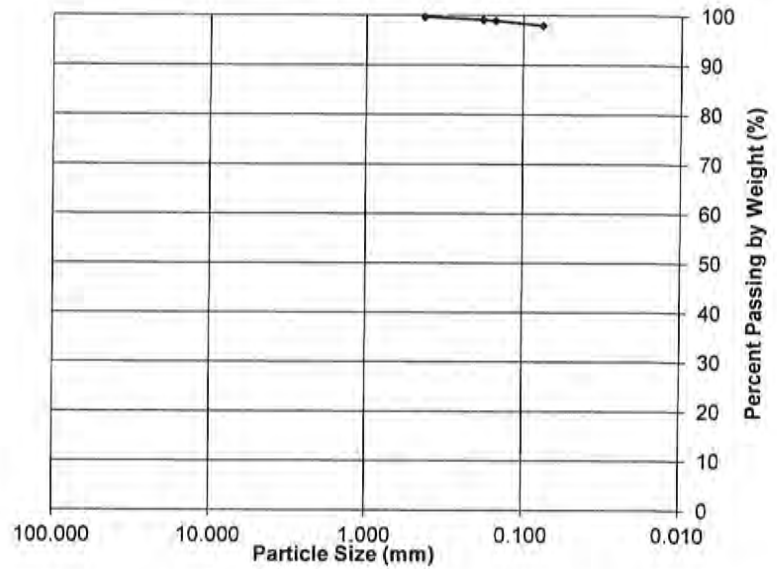
<u>Sieve Designation</u>	<u>Sieve Size (mm)</u>	<u>% Passing by Dry Weight</u>
No.20	0.850	100
No.40	0.425	99
No.80	0.180	98
No.100	0.150	97
No.200	0.075	87



Sample #
 WGB-8; S-12


Classification
 Grey CLAY and SILT, trace fine SAND,
 trace ORGANIC MATERIAL*
Grain Size Distribution Curve

<u>Sieve Designation</u>	<u>Sieve Size (mm)</u>	<u>% Passing by Dry Weight</u>
No.40	0.425	100
No.80	0.180	99
No.100	0.150	99
No.200	0.075	98



*No hydrometer test conducted to determine clay content. Classification is based on visual examination and estimation of silt and clay contents.

If you have any questions regarding this report please contact our office.


 Kelly Teeter
 Laboratory Supervisor



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

Project: West Side Genesee Shoreline Shoreline Resiliency
Improvements (MO-07 and MO-10)

Job Ref.
1940100197

Section:
Sheet Pile Analysis

Sheet no./rev.
1

Calc. by
MFN

Date
1/14/2021

Chk'd by

Date

App'd by

Date

DESCRIPTION

- Sheet pile analysis of proposed Sea Wall @ Zone G (Boring WGB-7)

RESULTS

Proposed Sheet Pile Wall at Zone G

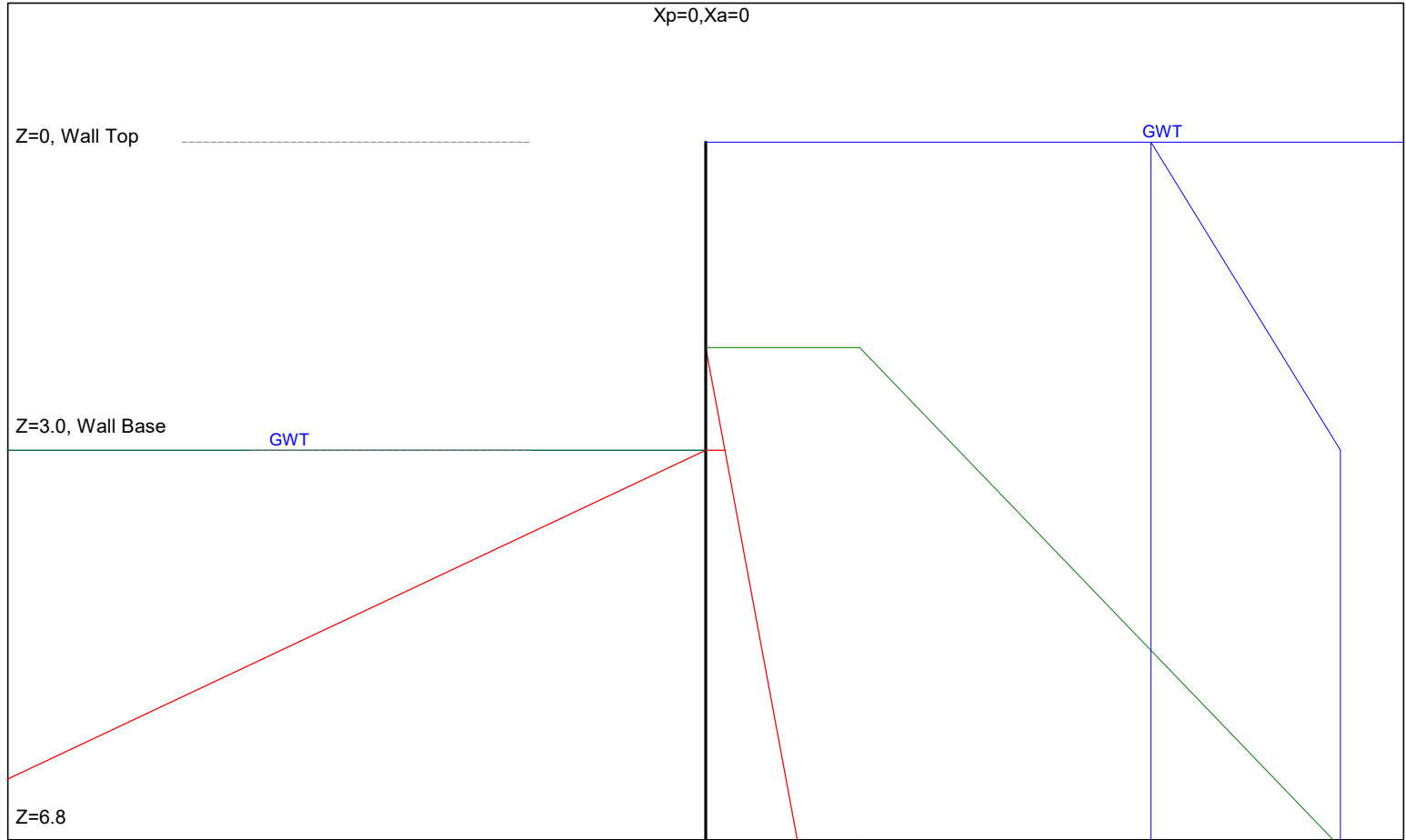
- PZ-22 Sheet Pile or Equiv.
- Minimum Sheet Section Length of 15 feet.

Rochester-REDI_West Side Dock Remnant

Xp=13.6

Xa=13.6

Xp=0, Xa=0



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

Date: 1/22/2021

File: C:\Users\natalemf\OneDrive - Ramboll\desktop\Projects\Rochester Redi\Sheet Pile Analysis\West Side_Dock Remnant.ep8

* INPUT DATA *

Wall Height=3.0 Total Soil Types= 3

Soil No.	Weight	Saturate	Phi	Cohesion	Nspt	Type	Description
1	114.6	126.1	32.90	0.0	10	4	Sand
2	113.2	124.5	0.00	0.4	4	1	Eq. Clay
3	139.7	153.7	37.32	3.1	50	3	Silt

Ground Surface at Active Side:

Line	Z1	Xa1	Z2	Xa2	Soil No.	Description
1	2.0	0.0	2.0	3.0	1	Sand
2	2.0	3.0	28.0	53.0	1	Sand
3	28.0	53.0	29.0	800.0	1	Sand
4	7.5	0.0	7.5	3.0	2	Eq. Clay
5	7.5	3.0	29.1	53.0	2	Eq. Clay
6	29.1	53.0	29.5	800.0	2	Eq. Clay
7	55.0	0.0	55.0	800.0	3	Silt

Water Table at Active Side:

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

Ground Surface at Passive Side:

Line	Z1	Xp1	Z2	Xp2	Soil No.	Description
1	3.0	0.0	3.0	800.0	1	Sand

2	7.5	0.0	7.5	800.0	2	Eq. Clay
3	55.0	0.0	55.0	800.0	3	Silt

Water Table at Passive Side:

Point	Z-water	X-water
1	3.0	0.0
2	3.0	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= 0.01 per one linear foot (or meter) width along wall height

Total Static Force above Base= 0.01

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

Z1	Pa1	Z2	Pa2	Slope	Coef.
2.00	0.00	3.00	0.02	0.0189	0.2960

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

Z1	Pa1	Z2	Pa2	Slope	Ka or Ko
3.00	0.02	6.80	0.09	0.0189	0.2960

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

Z1	Pp1	Z2	Pp2	Slope	Kp
3.00	0.00	6.80	0.82	0.215	3.3787

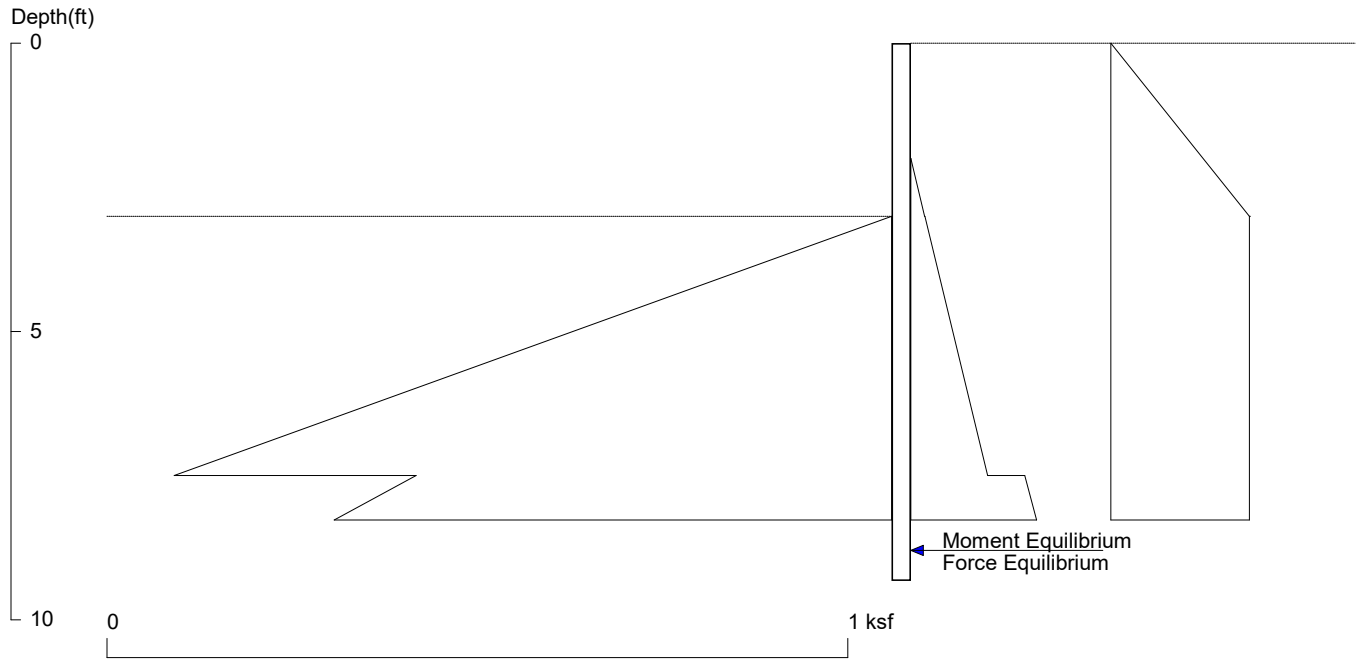
Water Pressure - Output to Shoring - Multiplier of Pressure = 1

No	Z1	Pw1	Z2	Pw2	kw1
0	0.00	0.00	3.00	0.19	0.06
1	3.00	0.19	6.80	0.19	0.00

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

Date: 1/22/2021 File Name: C:\Users\natalemf\OneDrive - Ramboll\desktop\Projects\Rochester Redi\Sheet Pile Analysis\West Side_Dock Remnant.e

Rochester-REDI_West Side Dock Remnant



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Date: 1/22/2021

File: C:\Users\natalemf\OneDrive - Ramboll\desktop\Projects\Rochester Redi\Sheet Pile Analysis\West Side_Dock Remnant

Wall Height=3.0

Pile Diameter=1.0

Pile Spacing=1.0

Wall Type: 1. Sheet Pile

PILE LENGTH: Min. Embedment=6.32 Min. Pile Length=9.32

MOMENT IN PILE: Max. Moment=1.20 per Pile Spacing=1.0 at Depth=6.07

PILE SELECTION:

Request Min. Section Modulus = 0.6 in³/ft=32.55 cm³/m, Fy= 36 ksi = 248 MPa, Fb/Fy=0.66

PZ22 has Section Modulus = 18.1 in³/ft=973.06 cm³/m. It is greater than Min. Requirements!

Top Deflection = 0.41(in) based on E (ksi)=29000.00 and I (in⁴)/foot=84.4

DRIVING PRESSURES (ACTIVE, WATER, & SURCHARGE):

Z1	P1	Z2	P2	Slope
*	Above	Base		
2.000	0.000	3.000	0.019	0.018854
*	Below	Base		
3.000	0.019	7.500	0.104	0.018850
7.500	0.154	34.000	0.703	0.020722
*	Water	Pres.		
0.000	0.000	3.000	0.187	0.062400
3.000	0.187	34.000	0.187	0.000000

PASSIVE PRESSURES:

Z1	P1	Z2	P2	Slope
*	Below	Base		
3.000	0.000	7.500	0.968	0.215222
7.500	0.642	34.000	4.450	0.143677

ACTIVE SPACING:

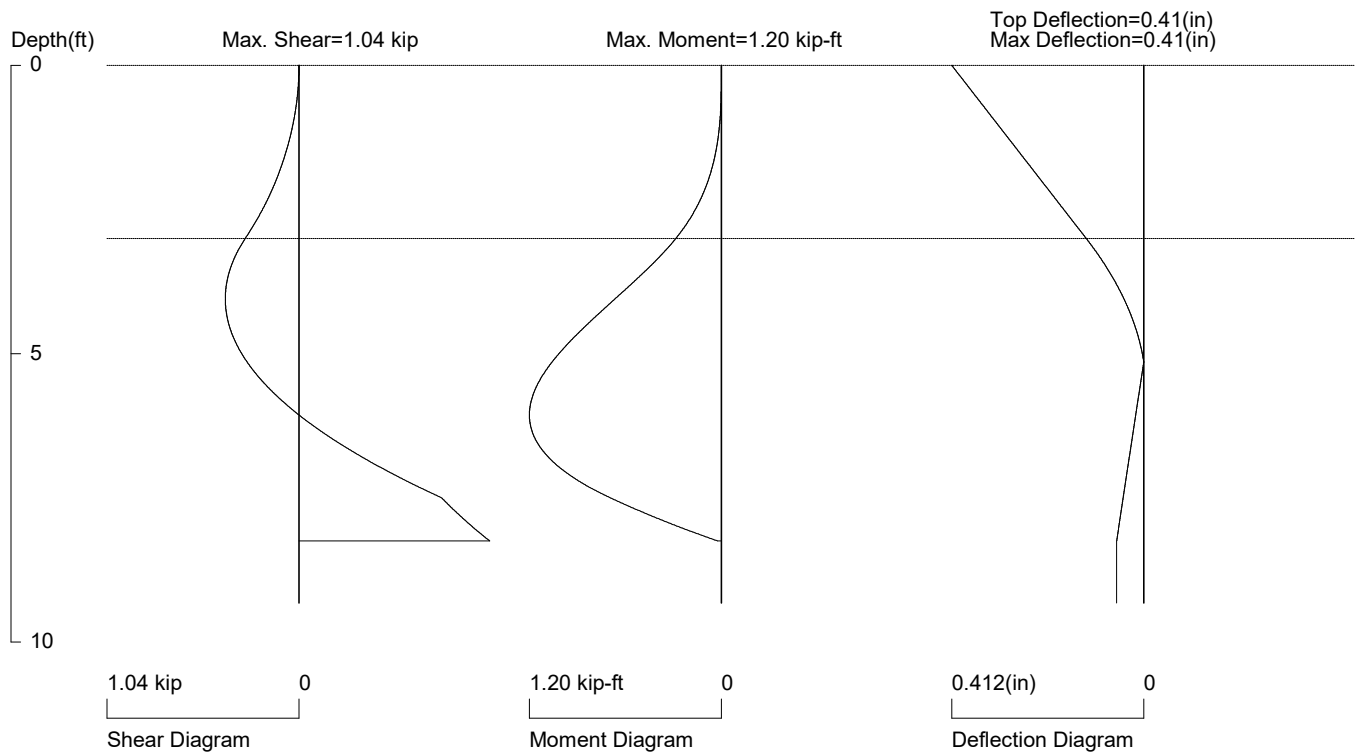
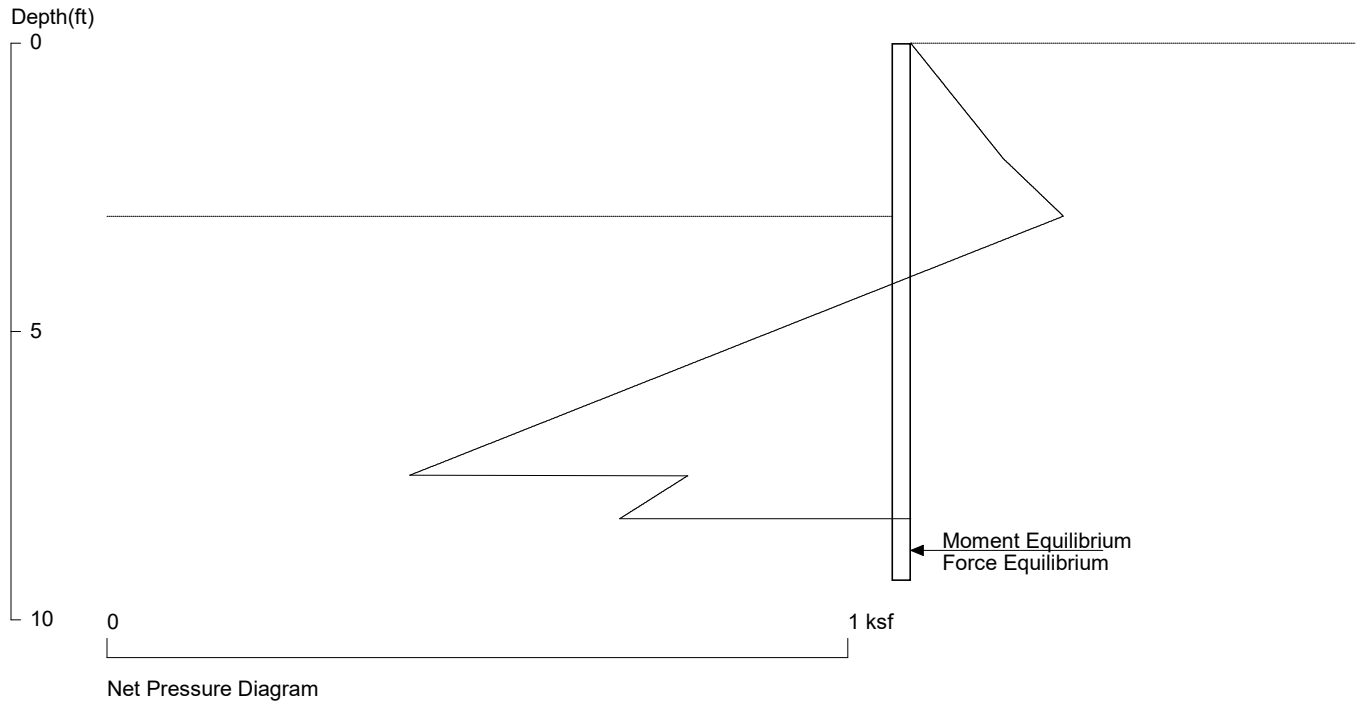
No.	Z depth	Spacing
1	0.00	1.00
2	3.00	1.00

PASSIVE SPACING:

No.	Z depth	Spacing
1	0.00	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

Rochester-REDI_West Side Dock Remnant



PRESSURE, SHEAR, MOMENT, AND DEFLECTION DIAGRAMS

Based on pile spacing: 1.0 foot or meter

User Input Pile, PZ22: E (ksi)=29000.0, I (in⁴)/foot=84.4

File: C:\Users\natalemf\OneDrive - Ramboll\desktop\Projects\Rochester Redi\Sheet Pile Analysis\West Side_Dock Remnant.sh8

EARTH PRESSURE ANALYSIS SUMMARY
<EarthPres>
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Date: 1/22/2021 File: C:\Users\natalemf\OneDrive -
Ramboll\desktop\Projects\Rochester Redi\Sheet Pile Analysis\West Side_Dock
Remnant.ep8

Title 1: Rochester-REDI_West Side
Title 2: Dock Remnant

Input data: *****

Wall Height = 3.00
Depth of Ground at Active Side = 2.00
Depth of Ground at Passive Side = 3.00
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 = 34.00
Analysis Segment, dz = 0.08
No. of Active Segment at H, nz0 = 1
No. of Active Segment at Hmax, nz = 3
No. of Passive Segment, nzp = 2
Active Depth at H, Zh = 3.00
Active Depth at Hmax, Z = 34.00
Passive Depth at Hmax, Zp = 34.00
Max. Pressure = 4.64

Total Soil Types= 3

Soil	Weight	W(S)	Phi	Cohesion	Nspt	Type	Description
1	114.6	126.1	32.90	0.0	10	4	Sand
2	113.2	124.5	0.00	0.4	4	1	Eq. Clay
>	113.2	124.5	23.2	0.0	4	1	Converted
3	139.7	153.7	37.32	3.1	50	3	Silt

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	2.0	0.0	2.0	3.0	1
2	2.0	3.0	28.0	53.0	1
3	28.0	53.0	29.0	800.0	1
4	7.5	0.0	7.5	3.0	2
5	7.5	3.0	29.1	53.0	2
6	29.1	53.0	29.5	800.0	2
7	55.0	0.0	55.0	800.0	3

Water Table at Active Side:

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

Ground Surface at Passive Side:

Line	Z1	Xp1	Z2	Xp2	Soil No.
1	3.0	0.0	3.0	800.0	1
2	7.5	0.0	7.5	800.0	2
3	55.0	0.0	55.0	800.0	3

Water Table at Passive Side:

Point	Z-water	X-water
1	3.0	0.0
2	3.0	800.0

Output data: *****

Total Force above Base= 0.01 per one linear foot (or meter) width along wall height
 Static Force above Base= 0.01

Apparent Pressure above Base - Output to Shoring

Active/At-Rest Force above Base, Ea = 0.01

No	Z1	P1	Z2	P2	Slope	Coef.
0	2.0	0.00	3.0	0.02	0.0189	0.2960

Driving Pressure below Base - Output to Shoring

No	Z1	P1	Z2	P2	Slope	Ka or Ko
0	3.0	0.02	7.5	0.10	0.0189	0.2959
1	7.5	0.15	34.0	0.70	0.0207	0.3337

Passive Pressure below Base - Output to Shoring

No	Z1	P1	Z2	P2	Slope	Kp
0	3.0	0.00	7.5	0.97	0.2152	3.3787
1	7.5	0.64	34.0	4.45	0.1437	2.3136

Water Pressure - Output to Shoring

No	Z1	P1	Z2	P2	Slope
0	0.0	0.00	3.0	0.19	0.06
1	3.0	0.19	34.0	0.19	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 Weight

Ka - Active Earth Pressure Coefficient

Ko - At-Rest Earth Pressure Coefficient

Kp - Passive Earth Pressure Coefficient

SHORING WALL CALCULATION SUMMARY
The leading shoring design and calculation software
Software Copyright by CivilTech 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_West Side
Subtitle: Dock Remnant

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

Wall Type: 1. Sheet Pile
 Wall Height: 3.00
 Pile Diameter: 1.00
 Pile Spacing: 1.00
 Factor of Safety (F.S.): 1.00
 Lateral Support Type (Braces): 1. No
 Top Brace Increase (Multi-Bracing): Add 15%*
 Embedment Option: 1. Yes
 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: 84.40

User Input File: PZ22

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

No.	Z1 top	Top Pres.	Z2 bottom	Bottom Pres.	Slope
1	*	Above	Base		
2	2.000	0.000	3.000	0.019	0.018854
3	*	Below	Base		
4	3.000	0.019	7.500	0.104	0.018850
5	7.500	0.154	34.000	0.703	0.020722
6	*	Water	Pres.		
7	0.000	0.000	3.000	0.187	0.062400
8	3.000	0.187	34.000	0.187	0.000000

* PASSIVE PRESSURE *

No.	Z1 top	Top Pres.	Z2 bottom	Bottom Pres.	Slope
1	*	Below	Base		
2	3.000	0.000	7.500	0.968	0.215222
3	7.500	0.642	34.000	4.450	0.143677

* ACTIVE SPACE *

No.	Z depth	Spacing
1	0.00	1.00
2	3.00	1.00

* PASSIVE SPACE *

No.	Z depth	Spacing
1	0.00	1.00

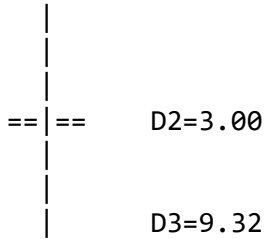
- *For Tieback: Input1 = Diameter; Input2 = Bond Strength
- *For Plate: Input1 = Diameter; Input2 = Allowable Pressure
- *For Deadman: Input1 = Horz. Width; Input2 = Passive Pressure;
- *For Sheet Pile Anchor: Input1 = Horz. Width; Input2 = Passive Slope;

*****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

| D1=0.00



D1 - TOP DEPTH
 D2 - EXCAVATION BASE
 D3 - PILE TIP

MOMENT equilibrium AT DEPTH=8.27 WITH EMBEDMENT OF 5.27
 FORCE equilibrium AT DEPTH=9.32 WITH EMBEDMENT OF 6.32

The program calculates an embedment for moment equilibrium, then increase the embedment by 1.2

*****RESULTS*****

* EMBEDMENT Notes *

Based on USS Design Manual, first calculate embedment for moment equilibrium, then increased the embedment to get the design depth.
 The embedment for moment equilibrium is 5.27
 The program calculates an embedment for moment equilibrium, then increase the embedment by 1.2
 The total design embedment is 6.32

Embedment Information:

If 20% increased, the total design embedment is 6.32
 If 30% increased, the total design embedment is 6.85
 If 40% increased, the total design embedment is 7.38
 If 50% increased, the total design embedment is 7.91

* MOMENT IN PILE (per pile spacing)*

Pile Spacing: sheet piles are one foot or one meter; soldier piles are one pile.
 Overall Maximum Moment = 1.20 at 6.07
 Maximum Shear = 1.04
 Moment and Shear are per pile spacing: 1.0 foot or meter

* VERTICAL LOADING *

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

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

Overall Maximum Moment = 1.20 at 6.07

The pile selection is based on the magnitude of the moment only. Axial force is neglected.

Request Min. Section Modulus = 0.61 in³/ft = 32.55 cm³/m, F_y= 36 ksi = 248 MPa, F_b/F_y=0.66

PZ22 has been found in Sheet Pile list!

PZ22(English): S_x= 18.10 in³/ft I_x= 84.40 in⁴/ft Weight= 22.00 lb/ft

PZ22(Metrics): S_x= 973.06 cm³/m I_x= 115.26 x100cm⁴/m Weight= 0.321 kN/m

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

PZ22 is capable to support the shoring!

I (in⁴)/foot=84.40

Top deflection = 0.412(in)

Max. deflection = 0.412(in)

APPENDIX C – ENGINEERING DRAWINGS

73070 REDI - GRANTS

WEST SIDE OF GENESEE RIVER - MO.07 & MO.10

400 ANDREWS STREET ROCHESTER, NY 14604



LOCATION MAP
NO SCALE



TOWN OF ROCHESTER
WEST SIDE OF GENESEE RIVER
ROCHESTER, NEW YORK

JANUARY 2021

RAMBOLL

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

INDEX TO DRAWINGS

TITLE SHEET	
CIVIL	
G-001	GENERAL NOTES, ABBREVIATIONS & LEGEND
C-101	SITE PLAN
C-102	SITE PLAN
C-103	SITE PLAN
C-104	SITE PLAN
C-105	SITE PLAN
C-501	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 (NAV88). 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 NYSOT PRIOR TO THE DATE THE NOTICE TO BIDDERS IS ADVERTISED, HEREINAFTER REFERRED TO AS THE NYSOT 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 NYSOT STANDARD SPECIFICATIONS AND THESE CONTRACT DOCUMENTS, THE CONTRACT DOCUMENTS SHALL GOVERN.
2. ANY REFERENCE TO NYSOT STANDARD SPECIFICATIONS IS LIMITED IN SCOPE TO TECHNICAL ENGINEERING AND CONSTRUCTION WORK; MATERIALS, DETAILS, PROCEDURES, ETC. ALL REFERENCES TO THE STATE OR THE NYSOT 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 NYSOT 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 NYSOT 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. 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.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

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CLIENT
CITY OF ROCHESTER

NO.	DATE	REVISION	INT.

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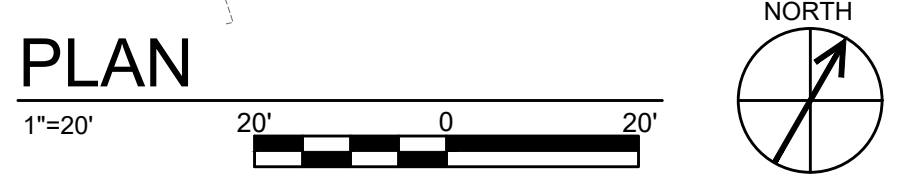
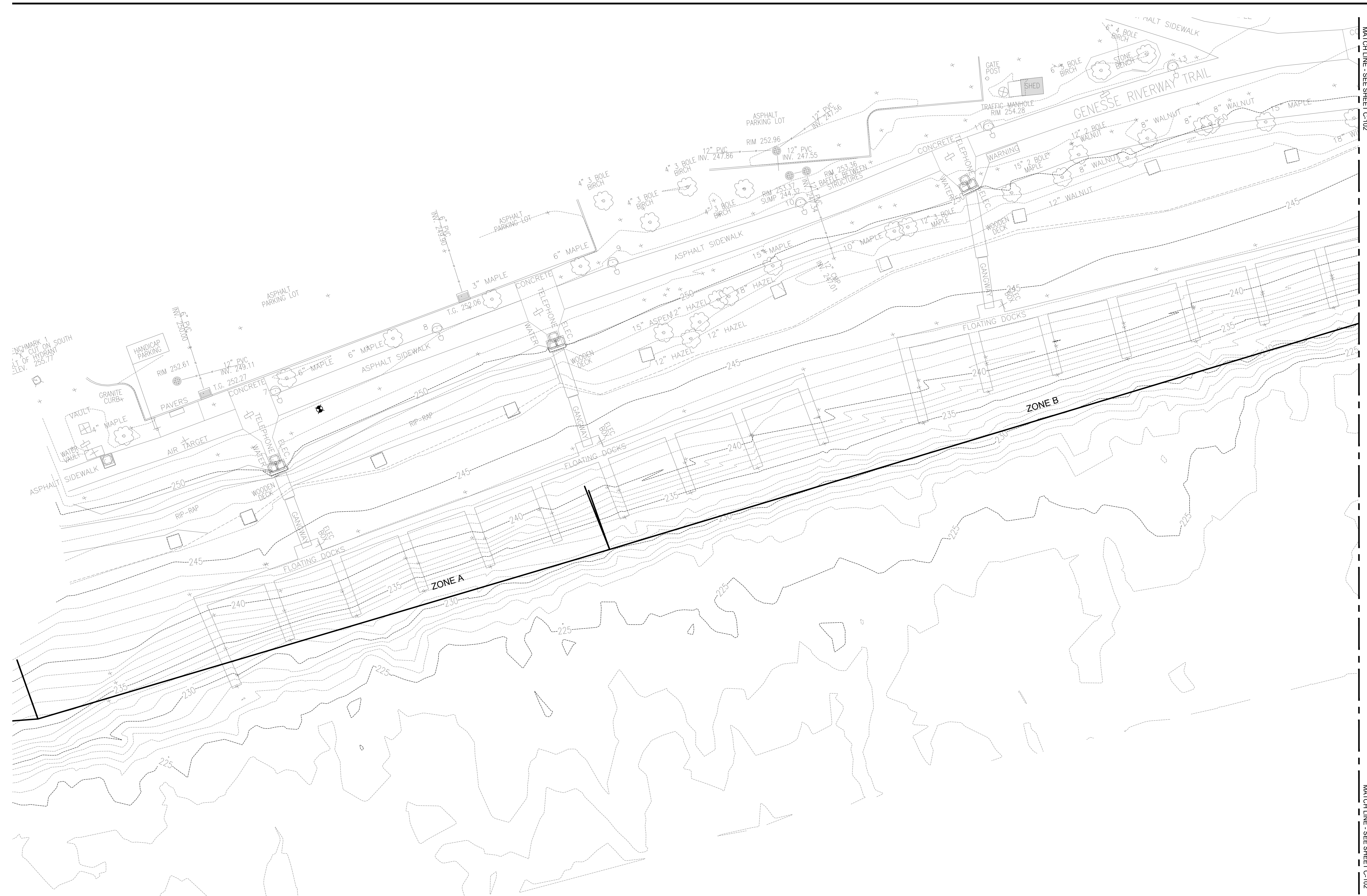
DRAWN BY _____

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



PROJECT
**REDI-GRANTS WEST SIDE OF
GENESSEE RIVER - MO-07 AND MO-10**

ADDRESS
400 ANDREWS ST., ROCHESTER, NY 14604



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RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

PROJECT
**REDI-GRANTS WEST SIDE OF
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ADDRESS
400 ANDREWS ST., ROCHESTER, NY 14604

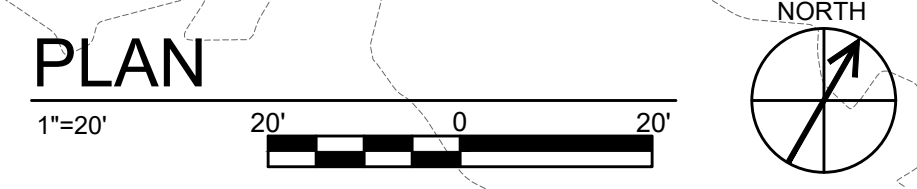
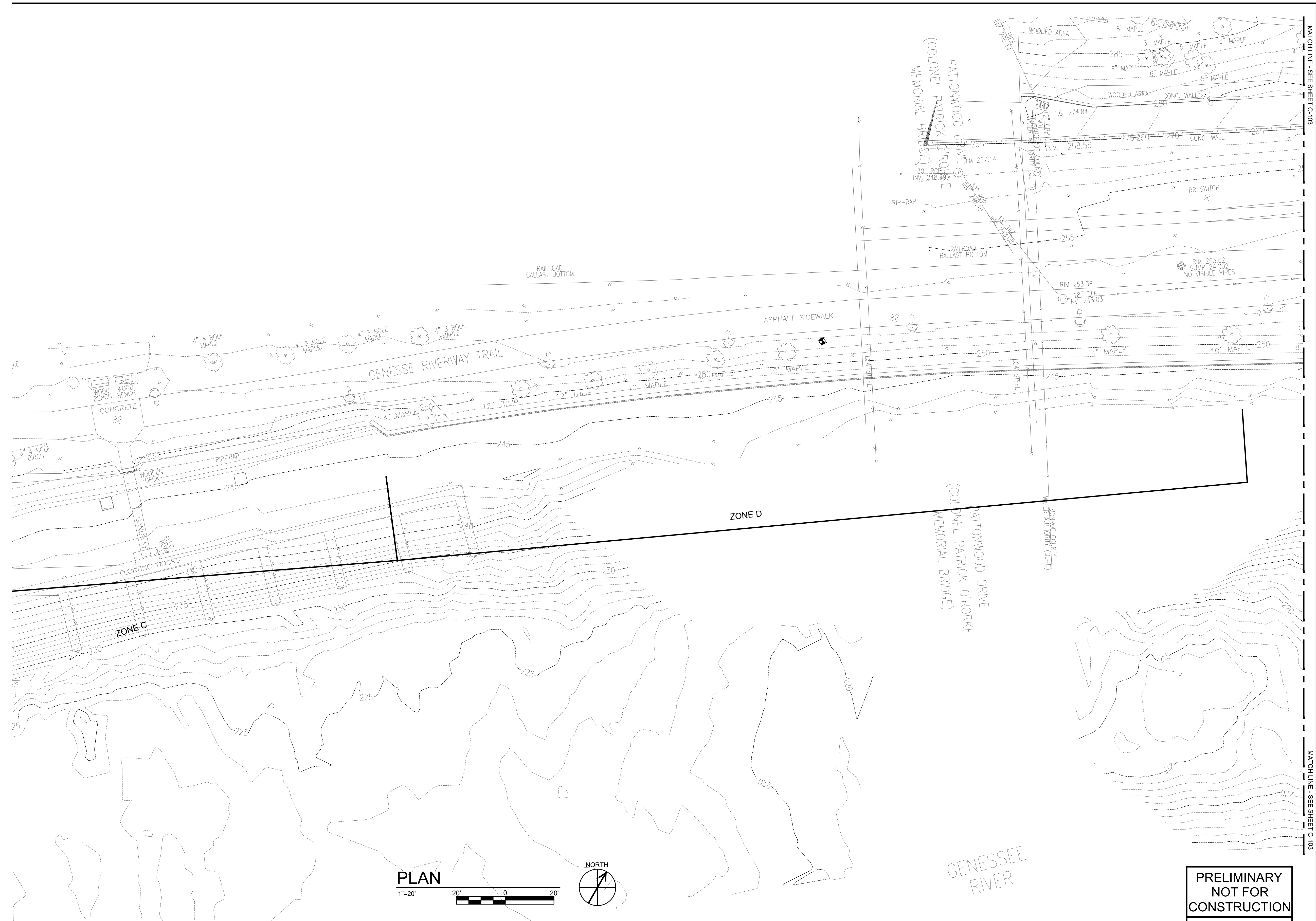
SHEET DESCRIPTION
SITE PLAN

DRAWING LOCATION

C-101

MATCH LINE - SEE SHEET C-102

MATCH LINE - SEE SHEET C-102



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PROJECT
**REDI-GRANTS WEST SIDE OF
 GENESSEE RIVER - MO-07 AND MO-10**
 ADDRESS
 400 ANDREWS ST., ROCHESTER, NY 14604

SHEET DESCRIPTION
SITE PLAN
 DRAWING LOCATION

C-102

MATCH LINE - SEE SHEET C-103

MATCH LINE - SEE SHEET C-103



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REDI-GRANTS WEST SIDE OF GENESEE RIVER - MO-07 AND MO-10

ADDRESS
400 ANDREWS ST., ROCHESTER, NY 14604

SHEET DESCRIPTION
SITE PLAN

DRAWING LOCATION

C-103

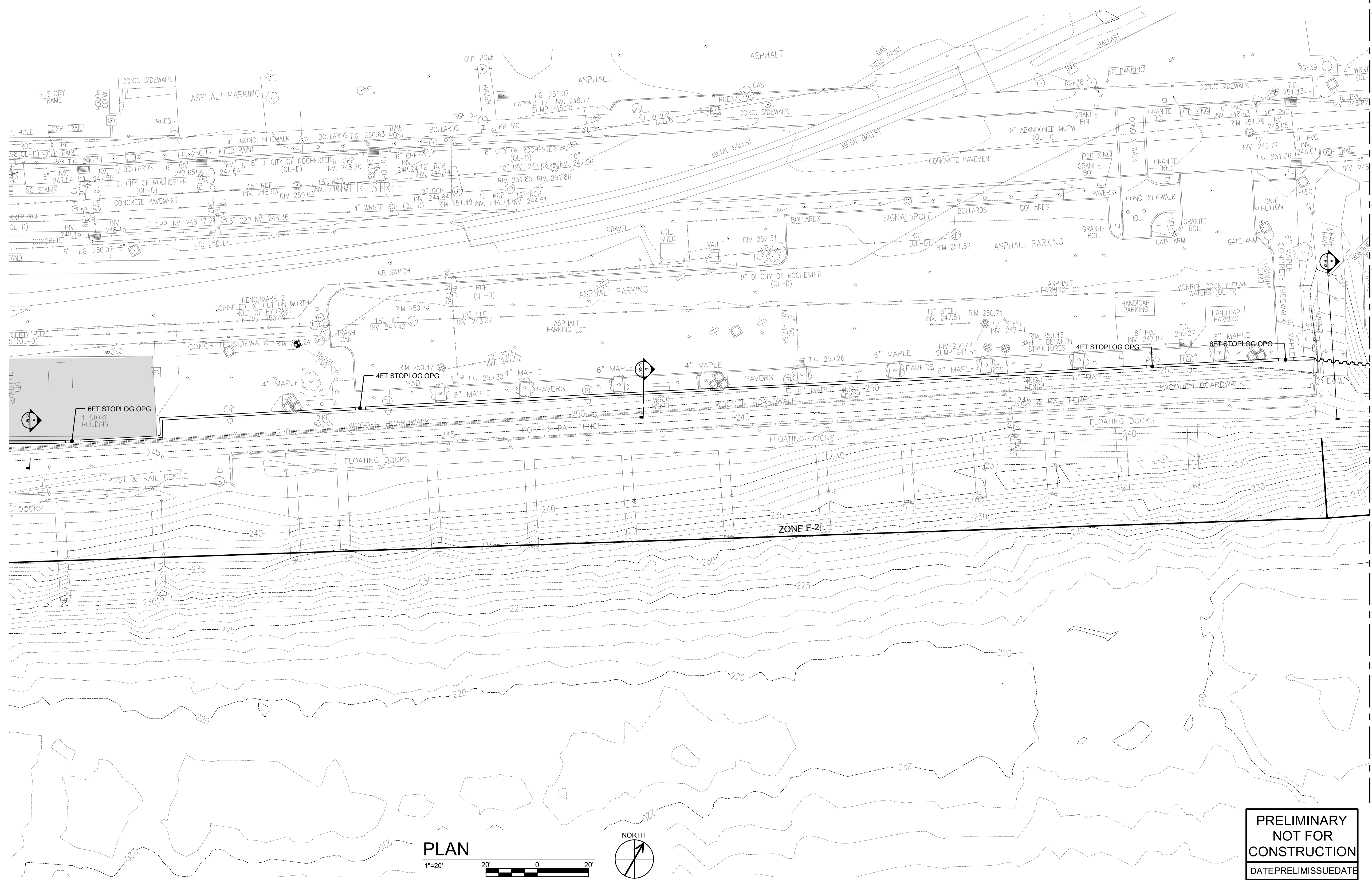
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DATE PRELIMISSUED DATE

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MATCHLINE - SEE SHEET C-104

MATCHLINE - SEE SHEET C-104



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	10/22/19

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PROJECT
**REDI-GRANTS WEST SIDE OF
GENESSEE RIVER - MO-07 AND MO-10**

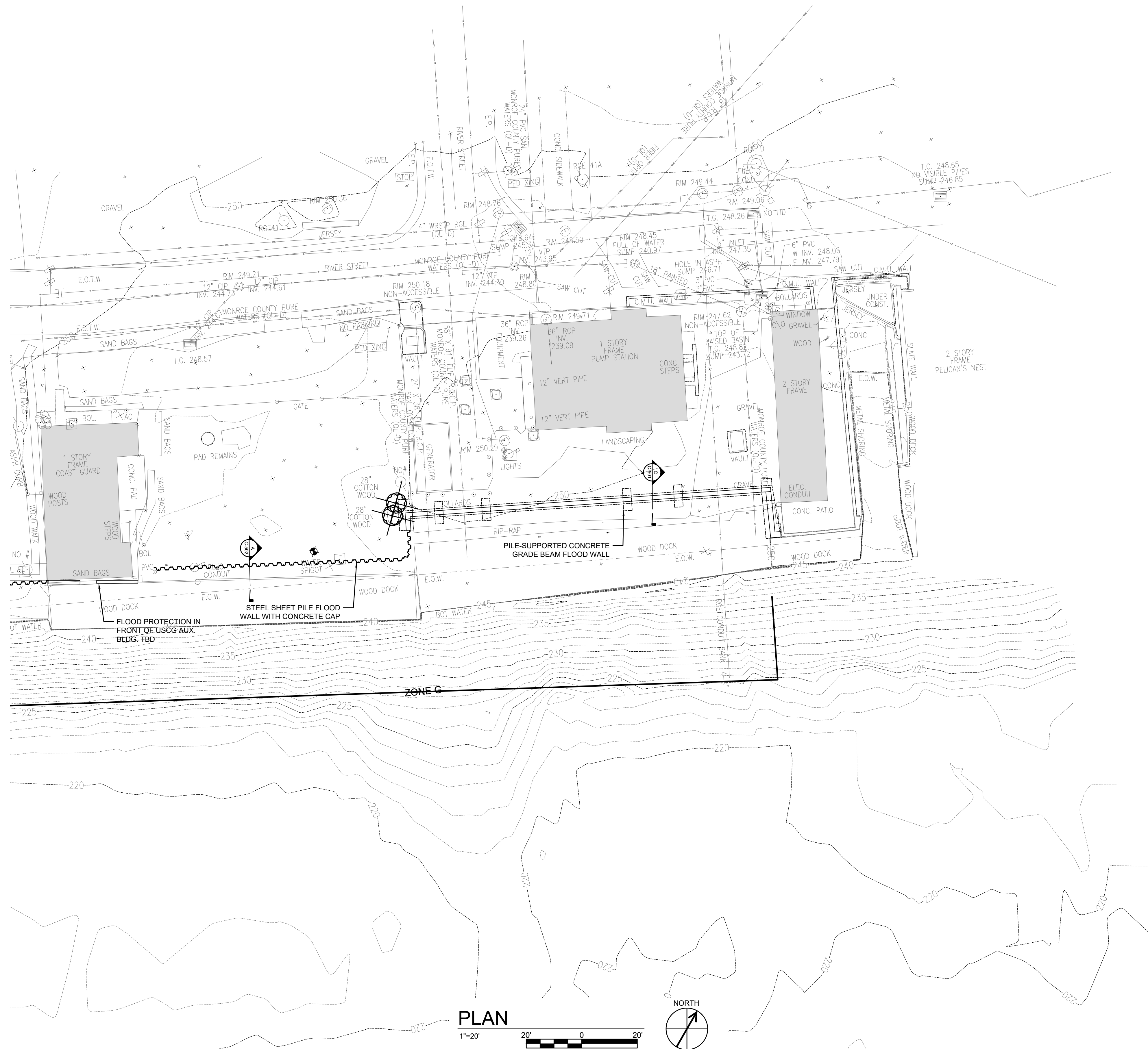
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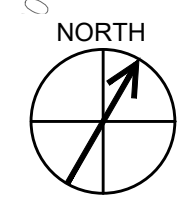
DRAWING LOCATION

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PLAN
1"=20'



**PRELIMINARY
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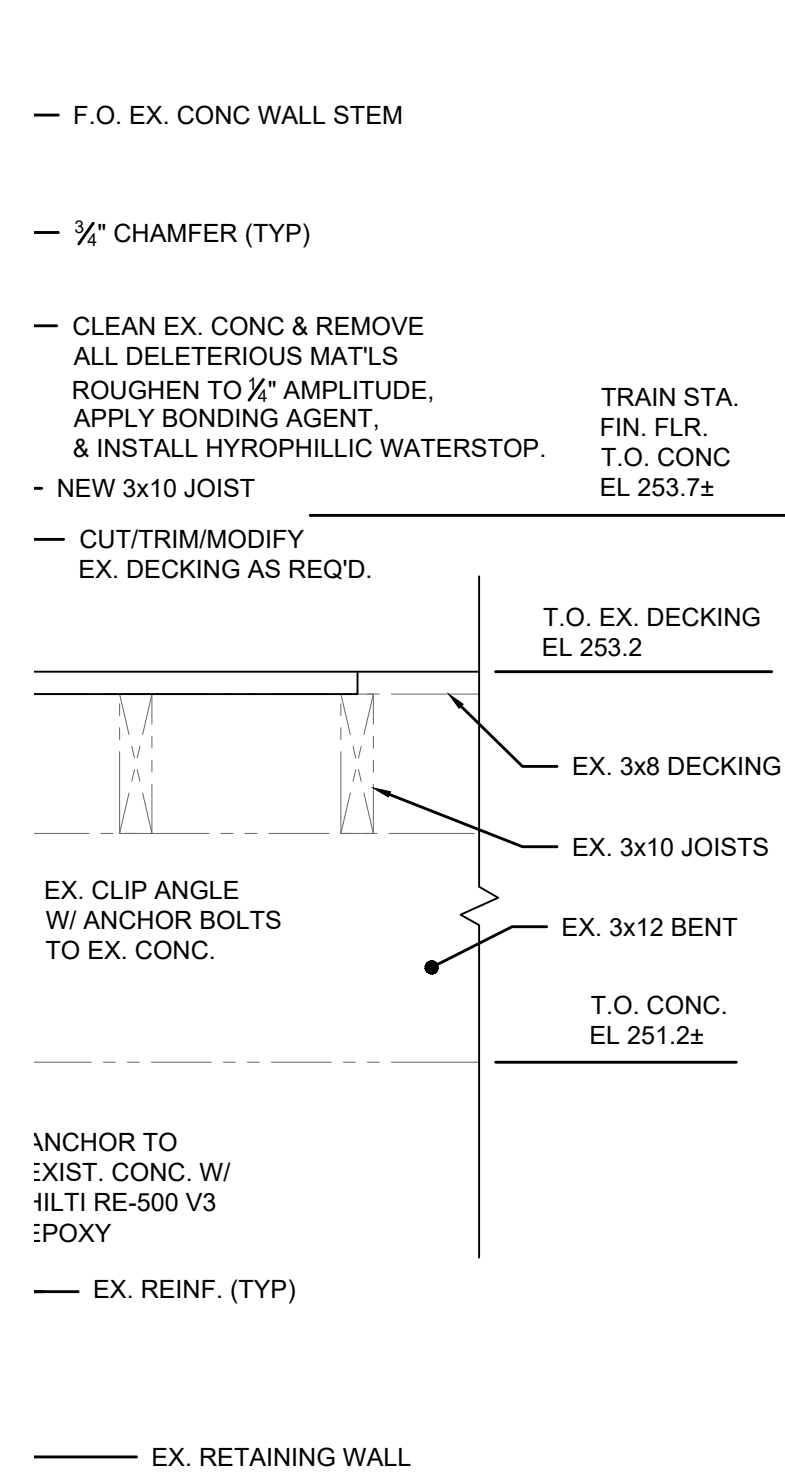
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**REDI-GRANTS WEST SIDE OF
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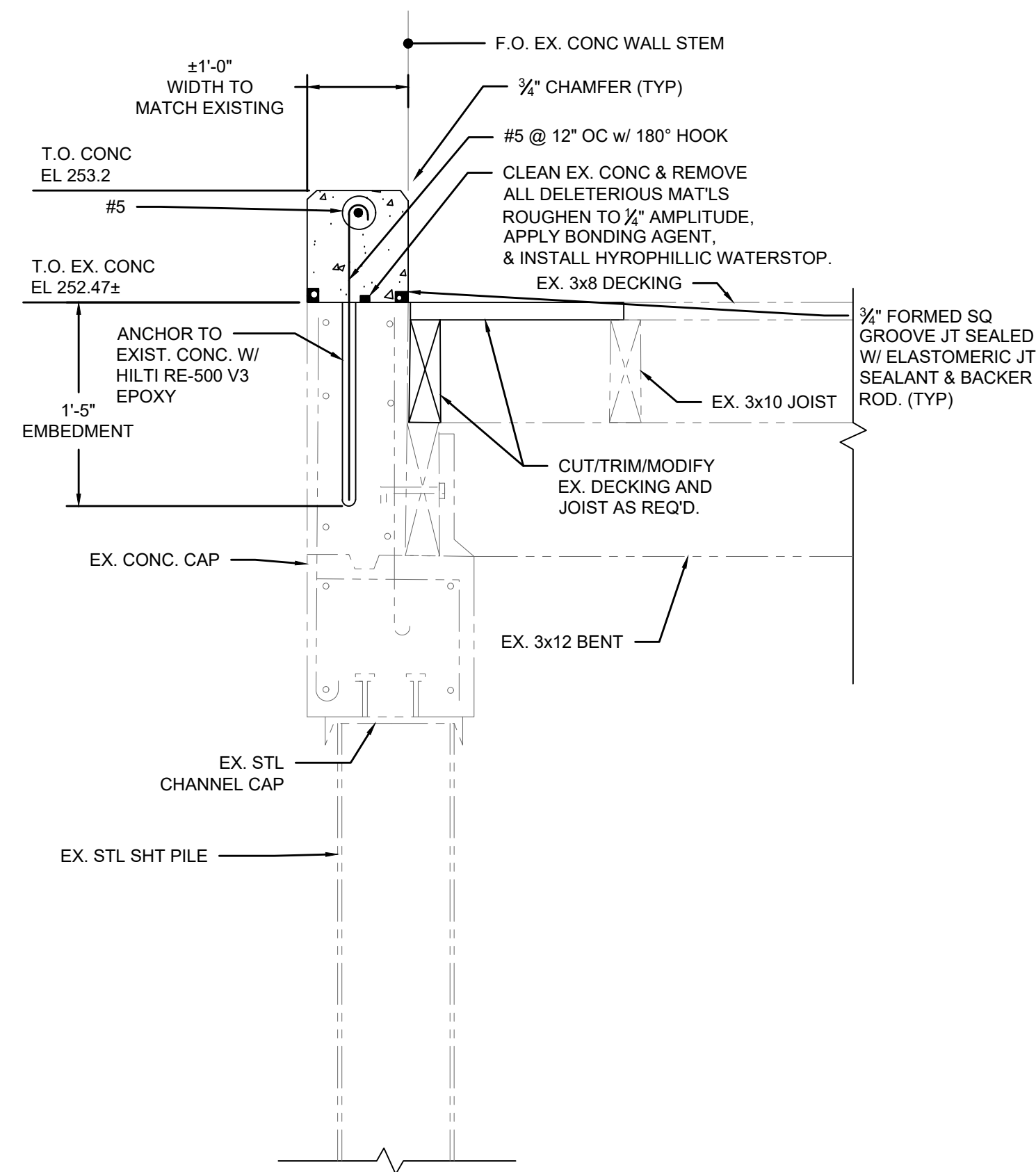
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SITE PLAN

DRAWING LOCATION

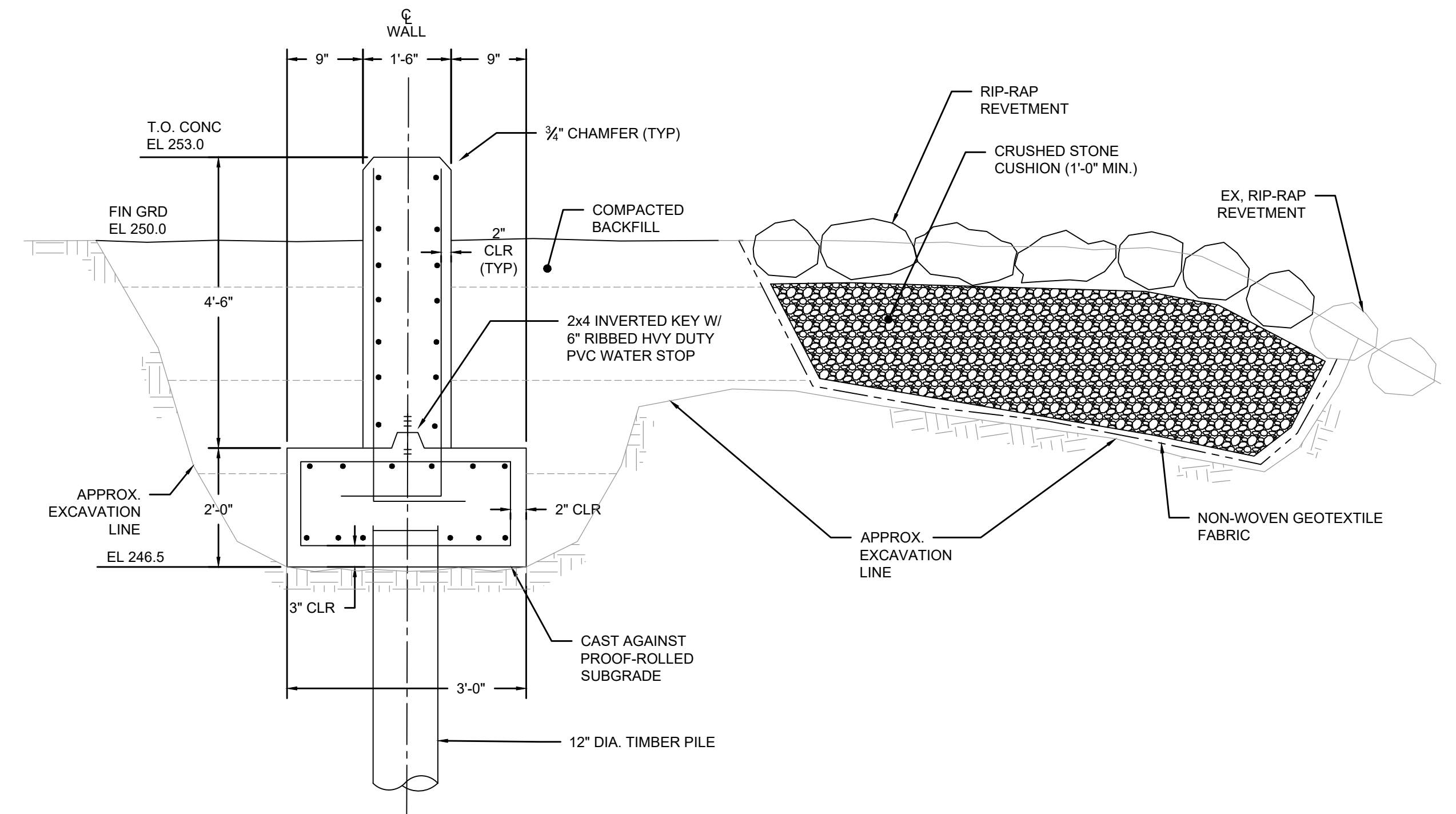
C-105



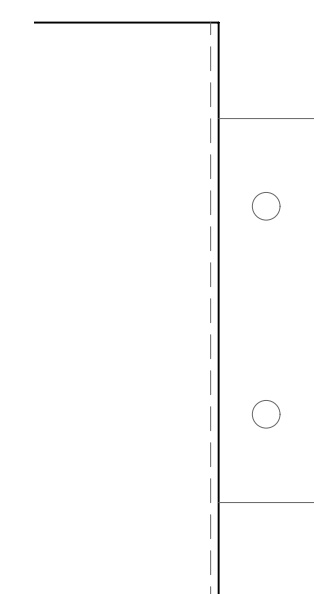
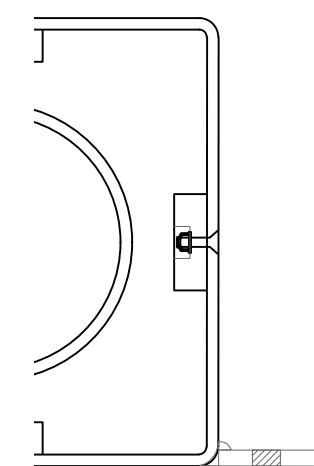
A DETAIL @ ZONE F-1



B WALL RAISING DETAIL @ ZONE F-2
NOT TO SCALE



C ROCHESTER MARINA REDI
ZONE G CONC FLOOD WALL
TYPICAL SECTION
NOT TO SCALE

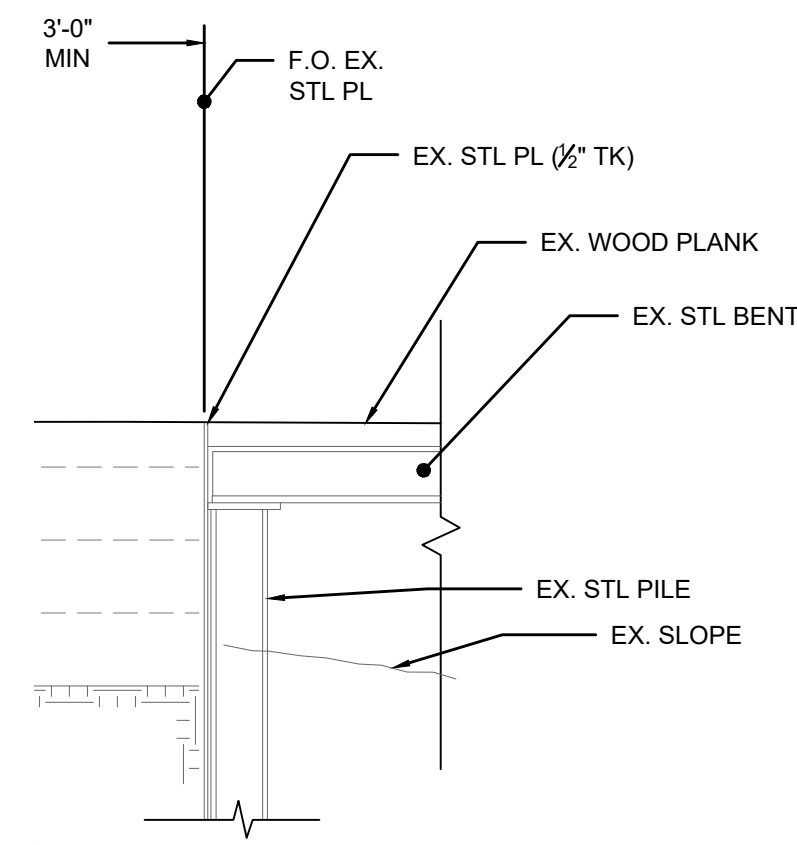


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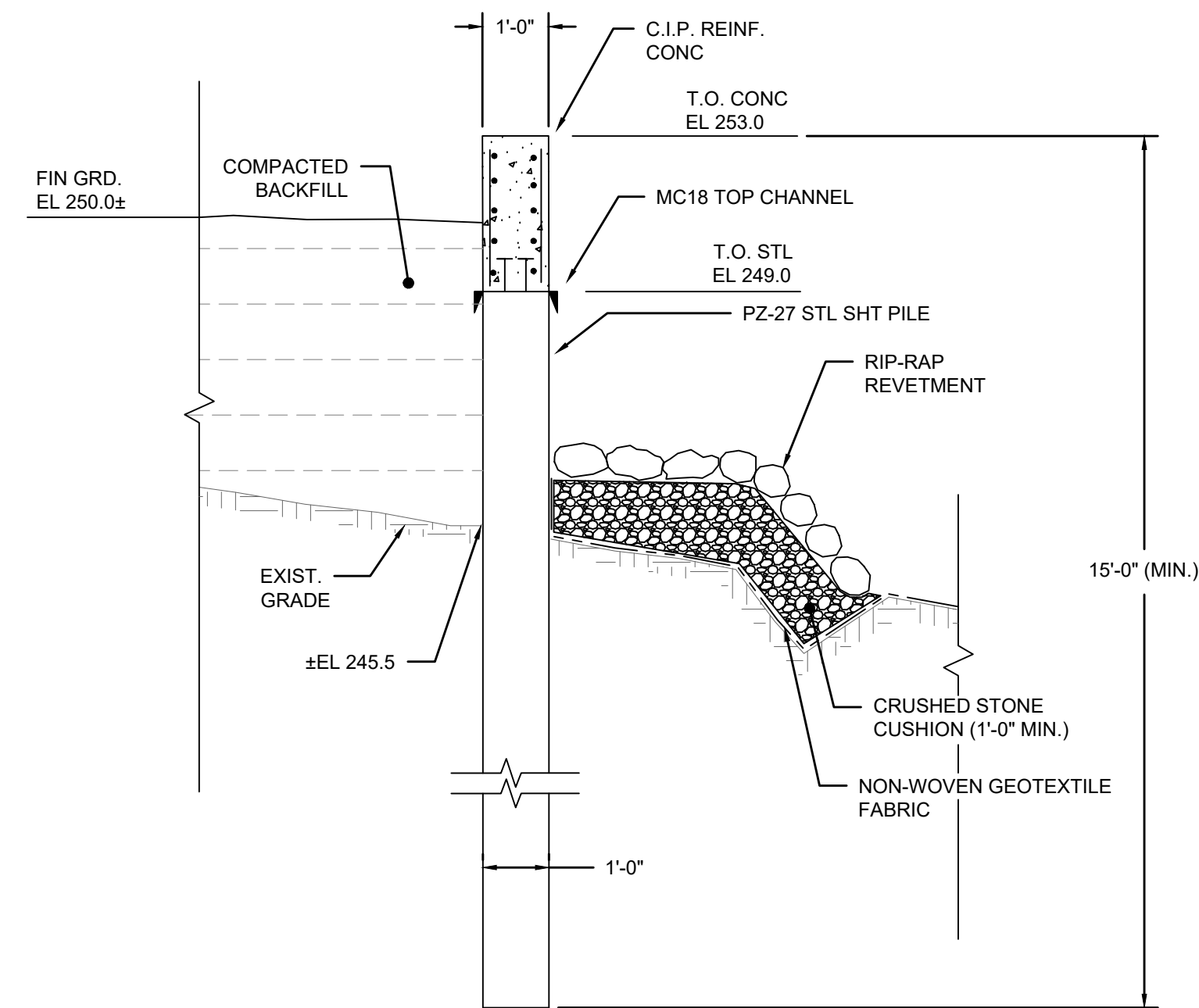
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DATE PRELIMISSUED DATE

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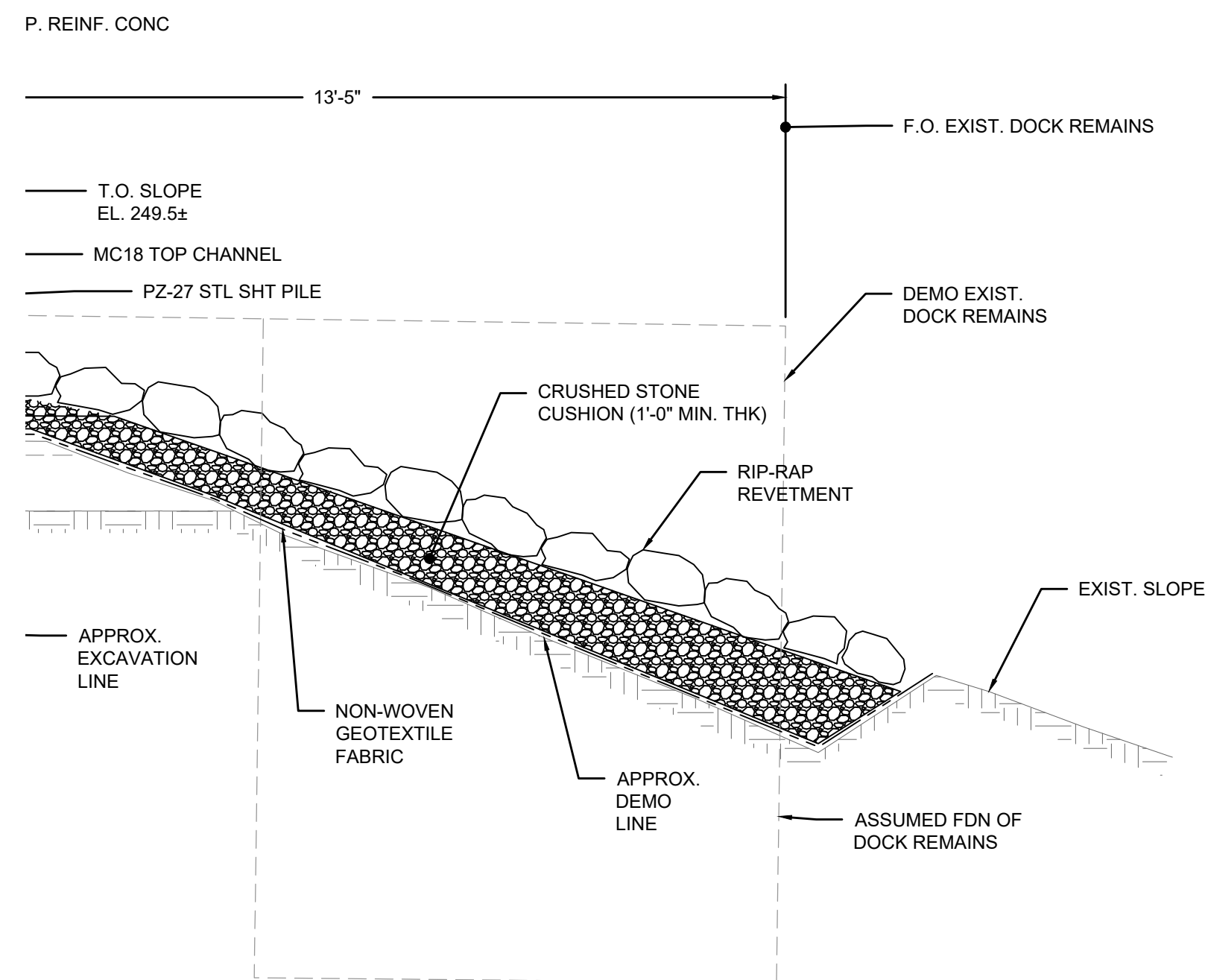
ROCHESTER	DESIGNER / PROFESSIONAL ENGINEER RESPONSIBLE				RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.	PROJECT REDI-GRANTS WEST SIDE OF GENESEE RIVER - MO-07 AND MO-10	SHEET DESCRIPTION MISCELLANEOUS DETAILS	DRAWING LOCATION	C-501
	NO.	DATE	REVISION	INT.					
					CHECKED BY DATE 10/22/19				
					DRAWN BY				



AUXILIARY DOCK



SECTION @ EX. BOAT RAMP
NOT TO SCALE



SECTION @ EX. DOCK REMAINS

NOT TO SCALE

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CONSTRUCTION
DATE PRELIMISSUED DATE

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NO.	DATE	REVISION	INT.

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FILE NO.
1087699.00197
DATE
10/22/19

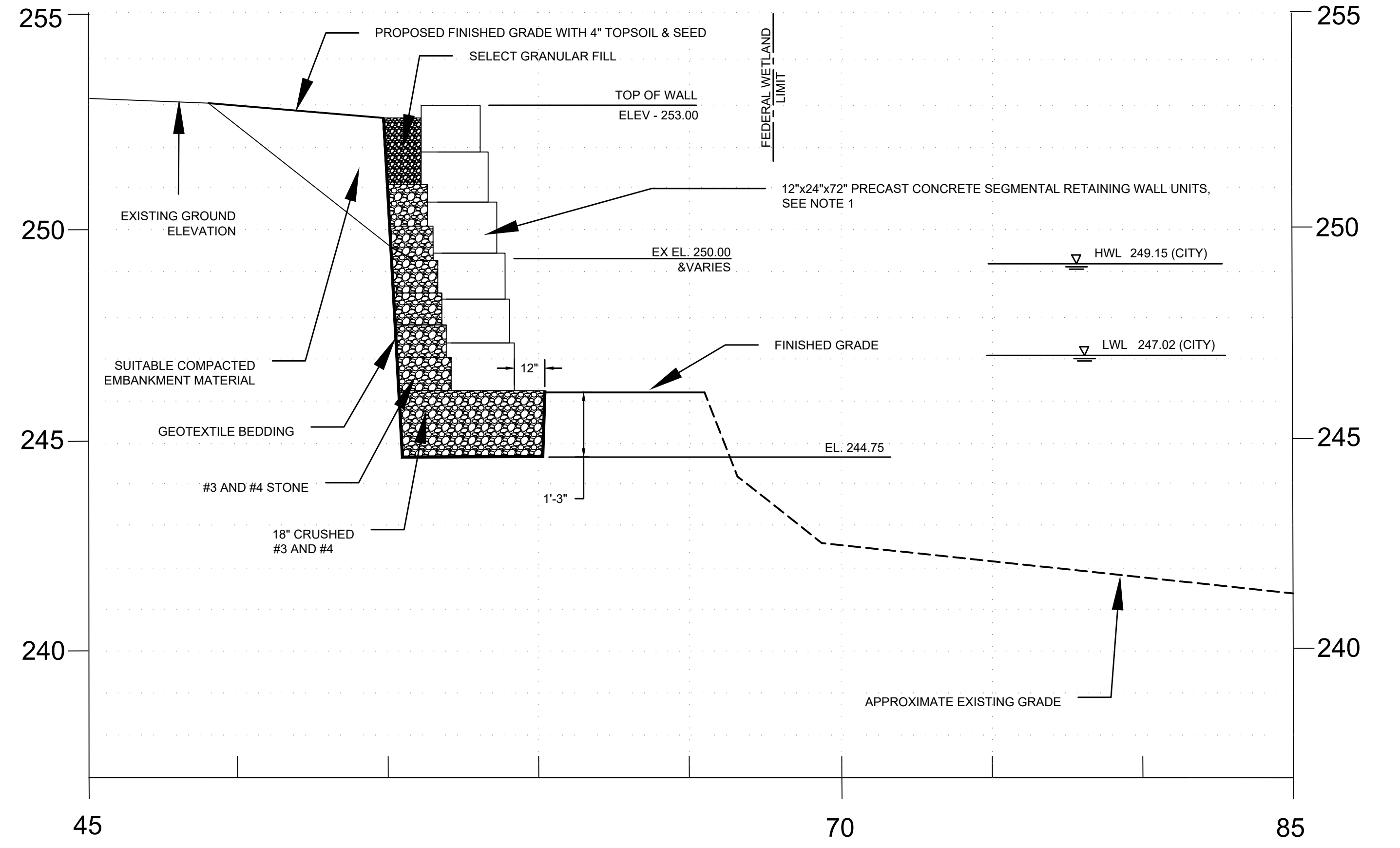
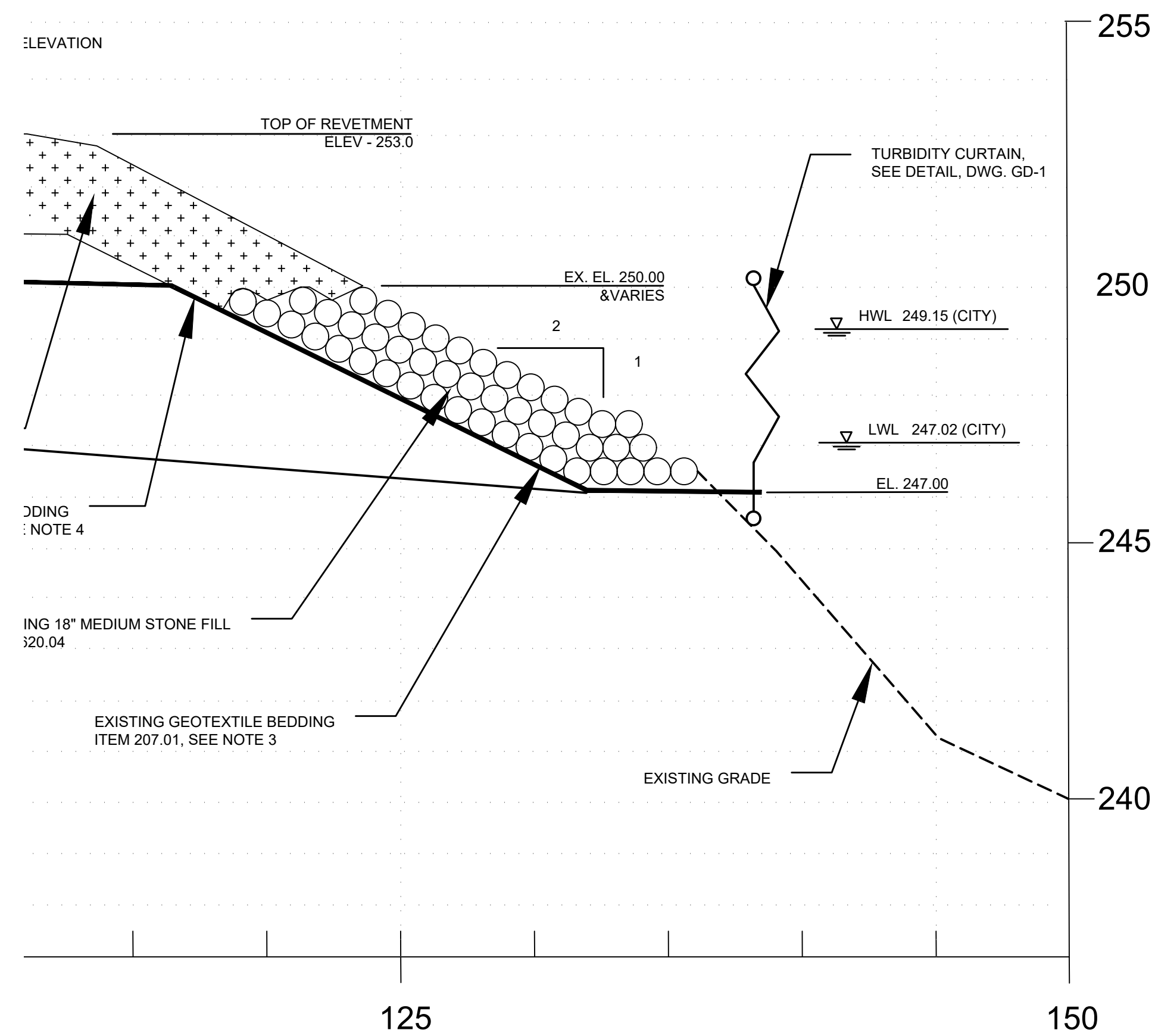
RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.



PROJECT
REDI-GRANTS WEST SIDE OF
GENESEE RIVER - MO-07 AND MO-10
ADDRESS
400 ANDREWS ST., ROCHESTER, NY 14604

SHEET DESCRIPTION
MISCELLANEOUS DETAILS
DRAWING LOCATION

C-502



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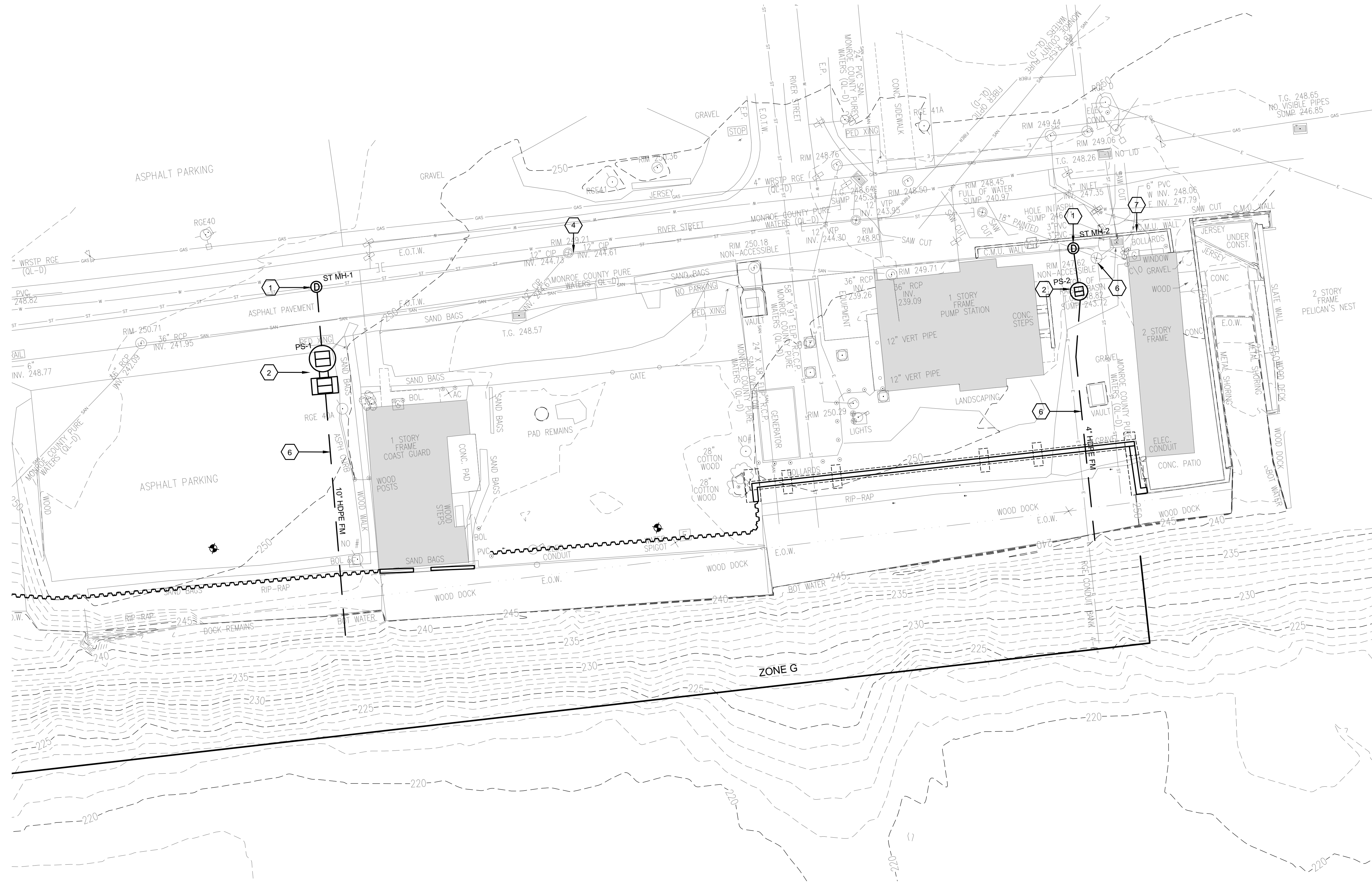
1. IDENTIFY WHERE THEIR ROOTS ARE EXPOSED.
 2. STREAM FABRIC OVERLAPPING DOWNSTREAM FABRIC.
 3. 700X, OR APPROVED EQUIVALENT.
 4. 5. THE SHORELINE ARE SHOWN ON THE LAYOUT AND MATERIALS PLANS.
 6. JUST LIMITS OF VARIOUS SECTIONS IN FIELD.

- NOTES:
1. PRECAST CONCRETE SEGMENTAL RETAINING WALL UNITS SHALL BE "UNLOCK, DURA-HOLD" (1,680 LBS) UNITS, OR APPROVED EQUIVALENT, ITEM S632.15
 2. THE RETAINING WALL SHALL BE DESIGNED BY THE SUPPLIER FOR THE EXISTING SITE CONDITIONS AND THE DESIGN STAMPED BY A PROFESSIONAL ENGINEER LICENSED AND REGISTERED TO PRACTICE IN THE STATE OF NEW YORK.
 3. THE RETAINING WALL DESIGN SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, FIFTEENTH EDITION, 1992 WITH INTERIM SPECIFICATIONS THROUGH 1993.
 4. THE CONTRACTOR SHALL SUBMIT STAMPED SHOP DRAWINGS AND INSTALLATION PLAN FOR APPROVAL AT LEAST TWO WEEKS PRIOR TO FABRICATION OF THE UNITS.
 5. THE WALL LAYOUT SHOWN IS FOR ESTIMATING PURPOSES ONLY, THE FINAL PANEL LAYOUT, LOCATION AND DEPTH OF THE STEPS IN THE WALL SHALL BE DETAILED BY THE MANUFACTURER.
 6. SOIL PROPERTIES:
 UNIT WEIGHT OF SOIL.....120 PCF
 ALLOWABLE BEARING PRESSURE.....1.5 TSF
 COEFFICIENT OF SLIDING FRICTION.....0.50

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CONSTRUCTION
DATE PRELIMISSUED DATE

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	NO.	DATE	REVISION	INT.					
					DESIGNED BY FILE NO. 1087699.00197	ADDRESS 400 ANDREWS ST., ROCHESTER, NY 14604			
					CHECKED BY DATE 10/22/19				
					DRAWN BY				

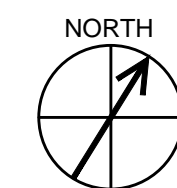
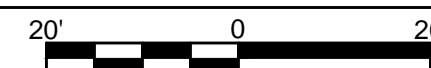


DRAWING NOTES

- 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.
- STORMWATER PUMP STATION PS-1: 8'-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.
- STORMWATER PUMP STATION PS-2: PROVIDE 6'-0" I.D. PACKAGED DUPLEX PUMP STATION WITH FIBERGLASS BASIN, INTEGRAL VALVE CHAMBER, AND WATERTIGHT ANODIZED ALUMINUM DOUBLE-LEAF ACCESS HATCH.
- PROVIDE TIDEFLEX CHECK VALVE AT 12" PVC NORTH INVERT, INSTALLED INSIDE EXISTING 5'-0" MANHOLE.
- PROVIDE TIDEFLEX CHECK VALVE AT 21" RCP EAST INVERT, INSTALLED INSIDE EXISTING 4'-0" MANHOLE.
- STORMWATER FORCEMAIN DISCHARGE TO RIVER - PIPE SIZE AND TYPE AS INDICATED.
- UPON COMPLETION OF STORMWATER PUMP STATION PS-2 REMOVE EXISTING MASONRY WALL COMPLETE.

SITE UTILITY PLAN - STORMWATER PUMP STATIONS

1" = 20'-0"



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CITY OF ROCHESTER

NO.	DATE	REVISION	INT.

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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 WEST SIDE OF
GENESEE RIVER - MO-07 AND MO-10**

ADDRESS
400 ANDREWS ST., ROCHESTER, NY 14604

SHEET DESCRIPTION
**SITE UTILITY PLAN - STORMWATER
PUMP STATIONS**

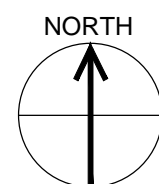
DRAWING LOCATION

C-201



WEST SIDE PUMP STATION

N.T.S. 20' 0 20'



KEYNOTES:

1. PROVIDE NEW CONNECTION FROM RGE 40 TO RGE 40A.
2. PLACE POLE MOUNTED TRANSFORMERS ON POLE RGE 40A TO FEED PUMPS LOCATED IN STORM PUMP STATION.
3. NEW STORM PUMP STATION.
4. WOODEN DOCKS WITH NO EXISTING POWER.

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PROJECT
REDI-GRANTS WEST SIDE OF GENESEE RIVER - MO-07 AND MO-10

ADDRESS
400 ANDREWS ST., ROCHESTER, NY 14604

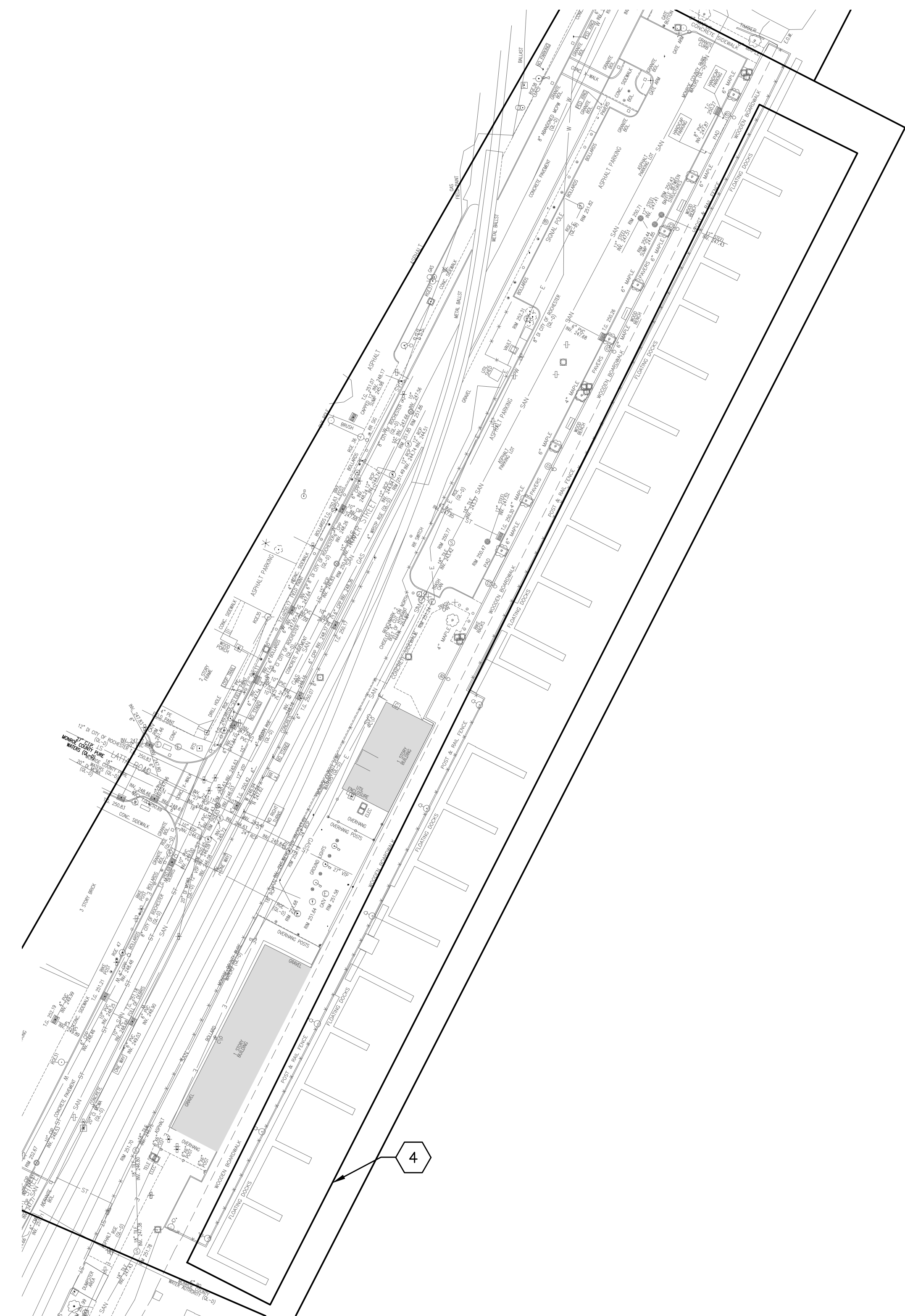
PROJECT
REDI-GRANTS WEST SIDE OF GENESEE RIVER - MO-07 AND MO-10

ADDRESS
400 ANDREWS ST., ROCHESTER, NY 14604

SHEET DESCRIPTION
ELECTRICAL SITE PLANS - PUMP STATION AND NORTHERN DOCKS

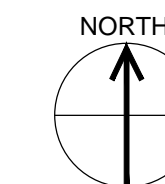
DRAWING LOCATION

E-101



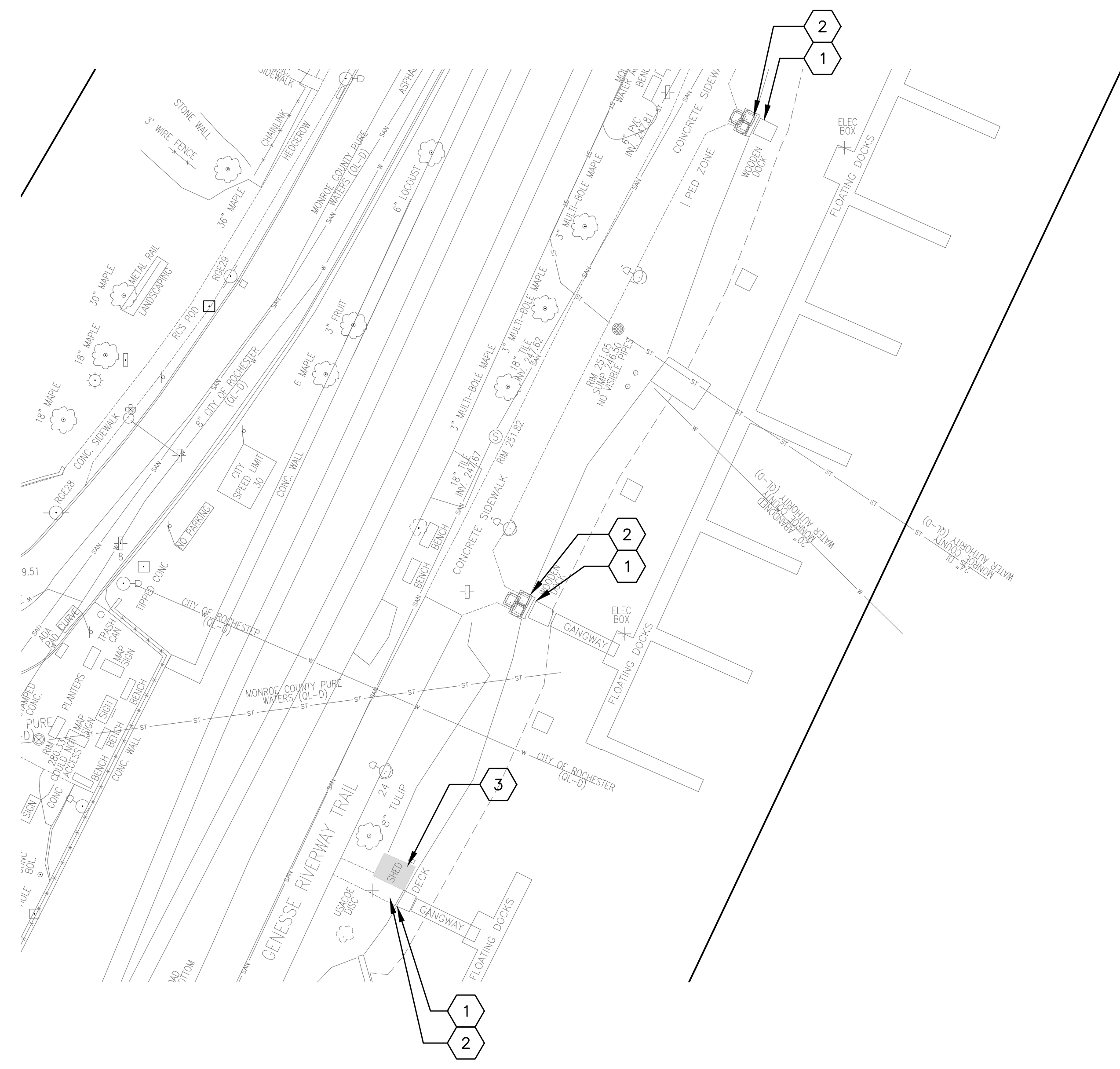
NORTHERN NON-ELECTRICAL DOCKS

N.T.S. 20' 0 20'



PRELIMINARY NOT FOR CONSTRUCTION

DATE: TBD



- KEYNOTES: #
1. DISCONNECT AND REMOVE CONDUIT AND CABLING BACK TO THE END OF THE WOODEN DOCK.
 2. PROVIDE NEMA 4X METALLIC BOX AND EXTEND CONDUIT AND CABLING FROM THE METALLIC BOX TO THE END OF THE WOODEN DOCK.
 3. NORTHERN BUILDING WITH SERVICE CONNECTION.

NORTHERN ELECTRICAL DOCKS
 N.T.S. 20' 0 20' NORTH

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CITY OF ROCHESTER

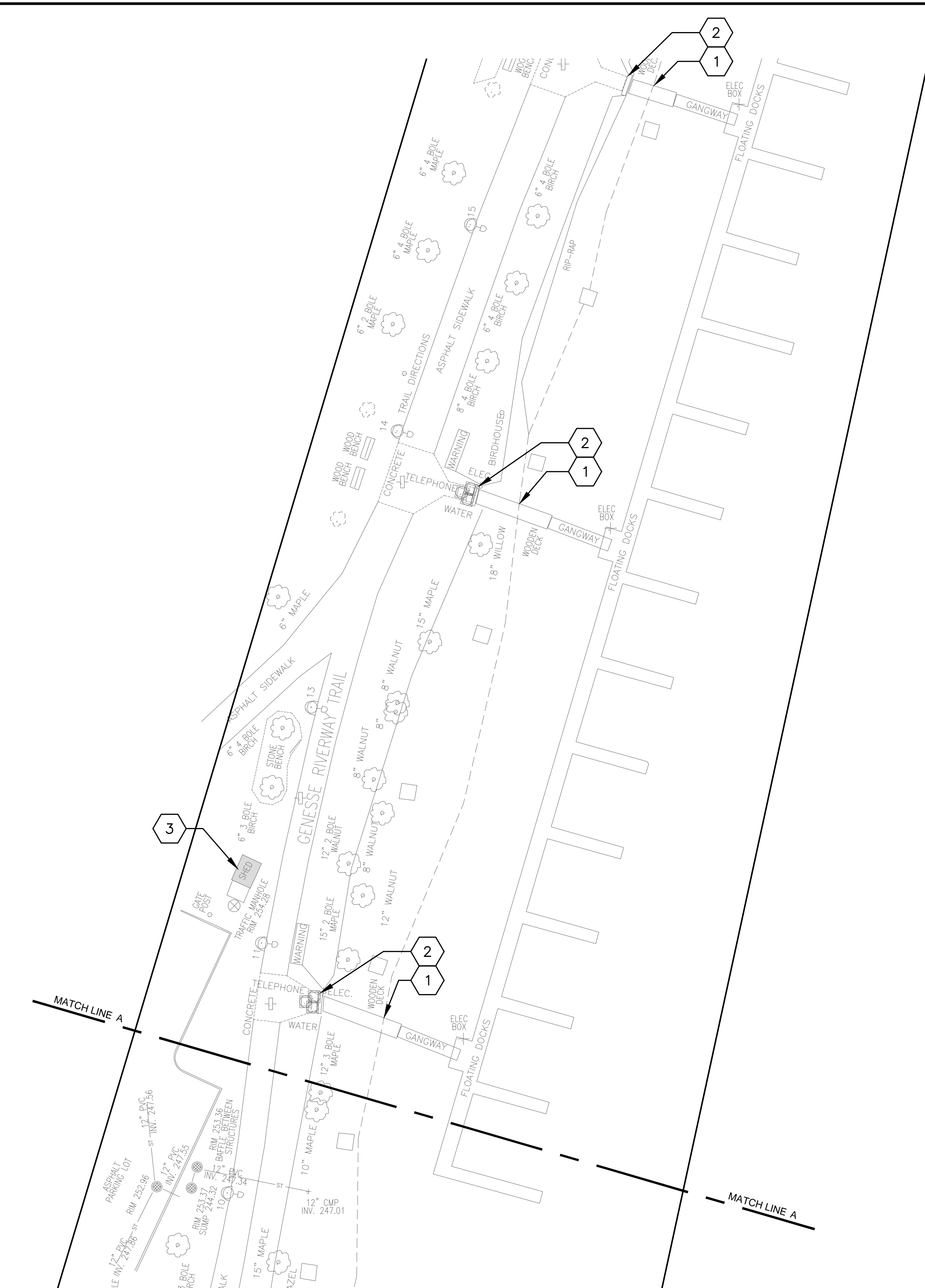
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 FILE NO. 1087699.00197
 DATE

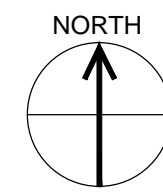
PROJECT
**REDI-GRANTS WEST SIDE OF
GENESSEE RIVER - MO-07 AND MO-10**
 ADDRESS
 400 ANDREWS ST., ROCHESTER, NY 14604

SHEET DESCRIPTION
**ELECTRICAL SITE PLAN - NORTHERN
DOCKS**
 DRAWING LOCATION



SOUTHERN ELECTRICAL DOCKS

N.T.S.



KEYNOTES:

1. DISCONNECT AND REMOVE CONDUIT AND CABLING BACK TO THE END OF THE WOODEN DOCK.
2. PROVIDE NEMA 4X METALLIC BOX AND EXTEND CONDUIT AND CABLING FROM METALLIC BOX TO THE END OF THE WOODEN DOCK.
3. SOUTHERN BUILDING WITH SERVICE CONNECTION.

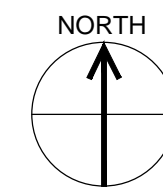
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SOUTHERN ELECTRICAL DOCKS

N.T.S.



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CITY OF ROCHESTER

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DRAWN BY _____

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

PROJECT
**REDI-GRANTS WEST SIDE OF
GENESSEE RIVER - MO-07 AND MO-10**

ADDRESS
400 ANDREWS ST., ROCHESTER, NY 14604

SHEET DESCRIPTION
**ELECTRICAL SITE PLAN - SOUTHERN
DOCKS**

DRAWING LOCATION

APPENDIX D – FLOODPLAIN MODELING REPORT

TECHNICAL MEMO

Project name **WEST 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**

1 Floodplain Modeling

Date January 28, 2021

The City of Rochester has retained Ramboll to conduct an evaluation of proposed improvements to the west side of the Genesee River in Rochester, New York, near the river’s mouth at Lake Ontario. The project area includes an approximately 3,200 foot stretch of Genesee River shoreline adjacent to the Genesee Riverway Trail. Figure 1 displays the extent of the study area.



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

Ramboll
 333 West Washington Street
 Syracuse, NY 13202
 USA

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

The shoreline consists of the City of Rochester's River St. Marina 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**.

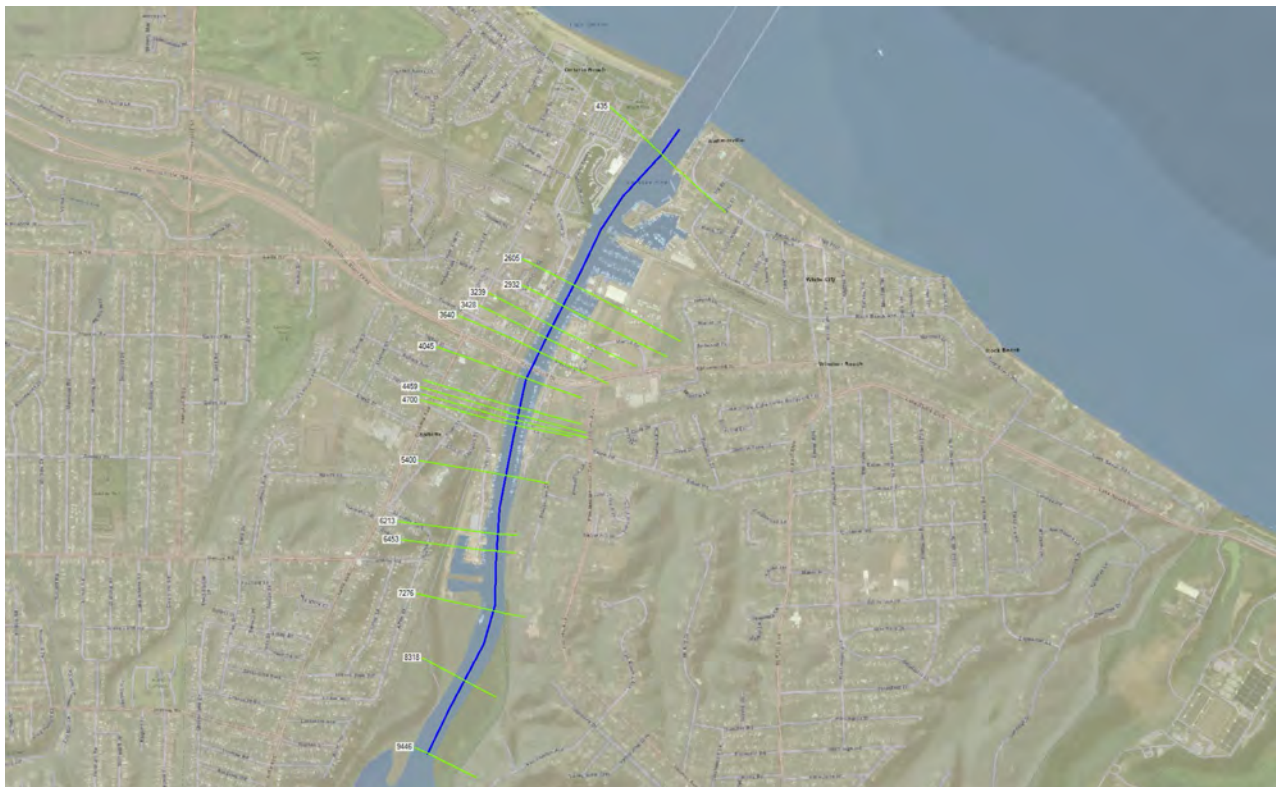


Figure 2. Duplicate Effective Model cross-sections.

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.

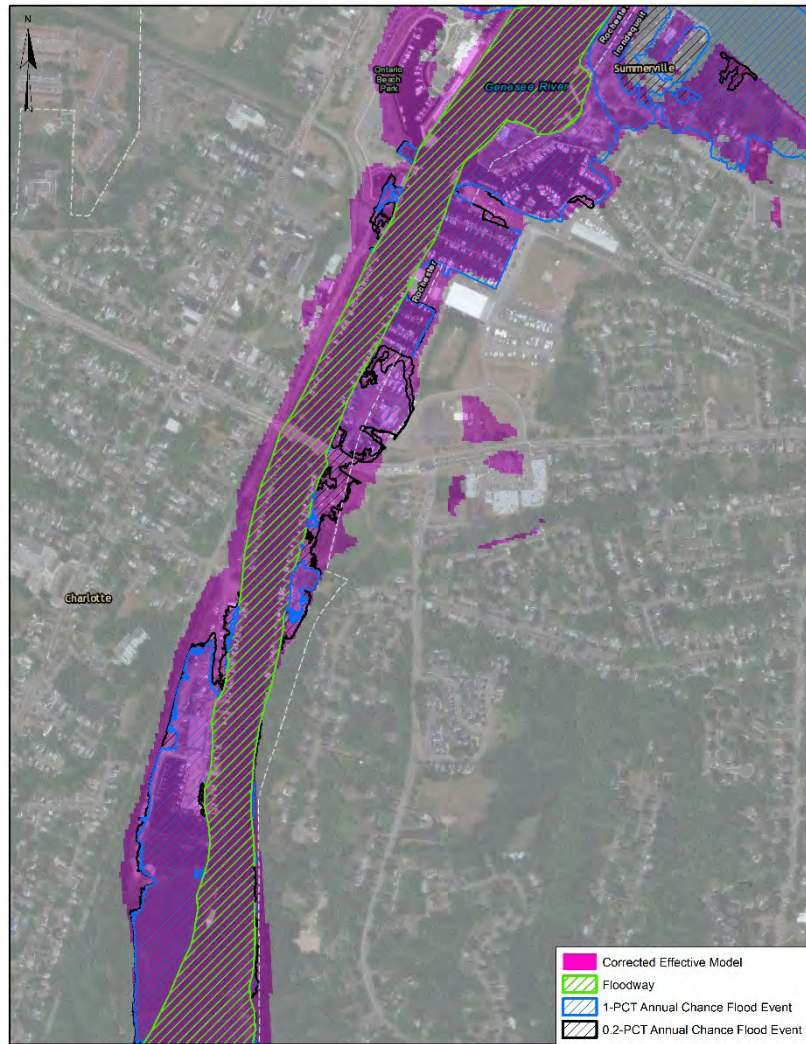


Figure 3. Graphic overlay of the *Corrected Effective Model* simulation results for the 1-percent ACE with the effective FEMA FIRM.

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 west bank of the Genesee River (West Side Project). These improvements include the extension of current rip-rap/retaining walls and the construction of sea walls up to EL 253.0-ft NAVD88.

The WSELs through the proposed project site for the 1-percent ACE for each model and simulation run are summarized in Table 3. 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 up to a 0.1-ft rise from the *Corrected Effective* to the and *Post-Project Model*. The vertical accuracy of the *Corrected Effective* and *Post-Project Models* is 1-ft. This change is within the vertical accuracy of the 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. 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)
5400 / 5625	247.5	247.8	253.2*	253.3
5070	247.4*	247.7*	253.1	253.1
4632 / 4532	247.1	247.4	253.1	253.1
4459 / 4441	247.0	247.1	253.1	253.1
4345	247.1*	247.2*	252.2	252.2
4233	247.1*	247.2*	252.1	252.1
4045 / 4033	247.2	247.2	252.2	252.2
3640 / 3723	247.3	247.3	252.1	252.1
3239 / 3165	247.2	247.2	251.5	251.5
2605 / 2454	247.1	247.1	251.8	251.8
2395	247.1*	247.1*	251.6	251.6

*The **Duplicate** and **Duplicate Effective Models** did not contain a cross-section at or near river stations 2395, 4233, 4345, or 5070 and the **Corrected Effective Model** did not contain a cross-section at or near river station 5400 / 5625 so these values were interpolated from the HEC-RAS WSEL profile plots for each model.

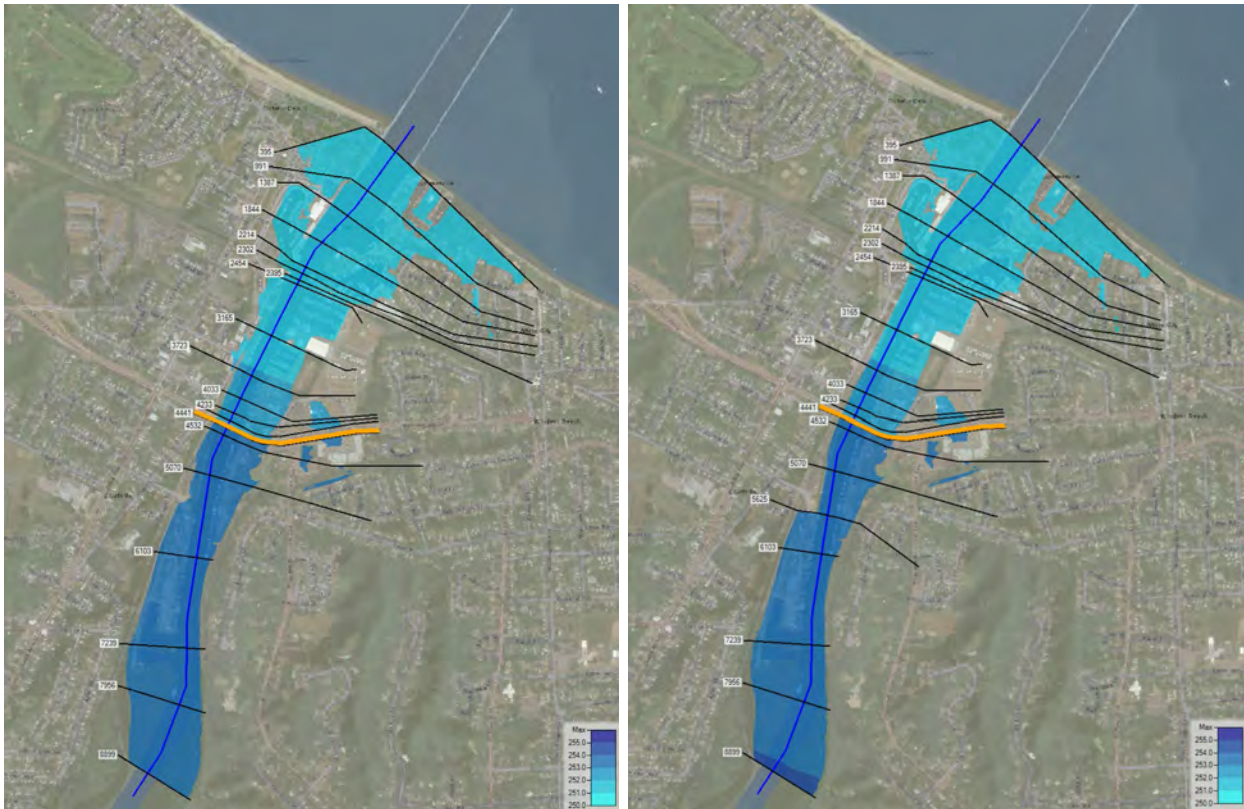


Figure 4. Corrected Effective (left) and Post-Project (right) models 1-percent ACE WSELs.

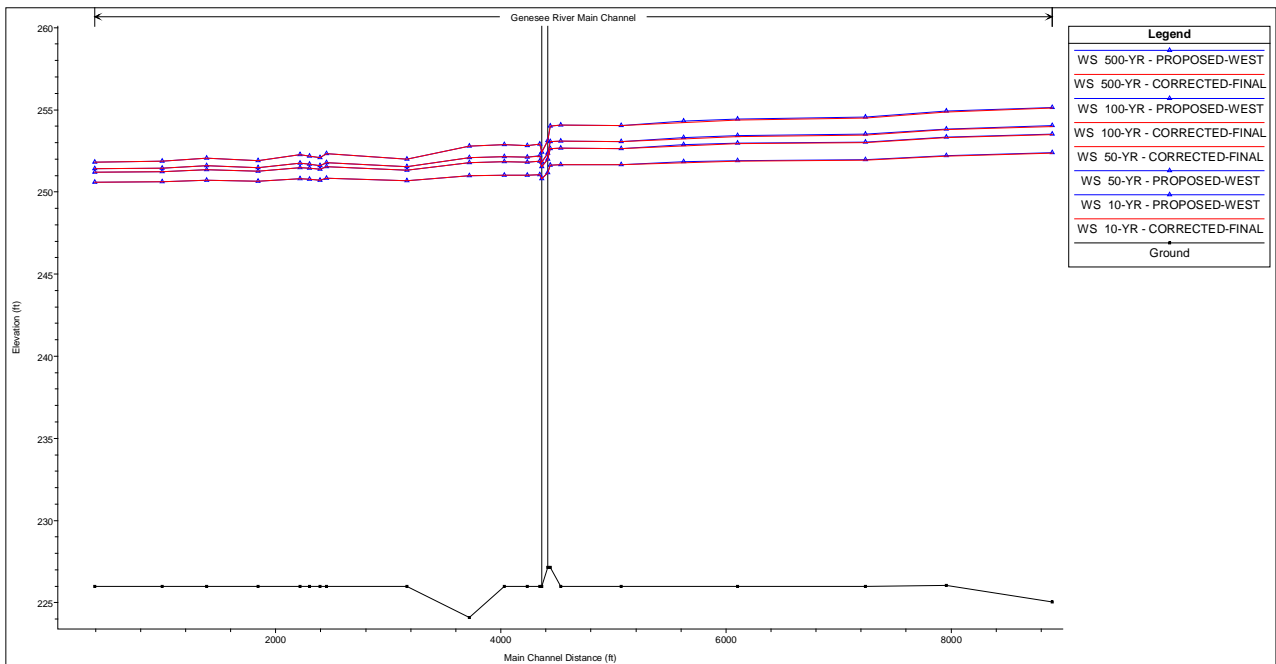


Figure 5. Corrected Effective and Post-Project Models WSEL profile plots for 10-, 2-, 1-, and 0.2-percent ACE.

1.4 Model Results and Discussion

The **Post-Project Conditions Model** indicated that the proposed improvements to the west bank of the Genesee River (West Side Project) would be sufficient to protect against the 10- and 2-percent ACE for the entire length of the proposed project. However, the proposed project would not be sufficient to protect against the 1- and 0.2-percent ACE for areas upstream of the Pattonwood Bridge. Table 3 displays the WSELs for the 1- and 0.2-percent ACE for each model cross-section that intersects the project area.

Table 3. 1- and 0.2-percent ACE WSELs for model cross-sections that intersect the west side project area.

Cross Section ID	Post-Project (ft NAVD88)		
	1-percent ACE	0.2-percent ACE	Proposed Project Height (ft NAVD88)
5625	253.1	254.0	253
5070	253.1	254.1	253
4532	253.1	254.1	253
4441	253.3	254.3	253
4400	Pattonwood Drive Bridge		
4345	252.2	252.9	253
4233	252.1	252.8	253
4033	252.2	252.9	253
3723	252.1	252.8	253
3165	251.5	252.0	253
2454	251.8	252.3	253
2395	251.6	252.1	253

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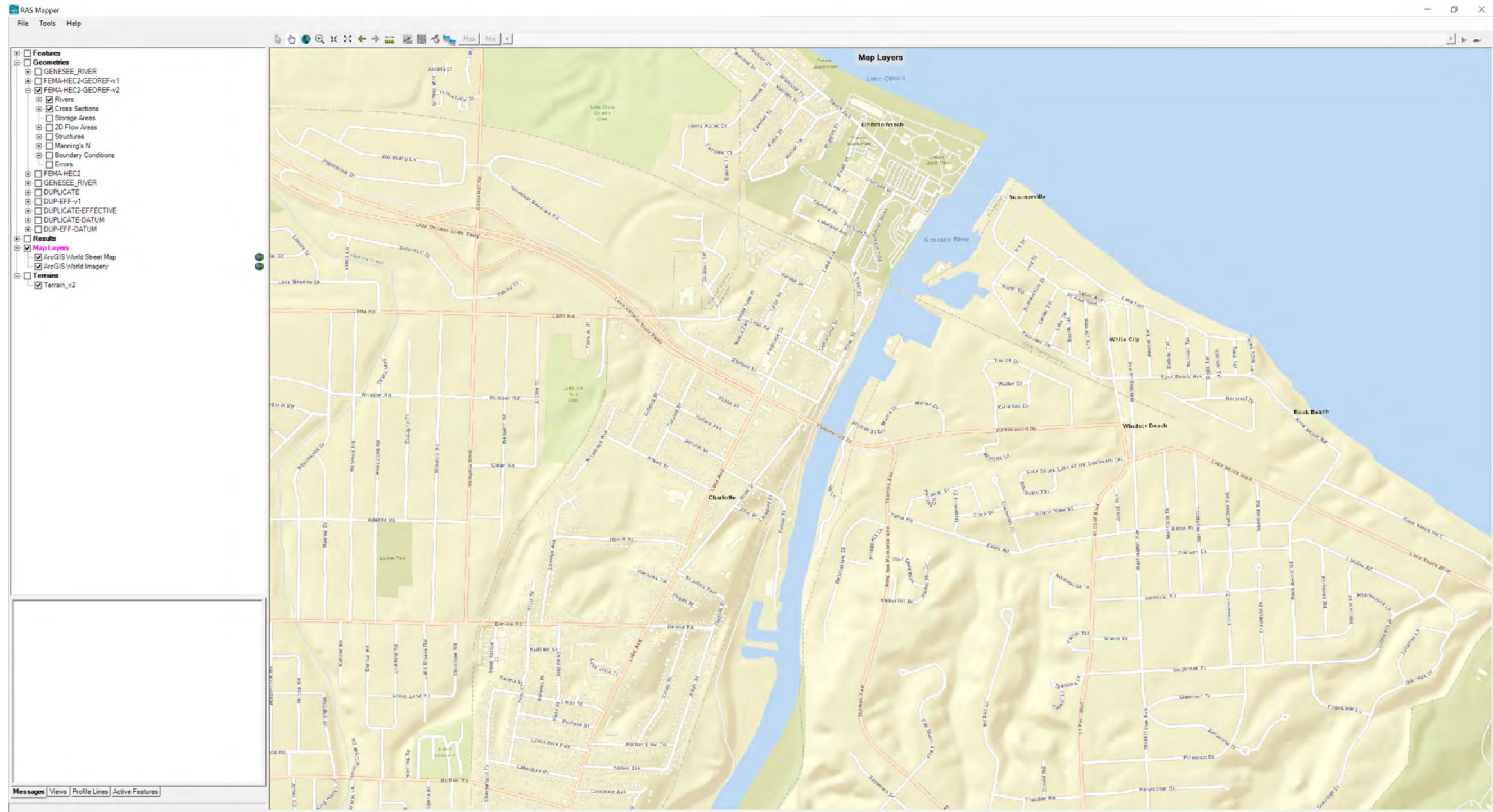
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APPENDIX A

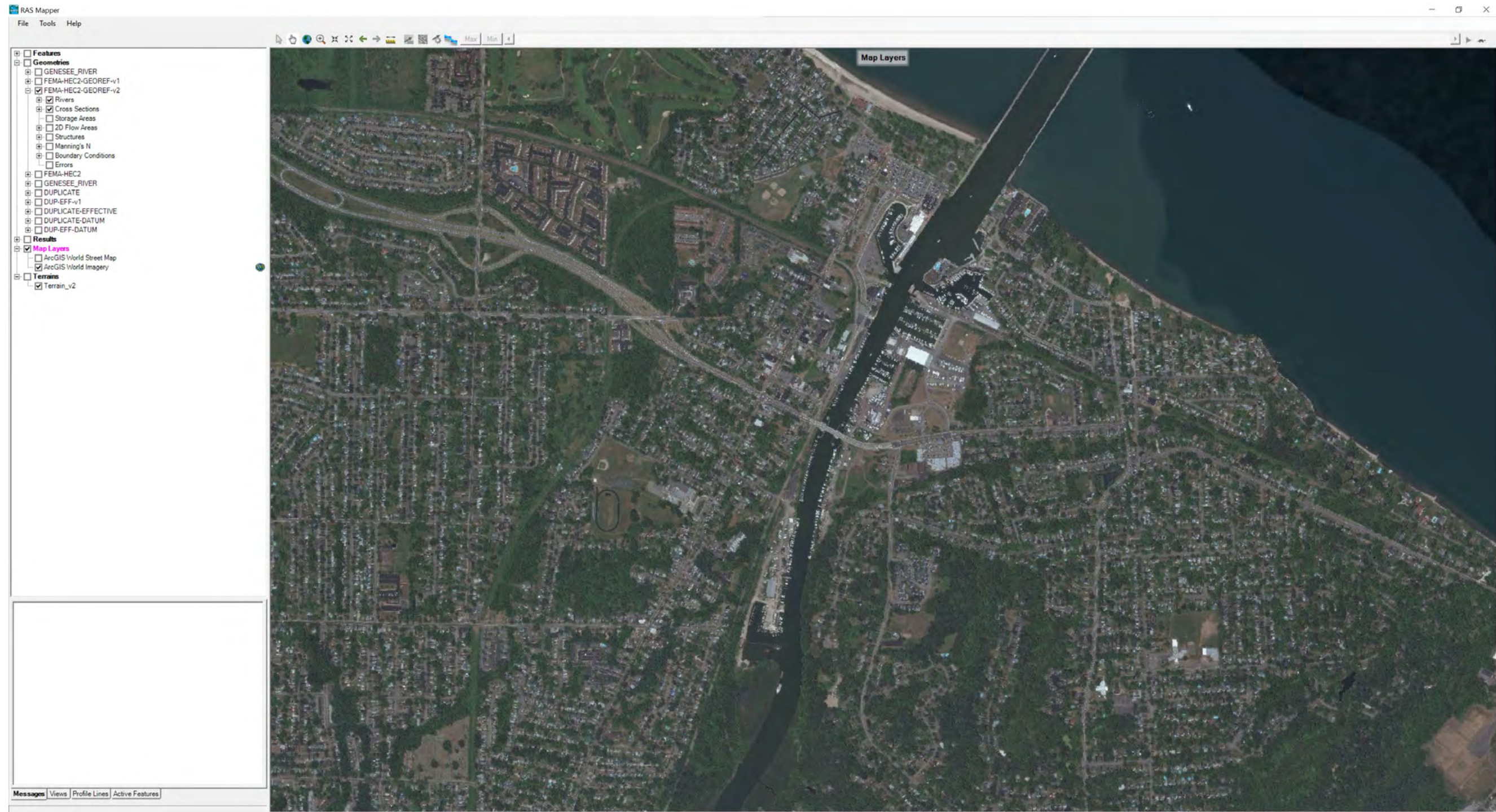
H&H Modeling

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

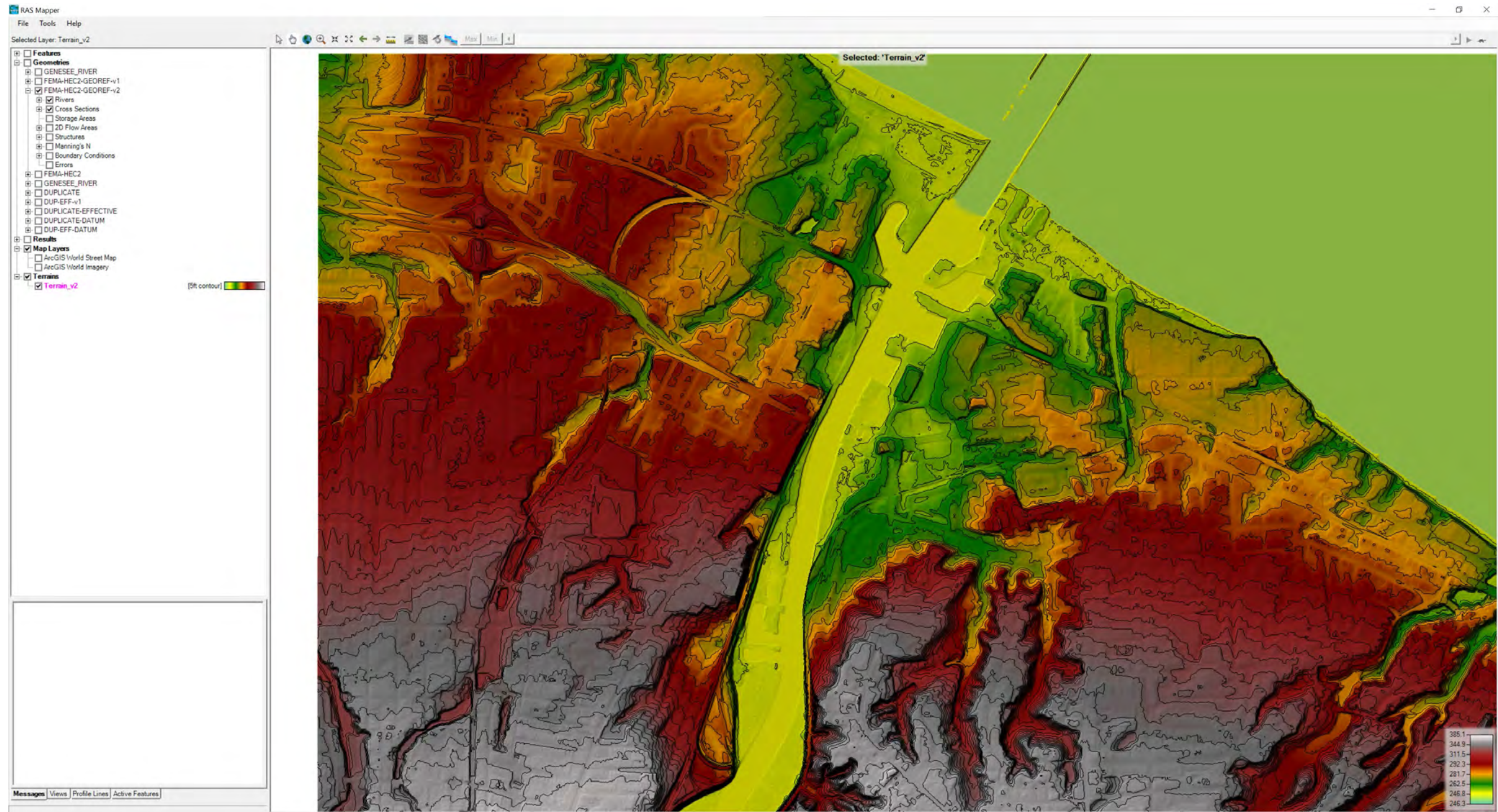
Street Map



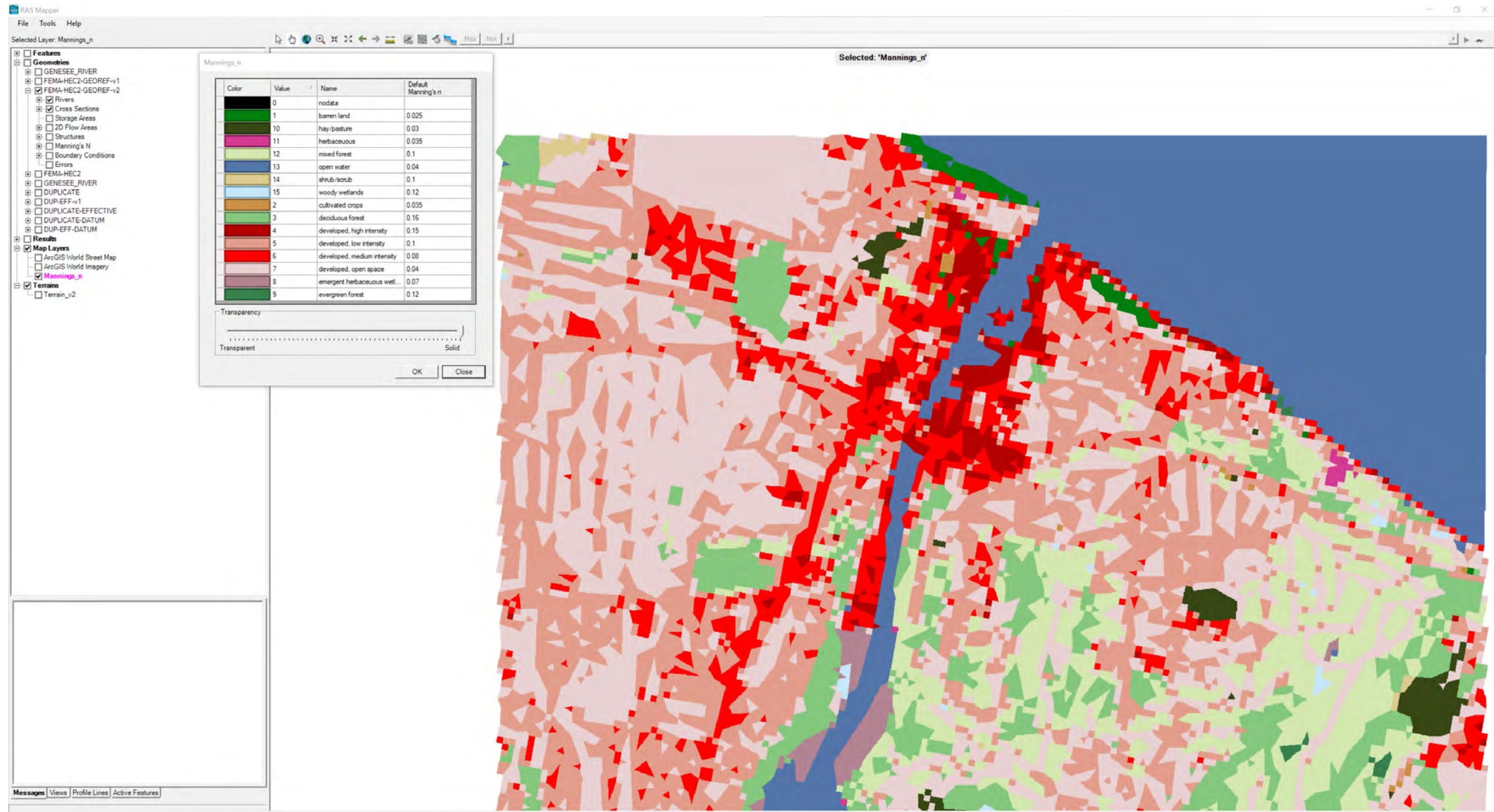
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Genesee River, Rochester, NY
Orthoimagery



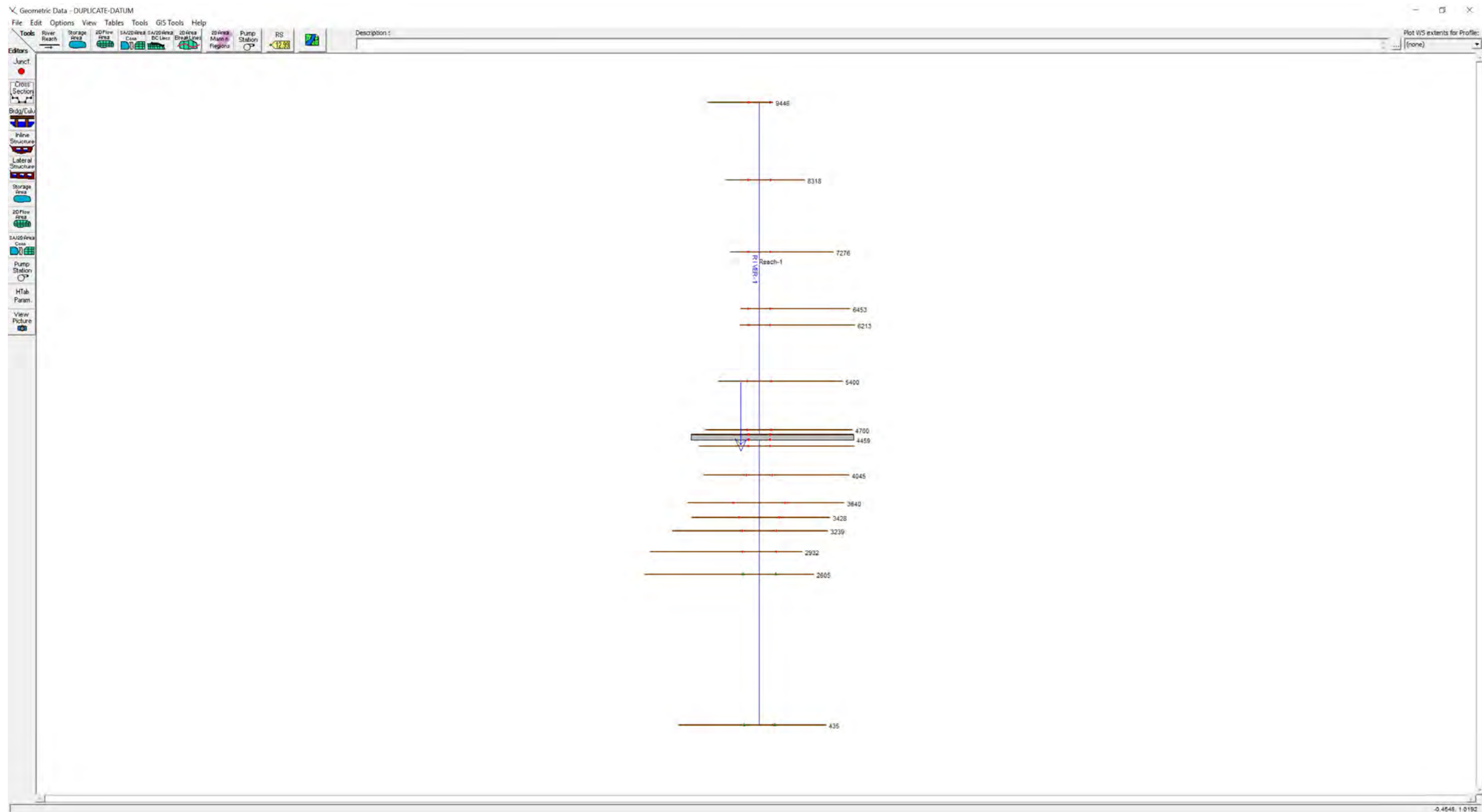
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Genesee River, Rochester, NY
Terrain



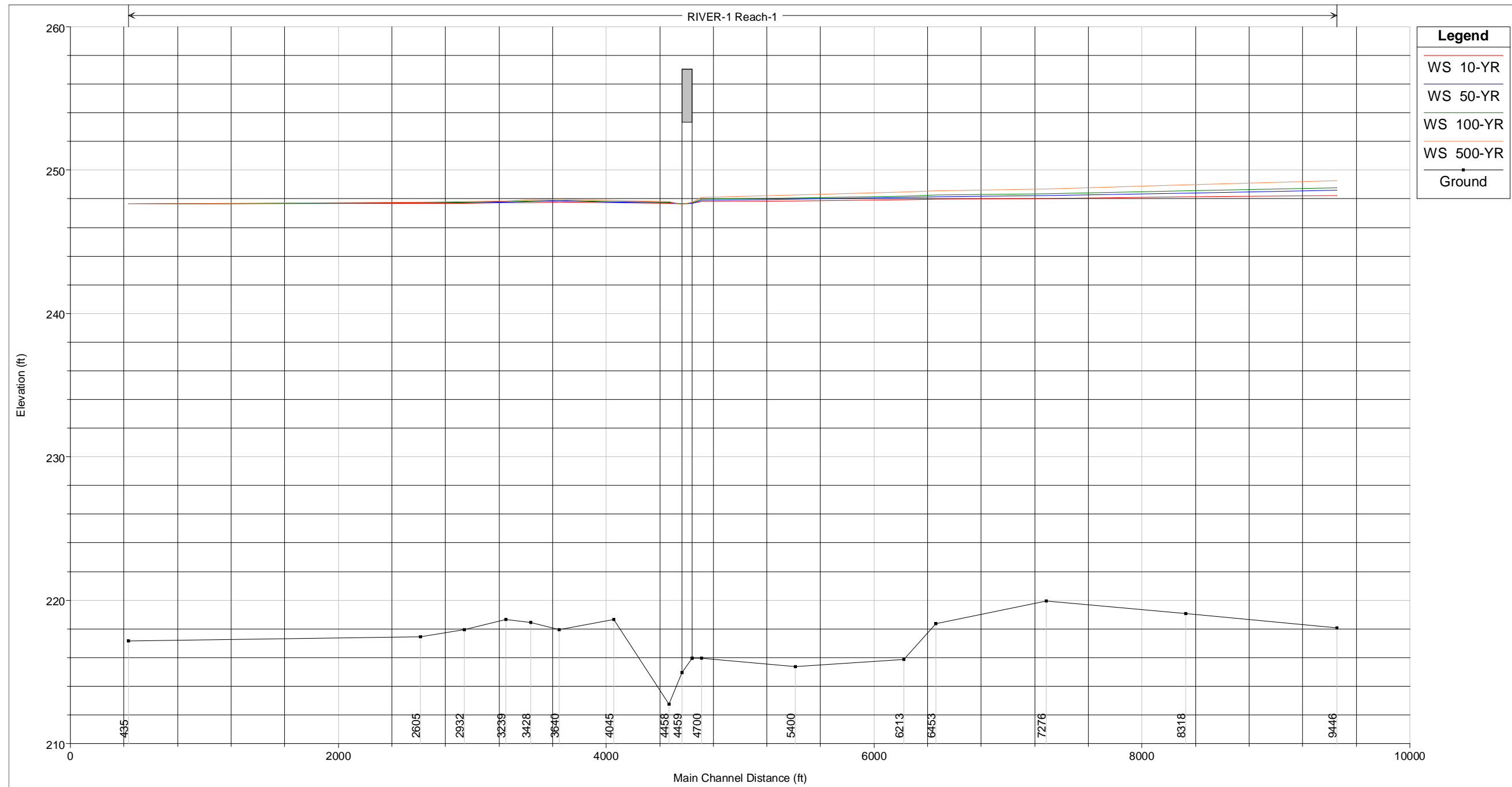
HEC-RAS 1-D H and H Model
Genesee River, Rochester, NY
Land Use/Land Cover



Geometry Plot



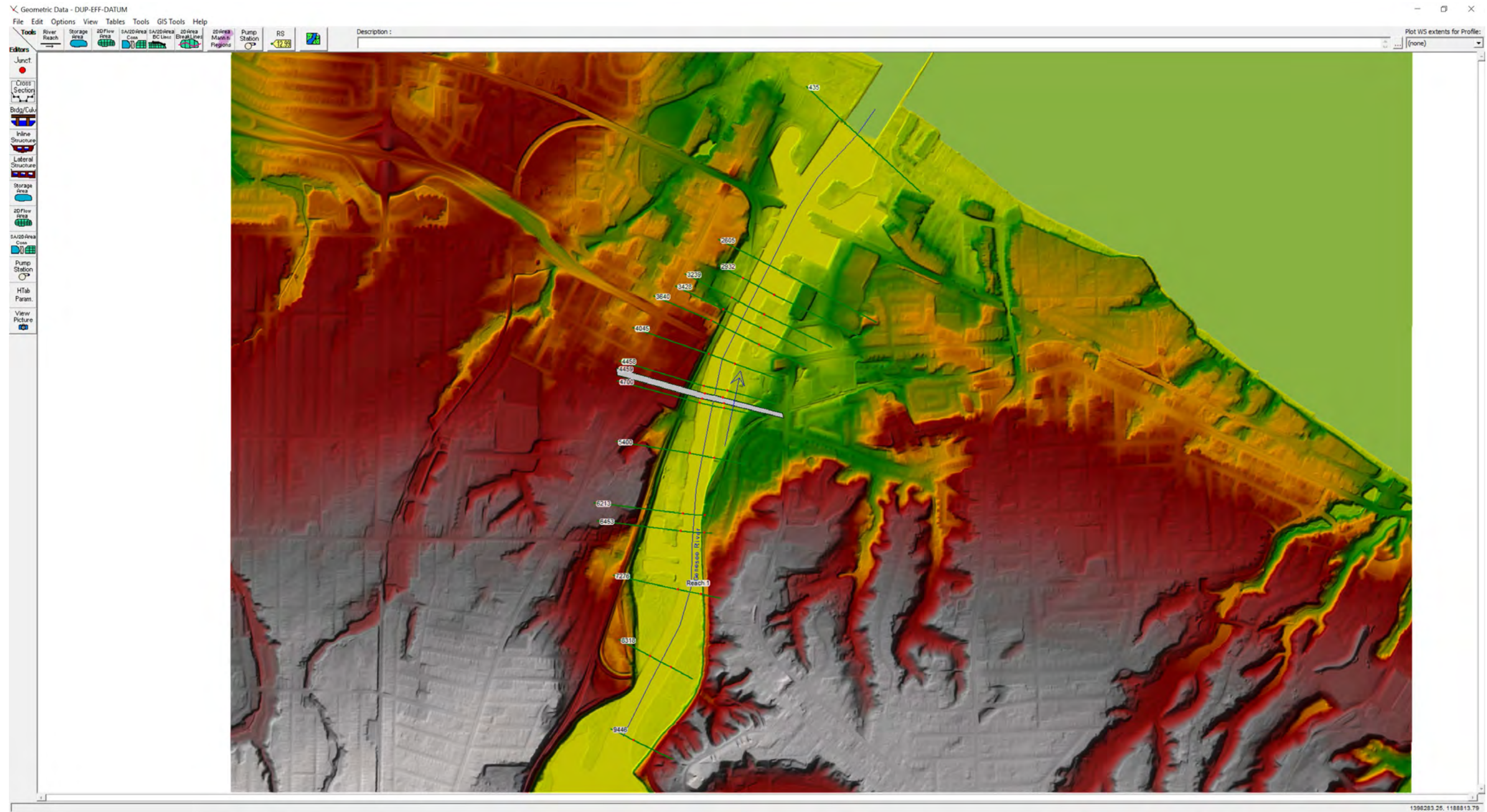
Profile Plot



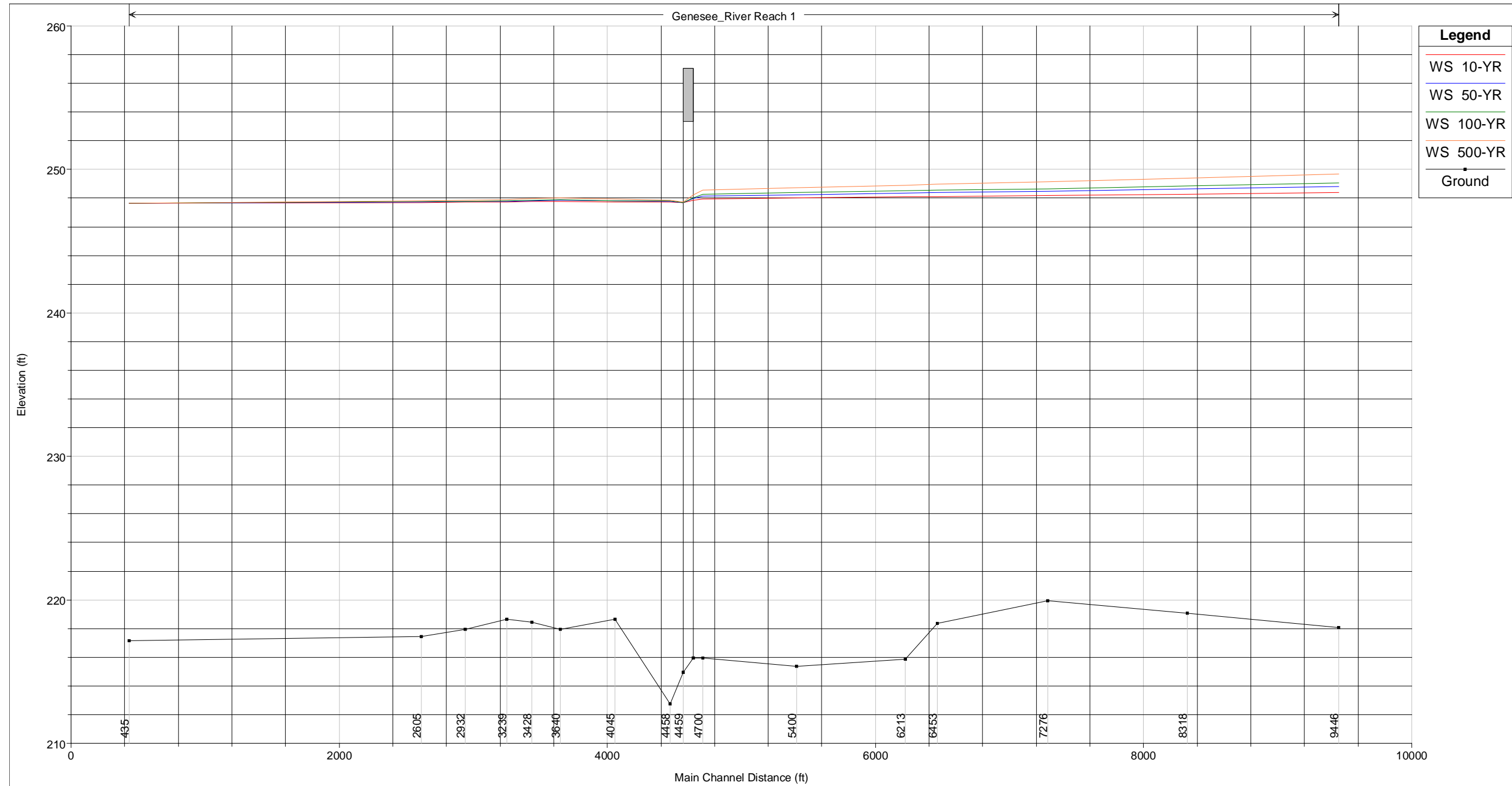
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach-1	435	10-YR	23000	217.15	247	225.53	247.06	0.000021	2.04	11293.85	2098.6	0.07
Reach-1	435	50-YR	29000	217.15	247	226.43	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
Reach-1	2932	10-YR	23000	217.95	247.06		247.14	0.00003	2.2	10479.47	488.97	0.08
Reach-1	2932	50-YR	29000	217.95	247.1		247.21	0.000047	2.76	10496.94	488.97	0.11
Reach-1	2932	100-YR	32000	217.95	247.12		247.26	0.000057	3.05	10507.18	488.97	0.12
Reach-1	2932	500-YR	39000	217.95	247.17		247.39	0.000085	3.7	10535.09	488.98	0.14
Reach-1	3239	10-YR	23000	218.65	247.08		247.14	0.000025	2.03	11304.24	500.08	0.08
Reach-1	3239	50-YR	29000	218.65	247.13		247.23	0.000039	2.56	11327.99	500.08	0.09
Reach-1	3239	100-YR	32000	218.65	247.16		247.28	0.000048	2.82	11341.91	500.08	0.1
Reach-1	3239	500-YR	39000	218.65	247.23		247.41	0.00007	3.43	11379.77	500.08	0.13
Reach-1	3428	10-YR	23000	218.45	247.11		247.15	0.000016	1.69	13581.31	575.06	0.06
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
Reach-1	3640	10-YR	23000	217.95	247.13		247.15	0.000009	1.29	17773.09	743.07	0.05
Reach-1	3640	50-YR	29000	217.95	247.2		247.25	0.000014	1.63	17829.35	743.07	0.06
Reach-1	3640	100-YR	32000	217.95	247.25		247.3	0.000017	1.79	17862.27	743.07	0.06
Reach-1	3640	500-YR	39000	217.95	247.37		247.44	0.000025	2.17	17951.48	743.07	0.08
Reach-1	4045	10-YR	23000	218.65	247.09		247.18	0.000033	2.49	9252.05	385.07	0.09
Reach-1	4045	50-YR	29000	218.65	247.14		247.29	0.000052	3.13	9271.58	385.07	0.11
Reach-1	4045	100-YR	32000	218.65	247.17		247.35	0.000064	3.45	9283.03	385.07	0.12
Reach-1	4045	500-YR	39000	218.65	247.25		247.52	0.000094	4.19	9314.08	385.07	0.15
Reach-1	4458	10-YR	23000	212.75	247.06		247.22	0.000069	3.15	7294	300.68	0.11
Reach-1	4458	50-YR	29000	212.75	247.1		247.35	0.00011	3.97	7305.35	300.7	0.14
Reach-1	4458	100-YR	32000	212.75	247.12		247.42	0.000133	4.38	7311.99	300.71	0.16
Reach-1	4458	500-YR	39000	212.75	247.18		247.62	0.000196	5.32	7329.99	300.75	0.19
Reach-1	4459	10-YR	23000	214.95	246.99		247.31	0.000167	4.52	5087.81	247.33	0.18
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
Reach-1	4459	500-YR	39000	214.95	246.98		247.89	0.000482	7.67	5083.61	247.27	0.3

Reach-1	4545.5	Bridge									
Reach-1	4632 10-YR	23000	215.95	247.04	229.62	247.33	0.000146	4.33	5317.27	249.07	0.17
Reach-1	4632 50-YR	29000	215.95	247.06	230.89	247.53	0.000232	5.45	5323.31	249.15	0.21
Reach-1	4632 100-YR	32000	215.95	247.08	231.57	247.64	0.000282	6.01	5326.95	249.19	0.23
Reach-1	4632 500-YR	39000	215.95	247.12	232.91	247.95	0.000417	7.31	5337.25	249.33	0.28
Reach-1	4700 10-YR	23000	215.95	247.17		247.37	0.000097	3.54	6497.14	298.73	0.13
Reach-1	4700 50-YR	29000	215.95	247.28		247.58	0.000152	4.44	6528.54	299.37	0.17
Reach-1	4700 100-YR	32000	215.95	247.34		247.71	0.000183	4.89	6547.35	299.76	0.18
Reach-1	4700 500-YR	39000	215.95	247.52		248.06	0.000266	5.91	6599.97	300.83	0.22
Reach-1	5400 10-YR	23000	215.35	247.23		247.44	0.000106	3.68	6260.24	355.59	0.15
Reach-1	5400 50-YR	29000	215.35	247.37		247.7	0.000164	4.6	6310.13	358.85	0.19
Reach-1	5400 100-YR	32000	215.35	247.46		247.85	0.000197	5.06	6339.98	360.78	0.21
Reach-1	5400 500-YR	39000	215.35	247.68		248.26	0.000282	6.09	6423.24	366.13	0.25
Reach-1	6213 10-YR	23000	215.85	247.31		247.53	0.000094	3.74	6312.04	660.89	0.15
Reach-1	6213 50-YR	29000	215.85	247.49		247.83	0.000145	4.67	6435.16	678.59	0.18
Reach-1	6213 100-YR	32000	215.85	247.6		248.01	0.000174	5.13	6507.96	680.06	0.2
Reach-1	6213 500-YR	39000	215.85	247.89		248.48	0.000247	6.16	6707.05	684.36	0.24
Reach-1	6453 10-YR	23000	218.35	247.34		247.55	0.000097	3.67	6586.63	567.16	0.15
Reach-1	6453 50-YR	29000	218.35	247.54		247.87	0.000149	4.58	6718.65	665.45	0.18
Reach-1	6453 100-YR	32000	218.35	247.66		248.05	0.000178	5.02	6797.51	670.28	0.2
Reach-1	6453 500-YR	39000	218.35	247.98		248.54	0.000251	6.01	7014.84	683.09	0.24
Reach-1	7276 10-YR	23000	219.95	247.41		247.65	0.000122	3.95	6282.2	425.85	0.17
Reach-1	7276 50-YR	29000	219.95	247.65		248.02	0.000185	4.91	6385.38	441.87	0.2
Reach-1	7276 100-YR	32000	219.95	247.79		248.23	0.00022	5.38	6447.24	451.2	0.22
Reach-1	7276 500-YR	39000	219.95	248.16		248.79	0.000306	6.43	6619.83	476.27	0.26
Reach-1	8318 10-YR	23000	219.05	247.53		247.78	0.000121	3.96	5804.22	319.3	0.16
Reach-1	8318 50-YR	29000	219.05	247.83		248.21	0.000183	4.91	5901.29	321.49	0.2
Reach-1	8318 100-YR	32000	219.05	248.01		248.46	0.000216	5.37	5957.48	322.74	0.22
Reach-1	8318 500-YR	39000	219.05	248.47		249.1	0.000298	6.39	6107.26	326.07	0.26
Reach-1	9446 10-YR	23000	218.05	247.66		247.92	0.000128	4.1	5606.89	304.26	0.17
Reach-1	9446 50-YR	29000	218.05	248.03		248.43	0.000192	5.07	5723.4	349.2	0.21
Reach-1	9446 100-YR	32000	218.05	248.24		248.71	0.000226	5.53	5802.34	400.96	0.22
Reach-1	9446 500-YR	39000	218.05	248.79		249.45	0.000305	6.55	6079.26	625.75	0.26

Geometry Plot



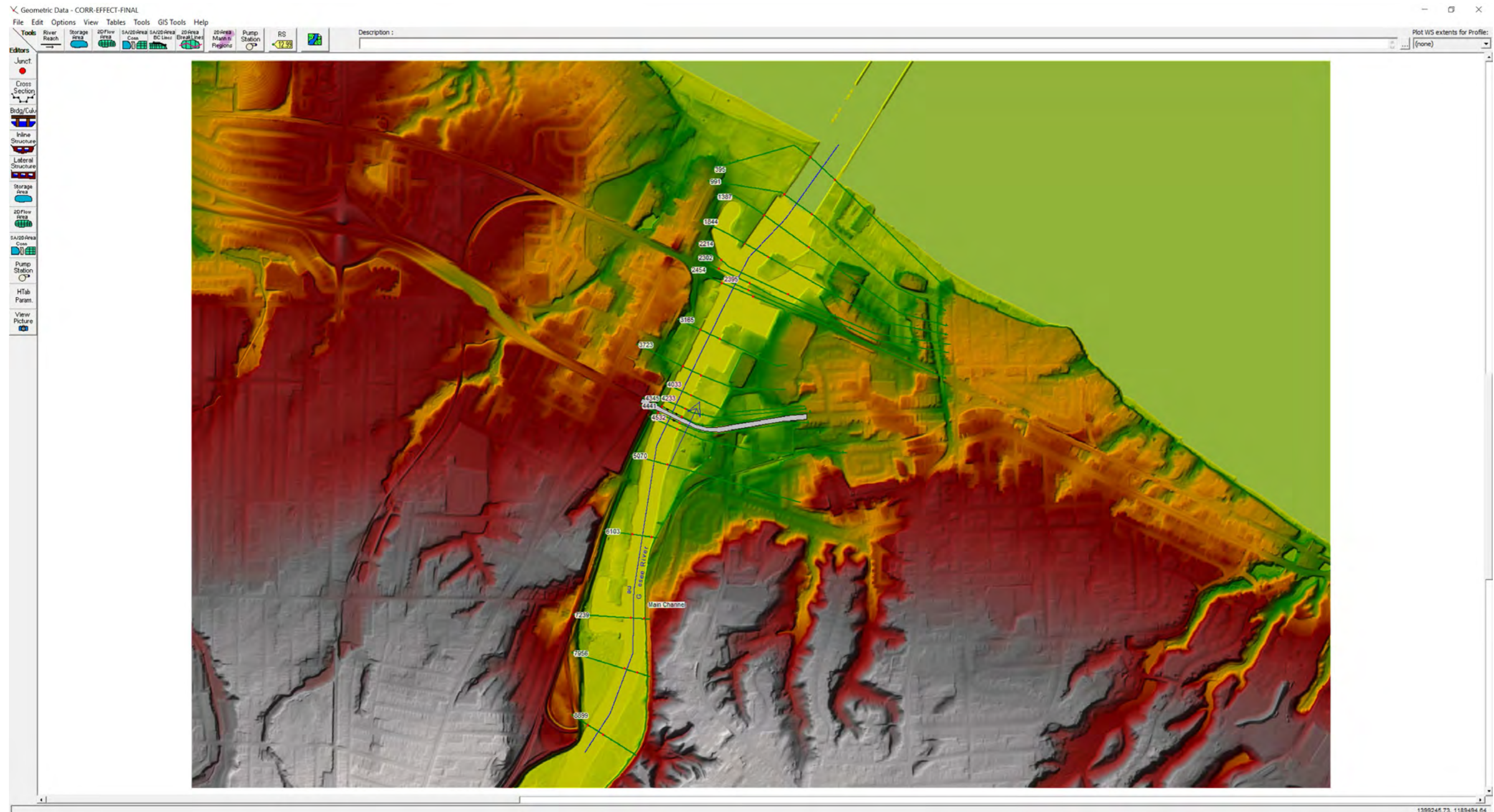
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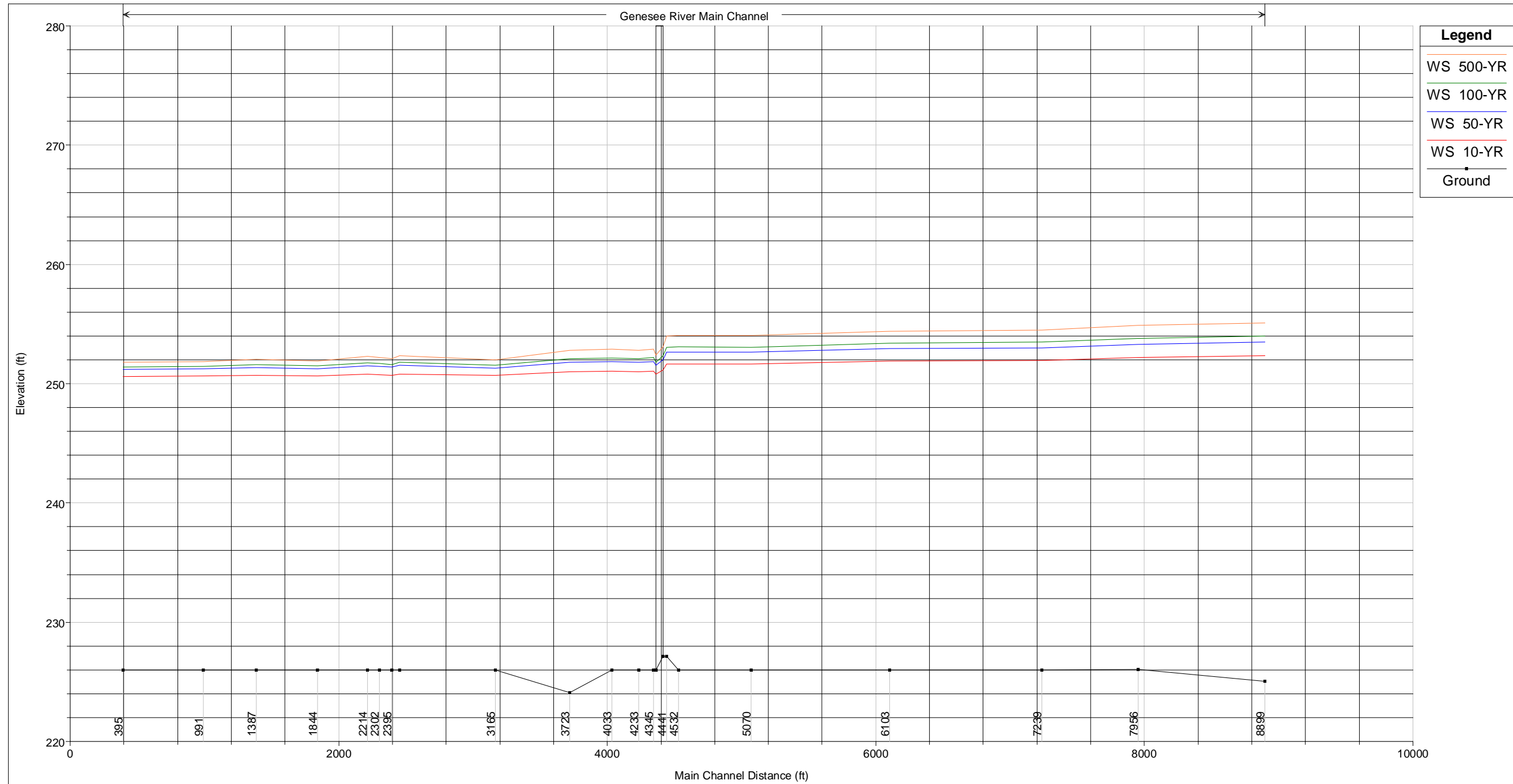
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude #	Chl
Reach 1	435	10-YR	23000	217.15	247	225.52	247.06	0.000035	2.04	11294.55	2097.65	0.07	
Reach 1	435	50-YR	29000	217.15	247	226.43	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

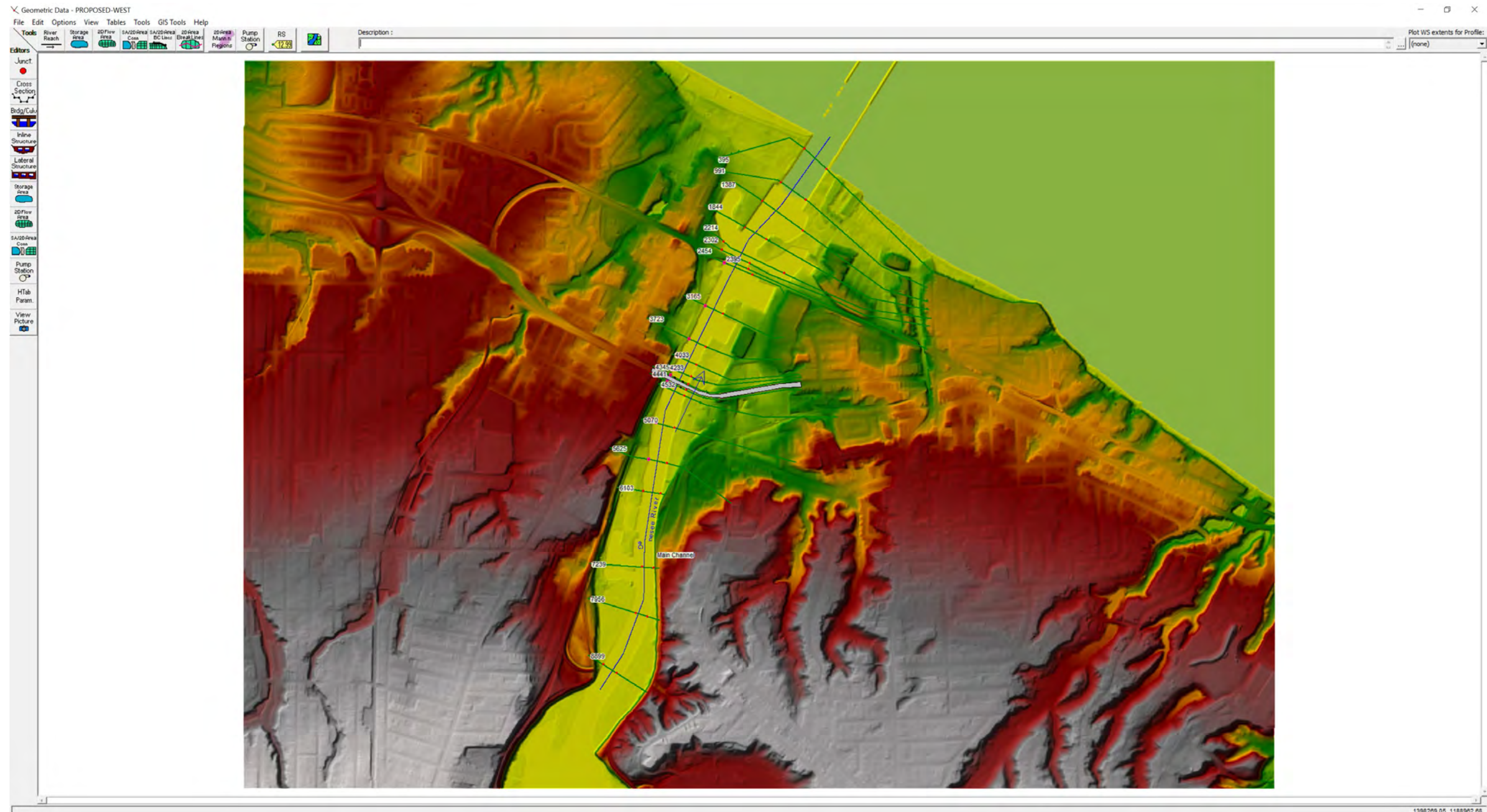
HEC-RAS 1-D H and H Model
 Genesee River, Rochester, NY

Project: GeneseeRiver-Corr-Effective
 Plan: CORR-EFFECT-FINAL

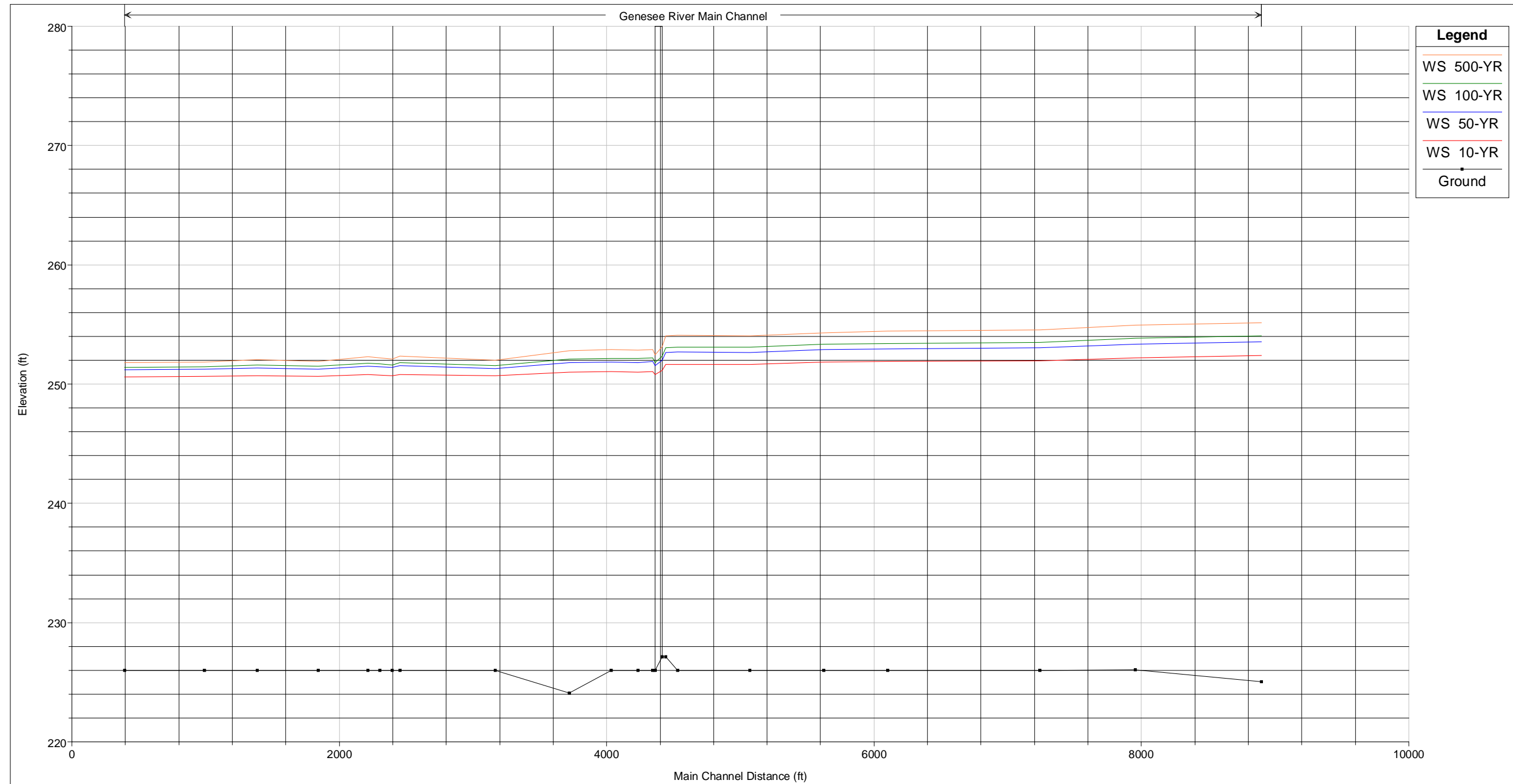
Geometry: CORR-EFFECT-FINAL
 Steady Flow: FEMA FIS 10, 50, 100, 500-YR [FINAL]

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 Left (ft)
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	0.000094	3.43	6795.23	448.07		0.14	253
Main Channel		2395 50-YR	29000	226	251.38	236.67	251.65	0.000134	4.18	7177.26	760.07		0.16	253
Main Channel		2395 100-YR	32000	226	251.61	237.14	251.93	0.000157	4.56	7363.1	854.28		0.18	253
Main Channel		2395 500-YR	39000	226	252.09	238.21	252.54	0.000215	5.41	7787.09	904.5		0.21	253
Main Channel		2454 10-YR	23000	226	250.82	234.36	250.92	0.000048	2.48	9468.01	768.13		0.1	253
Main Channel		2454 50-YR	29000	226	251.53	235.26	251.67	0.000068	3.02	10030.56	832.86		0.12	253
Main Channel		2454 100-YR	32000	226	251.79	235.66	251.95	0.00008	3.28	10255.02	874.12		0.13	253
Main Channel		2454 500-YR	39000	226	252.34	236.56	252.57	0.000108	3.89	10744.92	891.17		0.15	253
Main Channel		3165 10-YR	23000	226	250.69	239.04	251.08	0.000281	5.01	4601.9	435.5		0.23	253
Main Channel		3165 50-YR	29000	226	251.32	240.76	251.89	0.000391	6.07	4798.55	485.7		0.27	253
Main Channel		3165 100-YR	32000	226	251.54	241.47	252.22	0.000455	6.6	4869.57	519.98		0.29	253
Main Channel		3165 500-YR	39000	226	251.99	242.96	252.94	0.000618	7.82	5026.21	579.5		0.34	253

Main Channel	3723	10-YR	22500	224.1	250.99	234.14	251.2	0.000132	3.65	6863.46	640.84	0.14	253
Main Channel	3723	50-YR	27200	224.1	251.79	235.1	252.06	0.00017	4.23	7380.11	660.74	0.16	253
Main Channel	3723	100-YR	29500	224.1	252.1	235.54	252.41	0.00019	4.51	7590.66	675.83	0.17	253
Main Channel	3723	500-YR	34700	224.1	252.81	236.45	253.2	0.000235	5.12	8076.19	696.6	0.19	253
Main Channel	4033	10-YR	22500	226	251.03	235.64	251.24	0.000143	3.75	7051.54	753.52	0.15	253
Main Channel	4033	50-YR	27200	226	251.84	236.56	252.12	0.00018	4.32	7637.41	967.64	0.17	253
Main Channel	4033	100-YR	29500	226	252.16	236.97	252.48	0.000199	4.59	7871.62	1014.58	0.17	253
Main Channel	4033	500-YR	34700	226	252.88	237.88	253.28	0.000243	5.18	8395.86	1135.09	0.19	253
Main Channel	4233	10-YR	22500	226	251.01	239.19	251.3	0.000189	4.37	5662.26	836.44	0.19	253
Main Channel	4233	50-YR	27200	226	251.81	239.98	252.19	0.000235	5.02	6099.74	1019.77	0.21	253
Main Channel	4233	100-YR	29500	226	252.12	240.37	252.56	0.000259	5.34	6273.55	1037.96	0.22	253
Main Channel	4233	500-YR	34700	226	252.83	241.17	253.38	0.000313	6.01	6661.41	1195.68	0.24	253
Main Channel	4345	10-YR	22500	226	251.06	236.48	251.33	0.0002	4.17	5856.06	650.11	0.16	253
Main Channel	4345	50-YR	27200	226	251.87	237.36	252.23	0.000257	4.81	6311.39	666.65	0.19	253
Main Channel	4345	100-YR	29500	226	252.2	237.77	252.6	0.000286	5.12	6493.4	669.99	0.2	253
Main Channel	4345	500-YR	34700	226	252.92	238.67	253.43	0.000353	5.79	6899.5	922.25	0.22	253
Main Channel	4400	PATTONWOOD DR	Bridge										
Main Channel	4441	10-YR	22500	227.15	251.64	234.2	251.83	0.000132	3.49	6949.6	827.53	0.13	253
Main Channel	4441	50-YR	27200	227.15	252.64	235.02	252.88	0.000166	4.01	7523.98	922.68	0.15	253
Main Channel	4441	100-YR	29500	227.15	253.06	235.41	253.34	0.000184	4.26	7803.53	1034.68	0.15	253
Main Channel	4441	500-YR	34700	227.15	254.02	236.22	254.37	0.000222	4.78	8378.13	1160.82	0.17	253
Main Channel	4532	10-YR	22500	226	251.67	236.19	251.84	0.000114	3.31	7331.62	750.46	0.13	253
Main Channel	4532	50-YR	27200	226	252.68	236.92	252.9	0.00014	3.79	7929.23	869.44	0.14	253
Main Channel	4532	100-YR	29500	226	253.11	237.26	253.36	0.000153	4.02	8235.75	961.56	0.15	253
Main Channel	4532	500-YR	34700	226	254.08	237.99	254.39	0.000181	4.5	8842.94	1120.09	0.17	253
Main Channel	5070	10-YR	22500	226	251.65	239.94	251.97	0.000217	4.56	5480.59	655.39	0.2	253
Main Channel	5070	50-YR	27200	226	252.65	240.91	253.05	0.000257	5.16	6136.25	656.57	0.22	253
Main Channel	5070	100-YR	29500	226	253.08	241.38	253.52	0.000272	5.39	6763.51	752.35	0.23	253
Main Channel	5070	500-YR	34700	226	254.05	242.35	254.58	0.000309	5.95	7511.28	788.74	0.24	253
Main Channel	5625	10-YR	22500	226	251.84	235.29	252.08	0.000162	3.92	6100.27	449.25	0.15	253
Main Channel	5625	50-YR	27200	226	252.88	236.31	253.19	0.0002	4.5	6566.88	453.18	0.17	253
Main Channel	5625	100-YR	29500	226	253.32	236.77	253.66	0.000216	4.74	7474.37	690.99	0.18	253
Main Channel	5625	500-YR	34700	226	254.32	237.78	254.74	0.000253	5.3	8165.24	695.92	0.2	253
Main Channel	6103	10-YR	22500	226	251.91		252.14	0.000111	3.94	6560.19	635.17	0.15	253
Main Channel	6103	50-YR	27200	226	252.96		253.27	0.000135	4.49	7236.41	645.3	0.17	253
Main Channel	6103	100-YR	29500	226	253.41		253.75	0.000147	4.75	7525.71	646.59	0.18	253
Main Channel	6103	500-YR	34700	226	254.43		254.84	0.000171	5.28	8186	649.82	0.19	253

Main Channel	7239 10-YR	22500	226	251.97	252.35	0.000192	5.24	6823.49	862.28	0.2
Main Channel	7239 50-YR	27200	226	253.04	253.51	0.000223	5.84	7755.24	865.83	0.22
Main Channel	7239 100-YR	29500	226	253.5	254.01	0.000239	6.12	8153.64	867.16	0.22
Main Channel	7239 500-YR	34700	226	254.55	255.14	0.000269	6.69	9062.62	869.98	0.24
Main Channel	7956 10-YR	22500	226.05	252.2	252.48	0.000144	4.59	7677.85	945.28	0.17
Main Channel	7956 50-YR	27200	226.05	253.33	253.66	0.000164	5.07	8749.04	949.3	0.18
Main Channel	7956 100-YR	29500	226.05	253.82	254.17	0.000174	5.29	9210.87	951.14	0.19
Main Channel	7956 500-YR	34700	226.05	254.92	255.32	0.000192	5.73	10258.35	955.31	0.2
Main Channel	8899 10-YR	22500	225.05	252.38	252.61	0.000119	4.02	7688.1	827.91	0.16
Main Channel	8899 50-YR	27200	225.05	253.53	253.81	0.000138	4.48	8642.79	833.81	0.17
Main Channel	8899 100-YR	29500	225.05	254.02	254.32	0.000147	4.7	9055.86	835.36	0.18
Main Channel	8899 500-YR	34700	225.05	255.14	255.49	0.000164	5.13	9987.32	839.27	0.19

APPENDIX E – SOIL MANAGEMENT PLAN

**SITE MANAGEMENT PLAN (DRAFT)
WESTERN 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]**

CONTENTS

1.	Introduction	3
1.1	Statement of Purpose	3
1.2	Background	3
1.3	Site Description	4
2.	Summary of Site Conditions	5
3.	Site Management Plan	6
3.1	Potentially Impacted Media	6
3.1.1	In-Field Identification	7
3.2	Material Handling Plan (Re-Use of Soil or Fill)	9
3.2.1	Imported Materials	9
3.2.2	Management of Potentially Impacted Materials	10
3.2.3	Analytical Laboratory Testing	10
3.2.4	Disposition of Materials	10
3.3	Health and Safety Plan	11
3.4	Dust Control and Air Monitoring	11
4.	Site Contacts	12
4.1	Emergency Contacts	12

LIST OF FIGURES

- 1-1** Site Location (within text)
- 1-2** Site Improvement Detail Map (within text)
- 1A** Western Shoreline Construction Areas – North Section
- 1B** Western Shoreline Construction Areas – South Section

TABLES

LIST OF APPENDICES

- A.** Analytical Laboratory Reports
- B.** Boring Logs

C. Health and Safety Plan (HASP)

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 is located along the western bank of the Genesee River in the City of Rochester, Monroe County, New York. The northern limit of the project area is approximately 2,300 feet south of the river's mouth at Lake Ontario, and the site extends approximately an additional 3,200 feet upstream. The entirety of the project area is in the City of Rochester's Charlotte neighborhood. The project area is bisected by Pattonwood Drive's Colonel Patrick O'Rorke Memorial Bridge. Figure 1-1 presents the project location.



Figure 1-1 (West) Site Location Map

The project includes shoreline protection in zones A through E, outlined in Section 4 and Appendix A of the March 2020 REDI Engineering Report. The shoreline protection measures will stabilize portions of the river-bank that are currently unprotected from foreseeable high-water events and wave run-up. The recommended improvements include:

- Rip-rap extension for zones A, B, C, and E
- Precast wall extension for zone D

Current Conditions of zones A, B, C and E include existing rip-rap to an elevation of 250.' In zones A and B, dense vegetation has covered the rip-rap and encroached on the adjacent floating docks. The vegetation above the elevation of 250' to 253' will require some clearing and grubbing for rip-rap placement. The existing rip-rap is in sound condition and requires minimal to no improvements in the toe section of the existing revetment, minimizing disruption within the riverbed. In zone D, the existing retaining wall extends to a height of 250' elevation and has no present damage. The bank directly behind the retaining wall is protected by grass; however, the area below the Pattonwood Dr. bridge has some soil exposure where vegetation cannot grow.

Locations of the areas where construction will take place are shown on Figures 1A and 1B. In general, construction activities will be focused at the shoreline and extending approximately 100 feet inland.



Figure 1-2 (West) Site Improvement Detail Map

2. Summary of Site Conditions

As late as the year 2005 the project area displayed limited development and opportunity for public use. During that time, the site had historically been dominated by the presence of the CSX Railroad and associate train depot (historic railroad building). The area did serve as a location for various private and public docks; however, access and parking in the project area were limited and the site appeared industrial in nature. The Monroe County Wastewater Pumping Station existed in original form in the project area and subsequently modernized in later years.

In 2005 the City of Rochester made a significant investment in the development and beautification of the project area. The 2005 project resulted in the construction of most of the existing public facilities described above including the rip-rap bank stabilization, landscaping, a 800-foot-long timber boardwalk, a 8-foot wide asphalt pedestrian path, a boater facilities building, public parking areas, and floating docks with associated vessel slips. In Figure 2-10b it is possible to see the construction of the now existing timber boardwalk in progress. Also improved since 2002 was the Pattonwood Dr. bridge (Colonel Patrick O’Rorke Memorial Bridge), which was completely reconstructed with new piers and navigation fender system.

The following represents a summary of the borings advanced, analytical samples collected, and purpose of each for the subsurface investigation performed. Locations are shown on Figures 1A and 1B.

Boring ID	Purpose	Analytical Sample ID	Analytical Samples
WAB-1	Potential Removal and Exposure	WAB1-0-2-11062020	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

WCB-2	Potential Removal Disposal and Exposure	WCB2-0-2-11062020	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
WDB-3	No Exposed Soil	-	-
WEB-4	Potential – Grading – Exposure	WEB4-0-2-11102020	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
WFIB-4	No Exposed Soil	-	-
WF2B-6	Potential Grading - exposure	WF2B6-2-4-11102020	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-7	No Exposed Soil – CSX Spill Area	-	-
WGB-8	For Tieback placement – CSX Spill Area	WGB-8-2-4-11032020	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

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 Figures 1A and 1B together with the location of activities associated with the REDI project. A brief description of these sites follows:

- CSXT Rochester; Site # V00524
This site is in the voluntary cleanup program and classified as a C which means that remediation has been completed to the satisfaction of NYSDEC.
- Genesee Marina C828130 (class A)
Class A sites are currently active.
Petroleum products and metals were found to contaminate much of the site.

In addition, the NYSDEC Spills data base was reviewed to identify incidents that may have impacted the soil or groundwater within the project area. This 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. Approximate locations for the spill areas are depicted on Figure 1A. The search identified the following:

Spill Number	Date Spill Reported	Spill Name	Address	
109394	12/23/2001	CSX TRAIN DERAILMENT	RIVER STREET AT LATTA ROAD	CSX spill of 2 propane and dichloromethane
370476	10/20/2003	PELICANS MARINA RESTAURAN	565 RIVER STREET	gasoline and diesel spill from vehicle on 12/23/2001
485044	10/7/2004	PELICAN MARINA	560 RIVER STREET	petroleum from drums, 12/27/2004
550604	4/25/2005	CSXT RIVER STREET DERAILMENT SITE	480 RIVER STREET	unknown petroleum from train traffic accident
1206164	9/21/2012	GENESEE RIVER MOUTH	GENESEE RIVER MOUTH	soil
1215613	10/3/2012	PORT OF ROCHESTER FERRY TERMINAL	1000 NORTH RIVER STREET	>1100 gal of 1,2,4 trimethylbenzene to soil

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)
WAB-1	0 – 2 ft.	WAB1-0-2-11062020	~ 6 ft.
WCB-2	0 – 2 ft.	WCB2-0-2-11062020	~ 5 ft.
WEB-4	0 – 2 ft.	WEB4-0-2-11102020	None
WF2B-6	2 - 4 ft.	WF2B6-2-4-11102020	None

WGB-8	2 - 4 ft.	WGB-8-2-4-11032020	~ 8 ft.
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Tables 1 through 6 present the analytical results of the soil samples compared to NY Part 375 Restricted Residential SCO or 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 and PCBs:

- There were no pesticides or PCBs detected

VOCs:

- There were few low-level detections, none above NY Part 375 Restricted Residential SCO or Commercial SCOs

SVOCs:

- Sample WCB2-0-2-11062020 contained low-level concentrations of the following:
 - Benz(a)anthracene, slightly greater than the Restricted Residential SCO,
 - Benzo(a)pyrene, greater than both the Restricted Residential and Commercial SCOs,
 - Benzo(b)fluoranthene, slightly greater than the Restricted Residential SCO, and
 - Indeno(1,2,3-cd)pyrene, slightly greater than the Restricted Residential SCO
- Sample WEB4-0-2-11102020 contained low-level concentrations of the following:
 - Benz(a)anthracene, greater than both the Restricted Residential and Commercial SCOs,
 - Benzo(a)pyrene, greater than both the Restricted Residential and Commercial SCOs,
 - Benzo(b)fluoranthene, greater than both the Restricted Residential and Commercial SCOs,
 - Indeno(1,2,3-cd)pyrene, slightly greater than the Restricted Residential SCO
 - Chrysene, slightly greater than the Restricted Residential SCO, and
 - Dibenz(a,h)anthracene greater than both the Restricted Residential and Commercial SCOs.

Both of these samples were collected from the zero to two feet interval (below ground surface).

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 presented in the January 2021 NYSDEC document entitled *Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Guidance*.

Metals:

- Location WCB2-0-2-11062020 contained low-level exceedances for both Copper (above both the Restricted Residential and Commercial SCOs) and Lead (slightly above the Restricted Residential SCO).

Disposal

For disposal purposes, samples from three locations were analyzed for Toxicity Characteristics (WGB-8, WAB1, and WCB2), 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 its 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

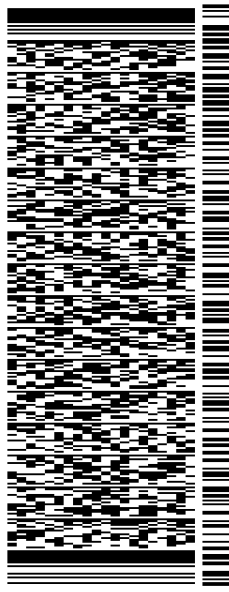
- Medical, Fire, and Police: 911
- Dig Safely New York: (800) 962-7962 (3-day notice required for utility markout)
- Poison Control Center: (800) 222-1222
- Pollution Toxic Chemical Oil Spills: (800) 424-8802
- NYSDEC Spills Hotline: (800) 457-7362

ORIGIN ID:ONHA (585) 295-7700
JAMIE NEWTOWN
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ROCHESTER, NY 14604
UNITED STATES US

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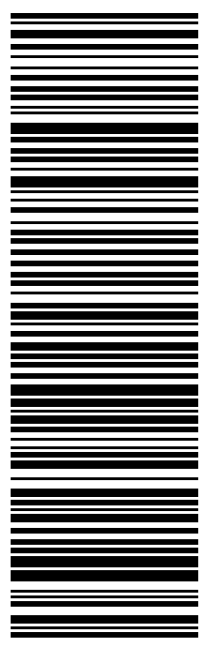
TO MR. MICHAEL WHEELER
NYSDEC - REGION 8
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AVON NY 14414
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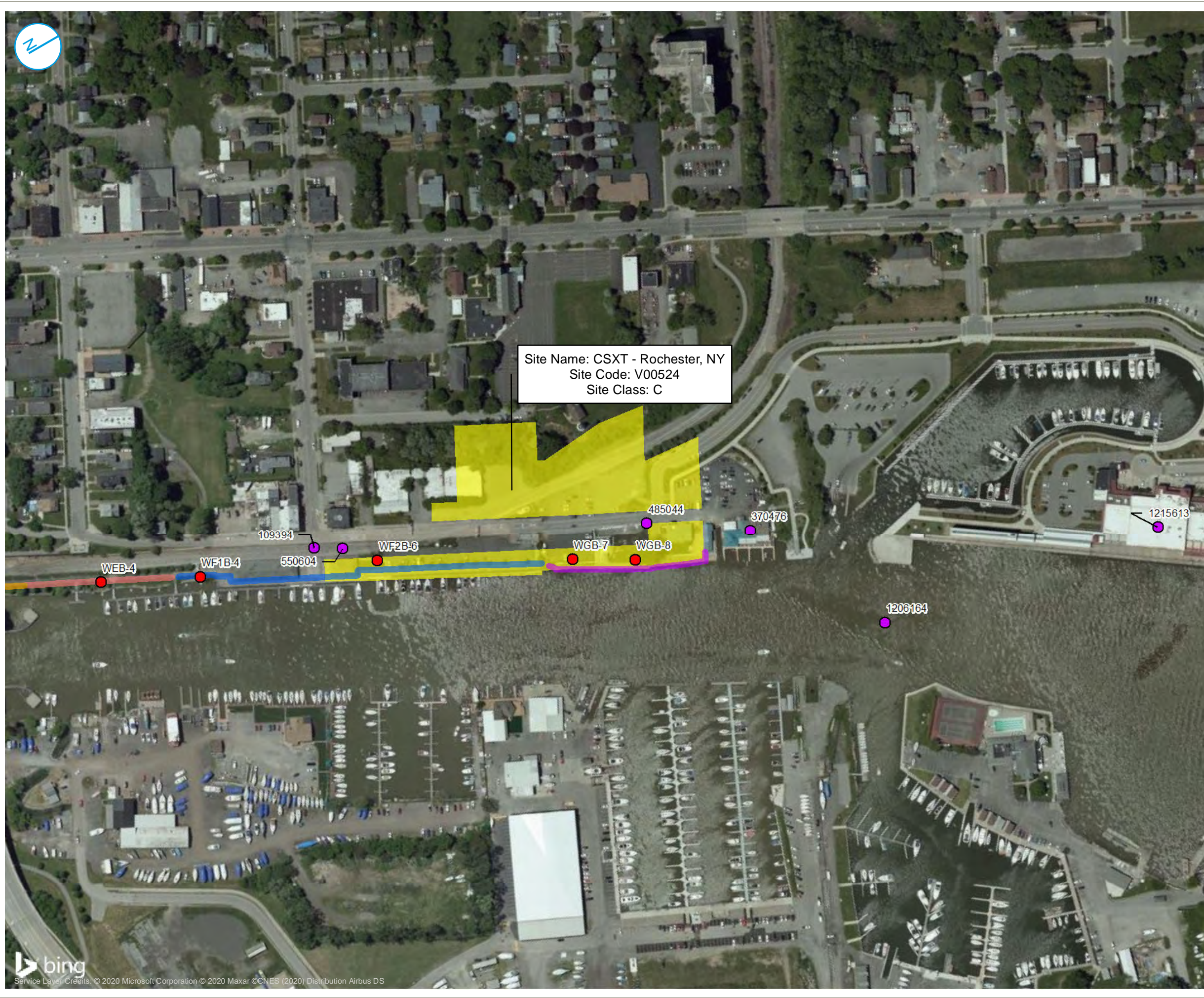


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- NYSDEC SPILL LOCATIONS
 - NYSDEC REMEDIATION PARCELS
 - BORING LOCATIONS
- SHORELINE CONSTRUCTION ACTIVITIES**
- STONE OR RIP RAP ABOVE 547
 - EXTEND PRECAST CONCRETE RETAINING WALLS
 - CONCRETE FLOODWALLS
 - SHEET PILE WALL WITH CONCRETE PILE CAP

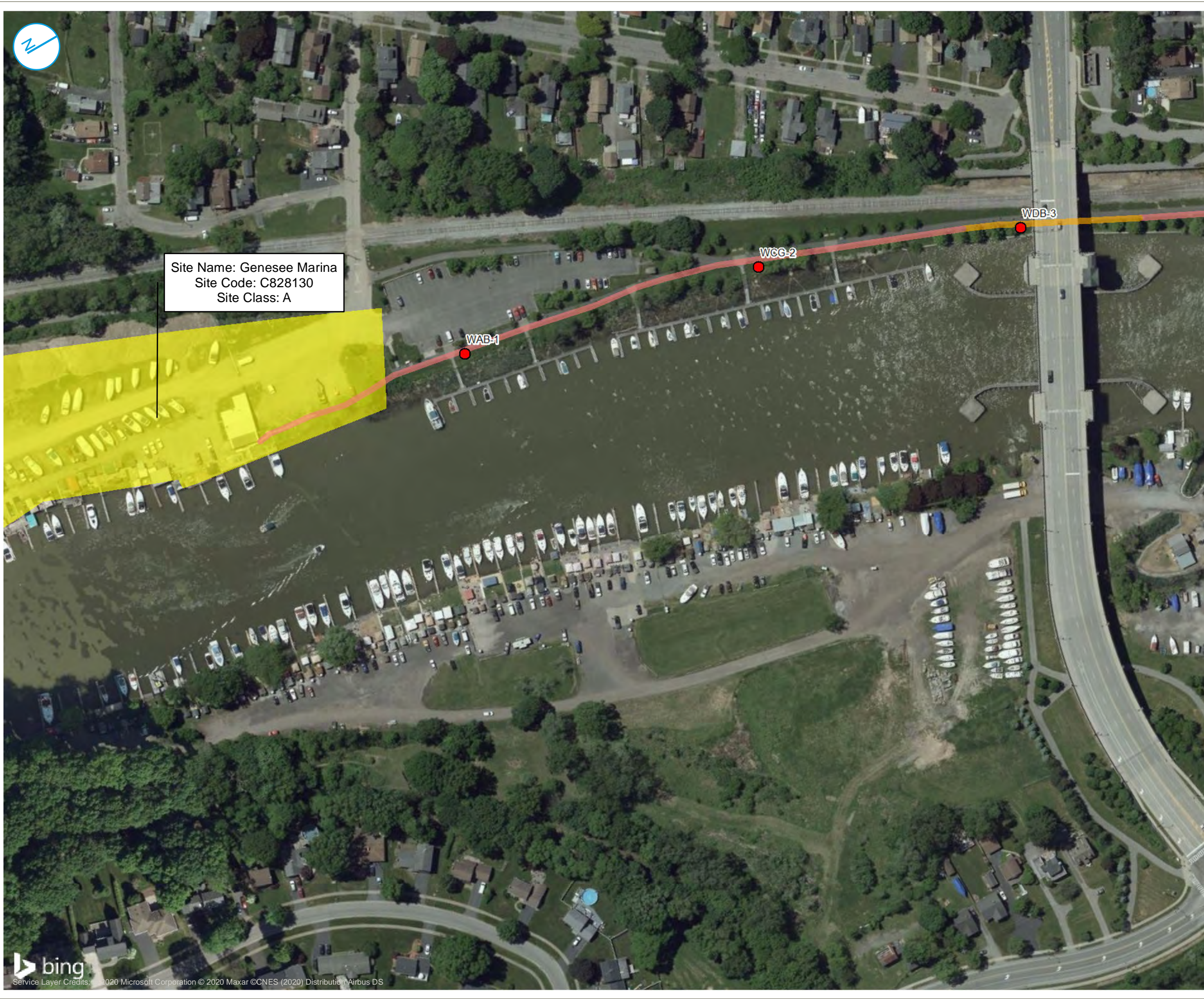
Notes
 - Visit DECinfo Locator for more information on Remediation Sites:
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PROPOSED IMPROVEMENT ALTERNATIVES
WESTERN SHORELINE CONSTRUCTION AREAS - NORTH SECTION

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

FIGURE 1A



Site Name: Genesee Marina
 Site Code: C828130
 Site Class: A

- NYSDEC SPILL LOCATIONS
- NYSDEC REMEDIATION PARCELS
- BORING LOCATIONS
- SHORELINE CONSTRUCTION ACTIVITIES**
- STONE OR RIP RAP ABOVE 547
- EXTEND PRECAST CONCRETE RETAINING WALLS

Notes
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PROPOSED IMPROVEMENT ALTERNATIVES
WESTERN SHORELINE CONSTRUCTION AREAS - SOUTH SECTION

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

FIGURE 1B

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



TABLES

**Table 1 - Soil Boring Pesticide Analytical Results
Western Shoreline**

ANALYTE	CAS NUMBER	METHOD	UNITS	NY Part 375 Restricted Residential SCO	NY Part 375 Commercial SCO	WGB-8-2-4-11032020	WAB1-0-2-11062020	WCB2-0-2-11062020	WEB4-0-2-11102020	WF2B6-2-4-11102020
						RESULT	RESULT	RESULT	RESULT	RESULT
Pesticides										
4,4'-DDD	72-54-8	8081B/Pest OC	ug/Kg-dry	13,000	92,000	9.3 U	9.4 U	4.9 U	5.0 U	5.1 U
4,4'-DDE	72-55-9	8081B/Pest OC	ug/Kg-dry	8,900	62,000	9.3 U	9.4 U	4.9 U	5.0 U	5.1 U
4,4'-DDT	50-29-3	8081B/Pest OC	ug/Kg-dry	7,900	47,000	9.3 U	9.4 U	4.9 U	5.0 U	5.1 U
Aldrin	309-00-2	8081B/Pest OC	ug/Kg-dry	97	680	9.3 U	9.4 U	4.9 U	5.0 U	5.1 U
Dieldrin	60-57-1	8081B/Pest OC	ug/Kg-dry	200	NC	9.3 U	9.4 U	4.9 U	5.0 U	5.1 U
Endosulfan I	959-98-8	8081B/Pest OC	ug/Kg-dry	24,000	200000	9.3 U	9.4 U	4.9 U	5.0 U	5.1 U
Endosulfan II	33213-65-9	8081B/Pest OC	ug/Kg-dry	24,000	NC	9.3 U	9.4 U	4.9 U	5.0 U	5.1 U
Endosulfan Sulfate	1031-07-8	8081B/Pest OC	ug/Kg-dry	24,000	200000	9.3 U	9.4 U	4.9 U	5.0 U	5.1 U
Endrin	72-20-8	8081B/Pest OC	ug/Kg-dry	11,000	NC	9.3 U	9.4 U	4.9 U	5.0 U	5.1 U
Endrin Aldehyde	7421-93-4	8081B/Pest OC	ug/Kg-dry	NC	NC	9.3 U	9.4 U	4.9 U	5.0 U	5.1 U
Endrin Ketone	53494-70-5	8081B/Pest OC	ug/Kg-dry	NC	NC	9.3 U	9.4 U	4.9 U	5.0 U	5.1 U
Heptachlor	76-44-8	8081B/Pest OC	ug/Kg-dry	2,100	15000	9.3 U	9.4 U	4.9 U	5.0 U	5.1 U
Heptachlor Epoxide	1024-57-3	8081B/Pest OC	ug/Kg-dry	NC	NC	9.3 U	9.4 U	4.9 U	5.0 U	5.1 U
Methoxychlor	72-43-5	8081B/Pest OC	ug/Kg-dry	NC	NC	9.3 U	9.4 U	4.9 U	5.0 U	5.1 U
Toxaphene	8001-35-2	8081B/Pest OC	ug/Kg-dry	NC	NC	210 U	220 U	110 U	120 U	120 U
alpha-BHC	319-84-6	8081B/Pest OC	ug/Kg-dry	480	3,400	9.3 U	9.4 U	4.9 U	5.0 U	5.1 U
alpha-Chlordane	5103-71-9	8081B/Pest OC	ug/Kg-dry	4,200	24,000	9.3 U	9.4 U	4.9 U	5.0 U	5.1 U
beta-BHC	319-85-7	8081B/Pest OC	ug/Kg-dry	360	3,000	9.3 U	9.4 U	4.9 U	5.0 U	5.1 U
delta-BHC	319-86-8	8081B/Pest OC	ug/Kg-dry	100,000	NC	9.3 U	9.4 U	4.9 U	5.0 U	5.1 U
gamma-BHC (Lindane)	58-89-9	8081B/Pest OC	ug/Kg-dry	1,300	9,200	9.3 U	9.4 U	4.9 U	5.0 U	5.1 U
gamma-Chlordane	5566-34-7	8081B/Pest OC	ug/Kg-dry	NC	NC	9.3 U	9.4 U	4.9 U	5.0 U	5.1 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
Western Shoreline**

ANALYTE	CAS NUMBER	METHOD	UNITS	NY Part375- Restricted Residential SCO	NY Part 375 Commercial SCO	WAB1-0-2-1106202	WCB2-0-2-1106202	WEB4-0-2-1110202	WF2B6-2-4-1110202	WGB-8-2-4-1103202
						R2010360-004	R2010360-005	R2010643-001	R2010643-002	R2010360-001
PCB										
Aroclor 1016	12674-11-2	8082A/PC B	ug/Kg-dr y	NC	NC	37 U	38 U	39 U	41 U	36 U
Aroclor 1221	11104-28-2	8082A/PC B	ug/Kg-dr y	NC	NC	74 U	77 U	79 U	83 U	74 U
Aroclor 1232	11141-16-5	8082A/PC B	ug/Kg-dr y	NC	NC	37 U	38 U	39 U	41 U	36 U
Aroclor 1242	53469-21-9	8082A/PC B	ug/Kg-dr y	NC	NC	37 U	38 U	39 U	41 U	36 U
Aroclor 1248	12672-29-6	8082A/PC B	ug/Kg-dr y	NC	NC	37 U	38 U	39 U	41 U	36 U
Aroclor 1254	11097-69-1	8082A/PC B	ug/Kg-dr y	NC	NC	37 U	38 U	39 U	41 U	36 U
Aroclor 1260	11096-82-5	8082A/PC B	ug/Kg-dr y	NC	NC	37 U	38 U	39 U	41 U	36 U
Total PCBs	NA	---	---	1,000	1,000	37	38	39	41	36

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
Western Shoreline

ANALYTE	CAS NUMBER	METHOD	UNITS	NY Part 375	NY Part 375	WGB-8-2-4-1103202	WAB1-0-2-1106202	WCB2-0-2-1106202	WEB4-0-2-111020	WF2B6-2-4-111020
				Restricted Residential SCO	Commercial SCO	0	0	0	20	20
VOCs						R2010360-001	R2010360-004	R2010360-005	R2010643-001	R2010643-002
1,1,1-Trichloroethane (TCA)	71-55-6	8260C/VOC FP	ug/Kg-dry	100,000	500,000	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
1,1,2,2-Tetrachloroethane	79-34-5	8260C/VOC FP	ug/Kg-dry	NC	NC	0.52 U	0.43 U	0.60 U	0.54 U	0.68 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	8260C/VOC FP	ug/Kg-dry	NC	NC	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
1,1,2-Trichloroethane	79-00-5	8260C/VOC FP	ug/Kg-dry	NC	NC	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
1,1-Dichloroethane (1,1-DCA)	75-34-3	8260C/VOC FP	ug/Kg-dry	26,000	240,000	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
1,1-Dichloroethene (1,1-DCE)	75-35-4	8260C/VOC FP	ug/Kg-dry	100,000	500,000	0.34 U	0.28 U	0.40 U	0.35 U	0.45 U
1,2,3-Trichlorobenzene	87-61-6	8260C/VOC FP	ug/Kg-dry	NC	NC	0.61 U	0.50 U	0.71 U	0.63 U	0.80 U
1,2,4-Trichlorobenzene	120-82-1	8260C/VOC FP	ug/Kg-dry	NC	NC	0.49 U	0.41 U	0.57 U	0.51 U	0.65 U
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260C/VOC FP	ug/Kg-dry	NC	NC	0.88 U	0.73 U	1.1 U	0.91 U	1.2 U
1,2-Dibromomethane	106-93-4	8260C/VOC FP	ug/Kg-dry	NC	NC	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
1,2-Dichlorobenzene	95-50-1	8260C/VOC FP	ug/Kg-dry	100,000	500,000	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
1,2-Dichloroethane	107-06-2	8260C/VOC FP	ug/Kg-dry	3,100	30,000	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
1,2-Dichloropropane	78-87-5	8260C/VOC FP	ug/Kg-dry	NC	NC	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
1,3-Dichlorobenzene	541-73-1	8260C/VOC FP	ug/Kg-dry	49,000	280,000	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
1,4-Dichlorobenzene	106-46-7	8260C/VOC FP	ug/Kg-dry	13,000	130,000	0.26 U	0.22 U	0.30 U	0.27 U	0.34 U
1,4-Dioxane	123-91-1	8260C/VOC FP	ug/Kg-dry	13,000	130,000	24 U	20 U	28 U	25 U	31 U
2-Butanone (MEK)	78-93-3	8260C/VOC FP	ug/Kg-dry	100,000	500,000	2.4 U	2.0 U	2.8 U	2.5 U	3.1 U
2-Hexanone	591-78-6	8260C/VOC FP	ug/Kg-dry	NC	NC	0.42 U	0.35 U	0.49 U	0.44 U	0.56 U
4-Methyl-2-pentanone	108-10-1	8260C/VOC FP	ug/Kg-dry	NC	NC	0.27 U	0.23 U	0.32 U	0.28 U	0.36 U
Acetone	67-64-1	8260C/VOC FP	ug/Kg-dry	100,000	500,000	7.0	5.6	6.4 U	8.4	16
Benzene	71-43-2	8260C/VOC FP	ug/Kg-dry	4,800	44,000	0.34 J	0.20 U	0.28 U	0.25 U	0.31 U
Bromochloromethane	74-97-5	8260C/VOC FP	ug/Kg-dry	NC	NC	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
Bromodichloromethane	75-27-4	8260C/VOC FP	ug/Kg-dry	NC	NC	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
Bromoform	75-25-2	8260C/VOC FP	ug/Kg-dry	NC	NC	0.59 U	0.49 U	0.68 U	0.61 U	0.77 U
Bromomethane	74-83-9	8260C/VOC FP	ug/Kg-dry	NC	NC	2.5 U	2.1 U	2.9 U	2.6 U	3.3 U
Carbon Disulfide	75-15-0	8260C/VOC FP	ug/Kg-dry	NC	NC	0.34 U	0.28 U	0.40 U	0.35 U	0.45 U
Carbon Tetrachloride	56-23-5	8260C/VOC FP	ug/Kg-dry	2,400	22,000	0.31 U	0.25 U	0.36 U	0.32 U	0.40 U
Chlorobenzene	108-90-7	8260C/VOC FP	ug/Kg-dry	100,000	500,000	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
Chloroethane	75-00-3	8260C/VOC FP	ug/Kg-dry	NC	NC	0.48 U	0.40 U	0.56 U	0.50 U	0.64 U
Chloroform	67-66-3	8260C/VOC FP	ug/Kg-dry	49,000	350,000	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
Chloromethane	74-87-3	8260C/VOC FP	ug/Kg-dry	NC	NC	1.7 U	1.4 U	1.9 U	1.7 U	2.2 U
Cyclohexane	110-82-7	8260C/VOC FP	ug/Kg-dry	NC	NC	1.0 J	0.25 U	0.36 U	0.32 U	1.5 J
Dibromochloromethane	124-48-1	8260C/VOC FP	ug/Kg-dry	NC	NC	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
Dichlorodifluoromethane (CFC 12)	75-71-8	8260C/VOC FP	ug/Kg-dry	NC	NC	0.39 U	0.32 U	0.45 U	0.40 U	0.51 U
Dichloromethane	75-09-2	8260C/VOC FP	ug/Kg-dry	100,000	500,000	3.3 U	2.7 U	3.8 U	3.4 U	4.4 U
Ethylbenzene	100-41-4	8260C/VOC FP	ug/Kg-dry	41,000	390,000	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
Isopropylbenzene (Cumene)	98-82-8	8260C/VOC FP	ug/Kg-dry	NC	NC	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
Methyl Acetate	79-20-9	8260C/VOC FP	ug/Kg-dry	NC	NC	0.98 U	0.81 U	1.2 U	1.1 U	1.3 U
Methyl tert-Butyl Ether	1634-04-4	8260C/VOC FP	ug/Kg-dry	100,000	500,000	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
Methylcyclohexane	108-87-2	8260C/VOC FP	ug/Kg-dry	NC	NC	1.0 J	0.30 U	0.42 U	0.38 U	2.1 J
Styrene	100-42-5	8260C/VOC FP	ug/Kg-dry	NC	NC	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U

**Table 3 - Soil Boring VOCs Analytical Results
Western Shoreline**

ANALYTE	CAS NUMBER	METHOD	UNITS	NY Part 375 Restricted Residential SCO	NY Part 375 Commercial SCO	WGB-8-2-4-1103202	WAB1-0-2-1106202	WCB2-0-2-1106202	WEB4-0-2-11102020	WF2B6-2-4-11102020
						R2010360-001	R2010360-004	R2010360-005	R2010643-001	R2010643-002
VOCs										
Tetrachloroethene (PCE)	127-18-4	8260C/VOC FP	ug/Kg-dry	19,000	150,000	0.27 U	0.23 U	0.32 U	0.28 U	0.36 U
Toluene	108-88-3	8260C/VOC FP	ug/Kg-dry	100,000	500,000	0.63 J	0.20 U	0.28 U	0.25 U	0.31 U
Trichloroethene (TCE)	79-01-6	8260C/VOC FP	ug/Kg-dry	21,000	200,000	0.26 U	0.22 U	0.30 U	0.27 U	0.34 U
Trichlorofluoromethane (CFC 11)	75-69-4	8260C/VOC FP	ug/Kg-dry	NC	NC	0.31 U	0.25 U	0.36 U	0.32 U	1.8 J
Vinyl Chloride	75-01-4	8260C/VOC FP	ug/Kg-dry	900	13,000	0.54 U	0.45 U	0.63 U	0.56 U	0.71 U
cis-1,2-Dichloroethene	156-59-2	8260C/VOC FP	ug/Kg-dry	100,000	500,000	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
cis-1,3-Dichloropropene	10061-01-5	8260C/VOC FP	ug/Kg-dry	NC	NC	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
m,p-Xylenes	179601-23-1	8260C/VOC FP	ug/Kg-dry	NC	NC	0.44 U	0.36 U	0.51 U	0.45 U	0.57 U
o-Xylene	95-47-6	8260C/VOC FP	ug/Kg-dry	NC	NC	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
trans-1,2-Dichloroethene	156-60-5	8260C/VOC FP	ug/Kg-dry	100,000	500,000	0.24 U	0.20 U	0.28 U	0.25 U	0.31 U
trans-1,3-Dichloropropene	10061-02-6	8260C/VOC FP	ug/Kg-dry	NC	NC	0.24 U	0.20 U	0.28 U	0.25 U	0.31 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
Western Shoreline**

ANALYTE	AS NUMBE	METHOD	UNITS	NY Part 375	NY Part 375	WGB-8-2-4-11032	WAB1-0-2-1106	WCB2-0-2-11062	WEB4-0-2-11102	WF2B6-2-4-11102
				Restricted Residential SCO	Commercial SCO	020	2020	020	020	020
						R2010360-001	R2010360-004	R2010360-005	R2010643-001	R2010643-002
SVOCs										
1,2,4,5-Tetrachlorobenzene	95-94-3	8270D/SVO	ug/Kg-dr	NC	NC	78 U	16 U	16 U	16 U	34 U
1,4-Dioxane	123-91-1	8270D/SVO	ug/Kg-dr	NC	NC	200 U	38 U	40 U	40 U	84 U
2,2'-Oxybis(1-chloropropane)	108-60-1	8270D/SVO	ug/Kg-dr	NC	NC	80 U	16 U	17 U	17 U	35 U
2,3,4,6-Tetrachlorophenol	58-90-2	8270D/SVO	ug/Kg-dr	NC	NC	66 U	13 U	14 U	14 U	29 U
2,4,5-Trichlorophenol	95-95-4	8270D/SVO	ug/Kg-dr	NC	NC	43 U	8.5 U	8.8 U	8.9 U	19 U
2,4,6-Trichlorophenol	88-06-2	8270D/SVO	ug/Kg-dr	NC	NC	42 U	8.3 U	8.6 U	8.6 U	19 U
2,4-Dichlorophenol	120-83-2	8270D/SVO	ug/Kg-dr	NC	NC	44 U	8.7 U	9.1 U	9.1 U	20 U
2,4-Dimethylphenol	105-67-9	8270D/SVO	ug/Kg-dr	NC	NC	77 U	16 U	16 U	41	34 U
2,4-Dinitrophenol	51-28-5	8270D/SVO	ug/Kg-dr	NC	NC	55 U	11 U	12 U	12 U	24 U
2,4-Dinitrotoluene	121-14-2	8270D/SVO	ug/Kg-dr	NC	NC	85 U	17 U	18 U	18 U	37 U
2,6-Dinitrotoluene	606-20-2	8270D/SVO	ug/Kg-dr	NC	NC	88 U	18 U	19 U	19 U	39 U
2-Chloronaphthalene	91-58-7	8270D/SVO	ug/Kg-dr	NC	NC	73 U	15 U	15 U	15 U	32 U
2-Chlorophenol	95-57-8	8270D/SVO	ug/Kg-dr	NC	NC	46 U	8.9 U	9.3 U	9.3 U	20 U
2-Methylnaphthalene	91-57-6	8270D/SVO	ug/Kg-dr	NC	NC	19 J	51	570	930 E	410
2-Methylphenol	95-48-7	8270D/SVO	ug/Kg-dr	100,000	500,000	43 U	8.4 U	8.7 U	15 J	19 U
2-Nitroaniline	88-74-4	8270D/SVO	ug/Kg-dr	NC	NC	95 U	19 U	20 U	20 U	42 U
2-Nitrophenol	88-75-5	8270D/SVO	ug/Kg-dr	NC	NC	44 U	8.7 U	9.1 U	9.1 U	20 U
3,3'-Dichlorobenzidine	91-94-1	8270D/SVO	ug/Kg-dr	NC	NC	110 U	21 U	22 U	22 U	47 U
3- and 4-Methylphenol Coeluti	CASID3003	8270D/SVO	ug/Kg-dr	NC	500,000	47 U	9.1 U	11 J	57	21 U
3-Nitroaniline	99-09-2	8270D/SVO	ug/Kg-dr	NC	NC	43 U	8.4 U	8.7 U	8.8 U	19 U
4,6-Dinitro-2-methylphenol	534-52-1	8270D/SVO	ug/Kg-dr	NC	NC	68 U	14 U	14 U	14 U	30 U
4-Bromophenyl Phenyl Ether	101-55-3	8270D/SVO	ug/Kg-dr	NC	NC	78 U	16 U	16 U	17 U	35 U
4-Chloro-3-methylphenol	59-50-7	8270D/SVO	ug/Kg-dr	NC	NC	83 U	17 U	17 U	17 U	37 U
4-Chloroaniline	106-47-8	8270D/SVO	ug/Kg-dr	NC	NC	54 U	11 U	11 U	12 U	24 U
4-Chlorophenyl Phenyl Ether	7005-72-3	8270D/SVO	ug/Kg-dr	NC	NC	75 U	15 U	16 U	16 U	33 U
4-Nitroaniline	100-01-6	8270D/SVO	ug/Kg-dr	NC	NC	96 U	19 U	20 U	20 U	42 U
4-Nitrophenol	100-02-7	8270D/SVO	ug/Kg-dr	NC	NC	150 U	28 U	29 U	30 U	62 U
Acenaphthene	83-32-9	8270D/SVO	ug/Kg-dr	100,000	500,000	23 J	6.9 J	78	1700 E	38
Acenaphthylene	208-96-8	8270D/SVO	ug/Kg-dr	100,000	500,000	74	61	270	570	170
Acetophenone	98-86-2	8270D/SVO	ug/Kg-dr	NC	NC	62 U	13 U	57	13 U	28 U
Anthracene	120-12-7	8270D/SVO	ug/Kg-dr	100,000	500,000	84	61	510	3000 E	140
Atrazine	1912-24-9	8270D/SVO	ug/Kg-dr	NC	NC	50 U	9.7 U	11 U	11 U	22 U
Benz(a)anthracene	56-55-3	8270D/SVO	ug/Kg-dr	1,000	5,600	220	170	1200 E	8400 E	460
Benzaldehyde	100-52-7	8270D/SVO	ug/Kg-dr	NC	NC	83 U	17 U	17 U	18 U	60 J
Benzo(a)pyrene	50-32-8	8270D/SVO	ug/Kg-dr	1,000	1,000	390	250	1400 E	11000 E	570
Benzo(b)fluoranthene	205-99-2	8270D/SVO	ug/Kg-dr	1,000	5,600	400	310	1800 E	15000 E	770
Benzo(g,h,i)perylene	191-24-2	8270D/SVO	ug/Kg-dr	100,000	500,000	310	150	780 E	2800 E	300
Benzo(k)fluoranthene	207-08-9	8270D/SVO	ug/Kg-dr	3,900	56,000	130	99	600	2700 E	250
Biphenyl	92-52-4	8270D/SVO	ug/Kg-dr	NC	NC	47 U	9.1 U	71	210	47 J
Bis(2-chloroethoxy)methane	111-91-1	8270D/SVO	ug/Kg-dr	NC	NC	74 U	15 U	16 U	16 U	33 U
Bis(2-chloroethyl) Ether	111-44-4	8270D/SVO	ug/Kg-dr	NC	NC	74 U	15 U	16 U	16 U	33 U
Bis(2-ethylhexyl) Phthalate	117-81-7	8270D/SVO	ug/Kg-dr	NC	NC	170 U	34 U	35 U	35 U	75 U
Butyl Benzyl Phthalate	85-68-7	8270D/SVO	ug/Kg-dr	NC	NC	93 U	19 U	20 U	20 U	41 U
Caprolactam	105-60-2	8270D/SVO	ug/Kg-dr	NC	NC	150 U	28 U	29 U	30 U	62 U
Carbazole	86-74-8	8270D/SVO	ug/Kg-dr	NC	NC	79 U	16 U	170	1200 E	75 J
Chrysene	218-01-9	8270D/SVO	ug/Kg-dr	3,900	56,000	270	200	1200 E	6600 E	700
Di-n-butyl Phthalate	84-74-2	8270D/SVO	ug/Kg-dr	NC	NC	91 U	18 U	19 U	19 U	40 U
Di-n-octyl Phthalate	117-84-0	8270D/SVO	ug/Kg-dr	NC	NC	170 U	33 U	34 U	34 U	72 U
Dibenz(a,h)anthracene	53-70-3	8270D/SVO	ug/Kg-dr	330	560	77	39	200	1100 E	110
Dibenzofuran	132-64-9	8270D/SVO	ug/Kg-dr	59,000	350,000	17 U	19	250	1400 E	150
Diethyl Phthalate	84-66-2	8270D/SVO	ug/Kg-dr	NC	NC	110 U	20 U	21 U	21 U	45 U

**Table 4 - Soil Boring SVOCs Analytical Results
Western Shoreline**

ANALYTE	AS NUMBE	METHOD	UNITS	NY Part 375 Restricted Residential SCO	NY Part 375 Commercial SCO	WGB-8-2-4-11032	WAB1-0-2-1106	WCB2-0-2-11062	WEB4-0-2-11102	WF2B6-2-4-11102
						020	2020	020	020	020
						R2010360-001	R2010360-004	R2010360-005	R2010643-001	R2010643-002
SVOCs										
Dimethyl Phthalate	131-11-3	8270D/SVO	ug/Kg-dr	NC	NC	82 U	17 U	17 U	17 U	36 U
Fluoranthene	206-44-0	8270D/SVO	ug/Kg-dr	100,000	500,000	440	300	2300 E	7500 E	910
Fluorene	86-73-7	8270D/SVO	ug/Kg-dr	100,000	500,000	29 J	12	150	1900 E	46
Hexachlorobenzene	118-74-1	8270D/SVO	ug/Kg-dr	1,200	6,000	14 U	2.7 U	2.8 U	2.8 U	5.9 U
Hexachlorobutadiene	87-68-3	8270D/SVO	ug/Kg-dr	NC	NC	74 U	15 U	16 U	16 U	33 U
Hexachlorocyclopentadiene	77-47-4	8270D/SVO	ug/Kg-dr	NC	NC	130 U	26 U	27 U	27 U	57 U
Hexachloroethane	67-72-1	8270D/SVO	ug/Kg-dr	NC	NC	66 U	13 U	14 U	14 U	29 U
Indeno(1,2,3-cd)pyrene	193-39-5	8270D/SVO	ug/Kg-dr	500	5,600	270	150	870 E	2900 E	330
Isophorone	78-59-1	8270D/SVO	ug/Kg-dr	NC	NC	82 U	16 U	17 U	17 U	36 U
N-Nitrosodi-n-propylamine	621-64-7	8270D/SVO	ug/Kg-dr	NC	NC	68 U	14 U	14 U	14 U	30 U
N-Nitrosodiphenylamine	86-30-6	8270D/SVO	ug/Kg-dr	NC	NC	59 U	12 U	13 U	13 U	26 U
Naphthalene	91-20-3	8270D/SVO	ug/Kg-dr	100,000	500,000	43	39 B	420	1900 E	280
Nitrobenzene	98-95-3	8270D/SVO	ug/Kg-dr	NC	NC	16 U	3.0 U	3.2 U	3.2 U	6.7 U
Pentachlorophenol (PCP)	87-86-5	8270D/SVO	ug/Kg-dr	6,700	6,700	170 U	32 U	34 U	34 U	71 U
Phenanthrene	85-01-8	8270D/SVO	ug/Kg-dr	100,000	500,000	220	130	1700 E	7100 E	730
Phenol	108-95-2	8270D/SVO	ug/Kg-dr	100,000	500,000	50 U	9.8 U	11 U	17 J	22 U
Pyrene	129-00-0	8270D/SVO	ug/Kg-dr	100,000	500,000	350	240	1900 E	7300 E	780

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.
Organics- Concentration has exceeded the calibration range for that specific analysis.

J - Estimated value

Gray shading indicates exceedance of NY Part 375 Restricted Residential SCO
Gold shading indicates exceedance of NY Part 375 Commercial SCO

Table 5 - Soil Boring PFAs Analytical Results

Western Shoreline

ANALYTE	CAS NUMBER	METHOD	UNITS	NY Part 375	NY Part 375	WGB-8-2-4-1103202	WAB1-0-2-110620	WCB2-0-2-110620	WEB4-0-2-111020	WF2B6-2-4-111020
				Restricted Residential SCO*	Commercial SCO*	0	20	20	20	20
						R2010360-001	R2010360-004	R2010360-005	R2010643-001	R2010643-002
PFAs										
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	PFC/537M/PFAS	ng/q-dry	NC	NC	0.17 U	0.17 U	0.16 U	0.16 U	0.17 U
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	PFC/537M/PFAS	ng/q-dry	NC	NC	0.032 U	0.032 U	0.031 U	0.031 U	0.033 U
N-Ethyl perfluorooctane sulfonamidoacetic acid	2991-50-6	PFC/537M/PFAS	ng/q-dry	NC	NC	0.22 U	0.22 U	0.38 J	0.22 U	0.23 U
N-Methyl perfluorooctane sulfonamidoacetic acid	2355-31-9	PFC/537M/PFAS	ng/q-dry	NC	NC	0.30 U	0.30 U	0.29 U	0.29 U	0.31 U
Perfluorobutane sulfonic acid (PFBS)	375-73-5	PFC/537M/PFAS	ng/q-dry	NC	NC	0.24 U	0.24 U	0.24 U	0.24 U	0.25 U
Perfluorobutanoic acid (PFBA)	375-22-4	PFC/537M/PFAS	ng/q-dry	NC	NC	0.43 U	0.43 U	0.42 U	0.47 J	0.44 U
Perfluorodecane sulfonic acid (PFDS)	335-77-3	PFC/537M/PFAS	ng/q-dry	NC	NC	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U
Perfluorodecanoic acid (PFDA)	335-76-2	PFC/537M/PFAS	ng/q-dry	NC	NC	0.29 U	0.29 U	0.28 U	0.28 U	0.30 U
Perfluorododecanoic acid (PFDoDA)	307-55-1	PFC/537M/PFAS	ng/q-dry	NC	NC	0.30 U	0.30 U	0.29 U	0.29 U	0.31 U
Perfluorooheptane sulfonic acid (PFHpS)	375-92-8	PFC/537M/PFAS	ng/q-dry	NC	NC	0.068 U	0.067 U	0.067 U	0.066 U	0.070 U
Perfluorooheptanoic acid (PFHpA)	375-85-9	PFC/537M/PFAS	ng/q-dry	NC	NC	0.21 U	0.22 J	0.43 J	0.26 J	0.22 U
Perfluorohexane sulfonic acid (PFHS)	355-46-4	PFC/537M/PFAS	ng/q-dry	NC	NC	0.33 U	0.33 U	0.32 U	0.32 U	0.34 U
Perfluorohexanoic acid (PFHxA)	307-24-4	PFC/537M/PFAS	ng/q-dry	NC	NC	0.34 U	0.34 U	0.34 U	0.33 U	0.35 U
Perfluoromonoic acid (PFNA)	375-95-1	PFC/537M/PFAS	ng/q-dry	NC	NC	0.36 U	0.36 U	0.36 U	0.36 U	0.38 U
Perfluorooctane sulfonamide (FOSA)	754-91-6	PFC/537M/PFAS	ng/q-dry	NC	NC	0.073 U	0.073 U	0.072 U	0.072 U	0.076 U
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	PFC/537M/PFAS	ng/q-dry	NC	NC	3.3	0.33 J	0.84 J	1.4	0.91 J
Perfluorooctanoic acid (PFOA)	335-67-1	PFC/537M/PFAS	ng/q-dry	NC	NC	0.21 J	0.19 J	0.82 J	0.42 J	0.24 J
Perfluoropentanoic acid (PFPeA)	2706-90-3	PFC/537M/PFAS	ng/q-dry	NC	NC	0.23 U	0.24 J	0.24 J	0.23 U	0.24 U
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	PFC/537M/PFAS	ng/q-dry	NC	NC	0.20 U	0.20 U	0.20 U	0.20 U	0.21 U
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	PFC/537M/PFAS	ng/q-dry	NC	NC	0.23 U	0.23 U	0.23 U	0.23 U	0.24 U
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	PFC/537M/PFAS	ng/q-dry	NC	NC	0.20 U	0.20 U	0.20 U	0.20 U	0.21 U
Total PFOA	--	--	ppb	33	500	0.21 J	0.19 J	0.82 J	0.42 J	0.24 J
Total PFOS	--	--	ppb	44	440	3.3	0.33 J	0.84 J	1.4	0.91 J

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
Western Shoreline**

ANALYTE	CAS NUMBER	METHOD	UNITS	NY Part 375 Restricted Residential SCO	NY Part 375 Commercial SCO	WGB-8-2-4-11032020	WAB1-0-2-11062020	WCB2-0-2-11062020	WEB4-0-2-11102020	WF2B6-2-4-11102020
						RESULT	RESULT	RESULT	RESULT	RESULT
Metals/Inorganics										
Silver, Total	7440-22-4	6010C/Ag T	mg/Kg-dry	180	1,500	0.2 J	0.2 J	1.9	0.2 U	0.2 U
Aluminum, Total	7429-90-5	6010C/Al T	mg/Kg-dry	NC	NC	4700	4420	9770	5870	5560
Arsenic, Total	7440-38-2	6010C/As T	mg/Kg-dry	16	16	4.0	4.3	7.3	4.3	11.3
Barium, Total	7440-39-3	6010C/Ba T	mg/Kg-dry	400	400	36.0	39.3	88.4	109	72.7
Beryllium, Total	7440-41-7	6010C/Be T	mg/Kg-dry	72	590	0.30 J	0.32 J	0.65	0.30 J	0.58
Calcium, Total	7440-70-2	6010C/Ca T	mg/Kg-dry	NC	NC	79300	40600	23300	12000	7450
Cadmium, Total	7440-43-9	6010C/Cd T	mg/Kg-dry	4.3	9.3	0.33 J	0.27 U	0.64	0.28 U	0.28 U
Cobalt, Total	7440-48-4	6010C/Co T	mg/Kg-dry	NC	NC	3.5 J	3.2 J	5.8	4.4 J	6.7
Chromium, Total	7440-47-3	6010C/Cr T	mg/Kg-dry	110*	NC	8.1	7.0	16.6	7.6	9.9
Copper, Total	7440-50-8	6010C/Cu T	mg/Kg-dry	270	270	15.0	17.4	1890	13.8	97.5
Iron, Total	7439-89-6	6010C/Fe T	mg/Kg-dry	NC	NC	12000	13900	19500	12400	18300
Potassium, Total	7440-09-7	6010C/K T	mg/Kg-dry	NC	NC	980	760	1160	780	710
Magnesium, Total	7439-95-4	6010C/Mg T	mg/Kg-dry	NC	NC	31900	17800	11900	4540	3180
Manganese, Total	7439-96-5	6010C/Mn T	mg/Kg-dry	2,000	10,000	300	310	311	292	206
Sodium, Total	7440-23-5	6010C/Na T	mg/Kg-dry	NC	NC	130	100 J	120 J	90 J	100 J
Nickel, Total	7440-02-0	6010C/Ni T	mg/Kg-dry	310	310	8.9	7.3	25.7	9.7	13.6
Lead, Total	7439-92-1	6010C/Pb T	mg/Kg-dry	400	1,000	60.9	38.1	465	114	171
Antimony, Total	7440-36-0	6010C/Sb T	mg/Kg-dry	NC	NC	0.6 U	0.6 U	16.8	0.7 U	0.7 U
Selenium, Total	7782-49-2	6010C/Se T	mg/Kg-dry	180	1,500	0.6 U	0.6 U	0.7 U	0.7 U	0.7 U
Thallium, Total	7440-28-0	6010C/Tl T	mg/Kg-dry	NC	NC	0.7 U	0.8 U	0.8 U	0.8 U	0.8 U
Vanadium, Total	7440-62-2	6010C/V T	mg/Kg-dry	NC	NC	12.1	10.4	17.6	12.3	13.9
Zinc, Total	7440-66-6	6010C/Zn T	mg/Kg-dry	10,000	10,000	67.5	65.4	390	51.0	98.6
Mercury, Total	7439-97-6	7471B/Hg	mg/Kg-dry	0.81	2.8	0.070	0.235	0.147	0.285	0.308
Cyanide, Total	57-12-5	9012B/CN Tot	mg/Kg-dry	27	27	0.23 U	1.78	1.11	1.63	2.08

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.

Gray shading indicates exceedance of NY Part 375 Restricted Residential SCO

Gold shading indicates exceedance of NY Part 375 Commercial SCO

**Table 7 - Soil Boring TCLP Analytical Results
Western Shoreline**

ANALYTE	CAS NUMBER	METHOD	UNITS	Maximum Concentration of Contaminants for the Toxicity Characteristic	WGB-8-2-4-11032020	WAB1-0-2-11062020	WCB2-0-2-11062020
					RESULT	RESULT	RESULT
TCLP Pesticides							
Chlordane	57-74-9	8081 TCLP	ug/L	30	10.0 U	10.0 U	10.0 U
Endrin	72-20-8	8081 TCLP	ug/L	20	0.40 U	0.40 U	0.40 U
gamma-BHC	58-89-9	8081 TCLP	ug/L	400	0.40 U	0.40 U	0.40 U
Heptachlor Epoxide	1024-57-3	8081 TCLP	ug/L	8	0.40 U	0.40 U	0.40 U
Heptachlor	76-44-8	8081 TCLP	ug/L	8	0.40 U	0.40 U	0.40 U
Methoxychlor	72-43-5	8081 TCLP	ug/L	10,000	0.40 U	0.40 U	0.40 U
Toxaphene	8001-35-2	8081 TCLP	ug/L	500	20.0 U	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	4.0 U
2,4-D	94-75-7	8151 TCLP	ug/L	10,000	20.0 U	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	20.0 U
1,2-Dichloroethane	107-06-2	8260 TCLP	ug/L	500	20.0 U	20.0 U	20.0 U
2-Butanone (MEK)	78-93-3	8260 TCLP	ug/L	200,000	200 U	200 U	200 U
Benzene	71-43-2	8260 TCLP	ug/L	500	20.0 U	20.0 U	20.0 U
Carbon Tetrachloride	56-23-5	8260 TCLP	ug/L	500	20.0 U	20.0 U	20.0 U
Chlorobenzene	108-90-7	8260 TCLP	ug/L	100,000	20.0 U	20.0 U	20.0 U
Chloroform	67-66-3	8260 TCLP	ug/L	6,000	20.0 U	20.0 U	20.0 U
Tetrachloroethene	127-18-4	8260 TCLP	ug/L	700	20.0 U	20.0 U	20.0 U
Trichloroethene	79-01-6	8260 TCLP	ug/L	500	20.0 U	20.0 U	20.0 U
Vinyl Chloride	75-01-4	8260 TCLP	ug/L	200	20.0 U	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	60.0 U
2,4,5-Trichlorophenol	95-95-4	8270 TCLP	ug/L	400,000	60.0 U	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	60.0 U
2,4-Dinitrotoluene	99749-33-4	8270 TCLP	ug/L	130	60.0 U	60.0 U	60.0 U
Hexachlorobenzene	118-74-1	8270 TCLP	ug/L	130	60.0 U	60.0 U	60.0 U
Hexachlorobutadiene	87-68-3	8270 TCLP	ug/L	500	60.0 U	60.0 U	60.0 U
Hexachloroethane	67-72-1	8270 TCLP	ug/L	3,000	60.0 U	60.0 U	60.0 U
m,p-Cresols	15831-10-4	8270 TCLP	ug/L	200,000	60.0 U	60.0 U	60.0 U
Nitrobenzene	98-95-3	8270 TCLP	ug/L	2,000	60.0 U	60.0 U	60.0 U
o-Cresol	95-48-7	8270 TCLP	ug/L	200,000	60.0 U	60.0 U	60.0 U
Pentachlorophenol	87-86-5	8270 TCLP	ug/L	100,000	120 U	120 U	120 U
Pyridine	110-86-1	8270 TCLP	ug/L	5,000	60.0 U	60.0 U	60.0 U
TCLP Metals/Inorganics							
Arsenic, Total	7440-38-2	6010 TCLP	mg/L	5	0.14 U	0.14 U	0.14 U
Barium, Total	7440-39-3	6010 TCLP	mg/L	100	2.8 U	2.8 U	2.8 U
Cadmium, Total	7440-43-9	6010 TCLP	mg/L	1	0.011 U	0.011 U	0.011 U
Chromium, Total	7440-47-3	6010 TCLP	mg/L	5	0.028 U	0.028 U	0.028 U
Lead, Total	7439-92-1	6010 TCLP	mg/L	5	0.033 U	0.033 U	0.033 U
Selenium, Total	7782-49-2	6010 TCLP	mg/L	1	0.11 U	0.11 U	0.11 U
Silver, Total	7440-22-4	6010 TCLP	mg/L	5	0.022 U	0.022 U	0.022 U
Mercury, Total	7439-97-6	Mercury on TCLP	mg/L	0.2	0.0020 U	0.0020 U	0.0020 U
Sulfide/Cyanide							
Sulfide, Reactive	18496-25-8	--	mg/kg	500	6.2 U	6.2 U	6.2 U
Cyanide, Reactive	57-12-5	--	mg/kg	250	10 U	10 U	10 U
Ignitability							
Flashpoint/Ignitability-S	--	--	--	< 140°F	> 199°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

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ALS Group USA, Corp.
dba ALS Environmental



Narrative Documents

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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.

Semivolatile 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.

A handwritten signature in black ink, appearing to read "Samantha", is written over a horizontal line.

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)
Project: Rochester REDI/1940100197

Service Request:R2010360

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
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



Cooler Receipt and Preservation Check Form

R2010360

5

O'Brien & Gere Engineers, Incorporated
Rochester, RECI

Project/Client Ramboll Folder Number _____



Cooler received on 11/3/2020 by: dm COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	Y <input checked="" type="checkbox"/>
2	Custody papers properly completed (ink, signed)?	Y <input checked="" type="checkbox"/>
3	Did all bottles arrive in good condition (unbroken)?	Y <input checked="" type="checkbox"/> N
4	Circle: Wet Ice Dry Ice Gel packs present?	Y <input checked="" type="checkbox"/> N

5a	Perchlorate samples have required headspace?	Y N <input checked="" type="checkbox"/>
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y N <input checked="" type="checkbox"/>
6	Where did the bottles originate?	AKS/ROC CLIENT
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)	<u>5.8°</u>						
Within 0-6°C?	<input checked="" type="checkbox"/> 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: Room by dm on 11/3/2020 at 1700
5035 samples placed in storage location: R-F09 by J on ✓ at ↓ within 48 hours of sampling? N

Cooler Breakdown/Preservation Check**: Date: 11/4/2020 Time: 1700 by: dm

- 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?		Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
			Yes	No						
≥12		NaOH								
≤2		HNO ₃								
≤2		H ₂ SO 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 ₂ S ₂ O ₃ (625, 608, CN), ascorbic (phenol).					
		Na ₂ S ₂ O 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: 08170-1TW; 01020-1SR

Explain all Discrepancies/ Other Comments:

*No C.O.C provided.

HPROD	BULK
HTR	FLDT
<u>SUB</u>	HGFB
ALS	LL3541

Labels secondary reviewed by: dm
PC Secondary Review: dm 11/11/20

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



CHAIN OF CUSTODY

ALS Laboratory
please tick →

LABOUR: 21 Burton Road Moorooka SA 5095
Ph: 08 8336 0800 E: als@alsglobal.com
CHRISBANK: 37 Smeaton Street St Leonards QLD 4305
Ph: 07 3243 7272 E: samples@chrisbank.com.au
DGLAUS: 10/NE 45 Stallenmoorah Drive Clinton QLD 4660
Ph: 07 4771 2800 F: glaus@alsglobal.com

GRAY: 76 Harbour Road Mackay QLD 4740
Ph: 07 4614 0177 E: mackay@alsglobal.com
LINDA BOURNE: 7-8 Wharfedale Road Springvale VIC 3173
Ph: 03 8545 9000 E: samples@linda.com.au
LIMKICK: 27 Sydney Road Mulgea NSW 2350
Ph: 02 6372 6735 E: mulgea@alsglobal.com

NEWCASTLE: 11 Epsom Mutton Rd Maitland West NSW 2320
Ph: 02 4614 2500 E: samples.newcastle@alsglobal.com
NEWCASTLE: 413 Quay Place North Newcastle NSW 2281
Ph: 024423 2083 E: newcastle@alsglobal.com
PERTH: 18 Hilda Way Maida WA 6000
Ph: 08 9200 7600 E: samples.perth@alsglobal.com

SYDNEY: 277/260 Woodpark Road Smithfield NSW 2184
Ph: 02 8764 8555 E: samples.sydney@alsglobal.com
TOWNSVILLE: 14-15 Orama Court Torokina QLD 4818
Ph: 07 4746 0000 E: towns@alsglobal.com
WOLLONGONG: 84 Kemmis Street Wollongong NSW 2500
Ph: 02 4225 3125 E: perth@alsglobal.com

CLIENT: Ramboll	TURNAROUND REQUIREMENTS: <input checked="" type="checkbox"/> Standard TAT (List due date): Standard TAT (Standard TAT may be longer for some tests e.g. Ultra Trace Organics) <input type="checkbox"/> Non Standard or urgent TAT (List due date):	FOR LABORATORY USE ONLY (Circle) Custom 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 comments:	
OFFICE: Rochester, NY	ALS QUOTE NO.: Rochester REDI Quote	COC SEQUENCE NUMBER (Circle) COC: 2 3 4 5 6 7 OF: 2 3 4 5 6 7	
PROJECT: Rochester REDI	PROJECT MANAGER: Deb Wright/Rick Duff	RECEIVED BY: <i>[Signature]</i> DATE/TIME: 11/12/2017 30	
ORDER NUMBER:	CONTACT PH: 315-546-4541	RECEIVED BY:	
SAMPLER: Veronica Davies	SAMPLER MOBILE: 856 4700072	RECEIVED BY:	
COC emailed to ALS? (NO)	EDD FORMAT (or default):	RECEIVED BY:	
Email Reports to (will default to PM if no other addresses are listed): deborah.wright@ramboll.com/ amanda.young@ramboll.com	RELINQUISHED BY: Veronica Davies	RECEIVED BY:	
Email Invoice to (will default to PM if no other addresses are listed): AccountspayableUS@Ramboll.com	DATE/TIME: 11/04/2020 8:09 am 5:30 pm	RECEIVED BY:	

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS			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	
	MATRIX: SOLID (S) WATER (W)	DATE / TIME	MATRIX	TYPE & PRESERVATIVE <i>codes below</i>	(refer to)	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 637.1
	EBI-Native-10-12-11042020		S	Soil		12	X	X	X	X	X	X	X	X	X	X	Field Core 1 Kit (4 containers)
	EBI-Fill-05-2-11042020		S	Soil		12	X	X	X	X	X	X	X	X	X	X	Field 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 Bisulfate 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
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 RED



Cooler Receipt and Preservation Check Form

R2010360 **5**
 O'Brien & Gere Engineers, Incorporated
 Rochester RED1

Project/Client Rambol Folder Number _____

Cooler received on 11/4/2020 by: SW COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
2	Custody papers properly completed (ink, signed)?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
3	Did all bottles arrive in good condition (unbroken)?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
4	Circle: Wet Ice Dry Ice Gel packs present?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>

5a	Perchlorate samples have required headspace?	Y N <input checked="" type="checkbox"/> NA
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y N <input checked="" type="checkbox"/> NA
6	Where did the bottles originate?	ALS/ROC CLIENT
7	Soil VOA received as:	Bulk Encore <u>5035</u> set NA

8. Temperature Readings Date: 11/4/2020 Time: 1740 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>7.90</u>						
Within 0-6°C?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	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: Freez by SW on 11/4/2020 at 1740
 5035 samples placed in storage location: R-Fox by J on V at J within 48 hours of sampling? Y N

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

- 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?		Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
			Yes	No						
≥12		NaOH								
≤2		HNO ₃								
≤2		H ₂ SO 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 ₂ S ₂ O ₃ (625, 608, CN), ascorbic (phenol).					
		Na ₂ S ₂ O 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: 081070-ISR, 081720-ITW
 Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

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



CHAIN OF CUSTODY

ALS Laboratory
please tick →

ALS ALBANY 21 Dunbar Road Albany NY 12205
Ph: 518 835 0600 E: albanysales@alsglobal.com
ALS ALBANY 21 Dunbar Road Albany NY 12205
Ph: 518 835 0600 E: albanysales@alsglobal.com
ALS ALBANY 21 Dunbar Road Albany NY 12205
Ph: 518 835 0600 E: albanysales@alsglobal.com

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Ph: 518 835 0600 E: albanysales@alsglobal.com
ALS ALBANY 21 Dunbar Road Albany NY 12205
Ph: 518 835 0600 E: albanysales@alsglobal.com

CLIENT: Ramboll	TURNAROUND REQUIREMENTS : <input checked="" type="checkbox"/> 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) <input type="checkbox"/> Non Standard or urgent TAT (List due date):	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:	
PROJECT: Rochester REDI	ALS QUOTE NO.: Rochester REDI Quote	COC SEQUENCE NUMBER (Circle)	
ORDER NUMBER:		COC: 2 3 4 5 6 7	
PROJECT MANAGER: Deb Wright/Rick Duff	CONTACT PH: 315-546-4541	OF: 2 3 4 5 6 7	
SAMPLER: Veronica Davies	SAMPLER MOBILE: 856 470 0072	RECEIVED BY: <i>[Signature]</i>	RECEIVED BY:
COC emailed to ALS? (NO)	EDD FORMAT (or default):	DATE/TIME: 11/6/2020 3:00 PM	DATE/TIME:
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): AccountpayableUS@Ramboll.com	DATE/TIME: 11/6/2020 1515	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS				CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price)												Additional Information
	MATRIX: SOLID (S) WATER (W)						Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required)												
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE codes below)	(refer to)	TOTAL CONTAINERS	TCLP SV 8270D, Pest 8081, Herb 8161, Metals 8010C	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 8010B, Hg 7471A, CW 9010B	PFAS 637.1	Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.		
	EB2-0-2-11062020	11/6/2020 9:15am	S	Soil		7							X	X	X	X	Terra Kit 2 (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)		

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 - Airtight Unpreserved Plastic
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; E = 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



Cooler Receipt and Preservation Check Form

R2010360 5

O'Brien & Gere Engineers, Incorporated
Rochester RED1



Project/Client Rambell Folder Number _____

Cooler received on 11/6/2020 by: @

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
2	Custody papers properly completed (ink, signed)?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
3	Did all bottles arrive in good condition (unbroken)?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N

5a	Perchlorate samples have required headspace?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/> NA
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/> NA
6	Where did the bottles originate?	<u>ALS/ROG</u> CLIENT
7	Soil VOA received as: Bulk Encore <u>5035set</u>	NA

8. Temperature Readings Date: 11/6/2020 Time: 1520 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>3.3</u>						
Within 0-6°C?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Y <input type="checkbox"/> N	Y <input type="checkbox"/> N	Y <input type="checkbox"/> N	Y <input type="checkbox"/> N	Y <input type="checkbox"/> N	Y <input type="checkbox"/> N
If <0°C, were samples frozen?	Y <input type="checkbox"/> N	Y <input type="checkbox"/> N	Y <input type="checkbox"/> N	Y <input type="checkbox"/> N	Y <input type="checkbox"/> N	Y <input type="checkbox"/> N	Y <input type="checkbox"/> 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?		Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
			Yes	No						
≥12		NaOH								
≤2		HNO ₃								
≤2		H ₂ SO 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 ₂ S ₂ O ₃ (625, 608, CN), ascorbic (phenol).					
		Na ₂ S ₂ O 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:

COC filled out in pencil

all 5035 sets labels all blank

HPROD	BULK
HTR	FLDT
<u>SUB</u>	HGFB
ALS	LL3541

Labels secondary reviewed by: @
PC Secondary Review: ATW 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

- | | |
|---|--|
| <p>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.</p> <p>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/Aroclors).</p> <p>B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p>E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p>E Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p>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.</p> <p>* Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p>H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p># Spike was diluted out.</p> | <p>+ Correlation coefficient for MSA is <0.995.</p> <p>N Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p>N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p>S Concentration has been determined using Method of Standard Additions (MSA).</p> <p>W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.</p> <p>P Concentration >40% difference between the two GC columns.</p> <p>C Confirmed by GC/MS</p> <p>Q DoD reports: indicates a pesticide/Aroclor is not confirmed ($\times 100\%$ Difference between two GC columns).</p> <p>X See Case Narrative for discussion.</p> <p>MRL Method Reporting Limit. Also known as:</p> <p>LOQ Limit of Quantitation (LOQ)
The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p>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).</p> <p>LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p>ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|



Rochester Lab ID # for State Certifications¹

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 laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory 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)
Project: Rochester REDI/1940100197

Service Request: R2010360

Non-Certified Analytes

Certifying Agency: New York Department of Health

Method	Matrix	Analyte
ALS SOP	Soil	Total Solids

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Analyst Summary report

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

Service Request: R2010360

Sample Name: WGB-8-2-4-11032020
Lab Code: R2010360-001
Sample Matrix: Soil

Date Collected: 11/3/20
Date Received: 11/3/20

Analysis Method

8082A
9012B
9045D
ALS SOP

Extracted/Digested By

KSERCU
MROGERSON

Analyzed By

BALLGEIER
MROGERSON
STALARICO
KAWONG

Sample Name: EB1-Native-10-12-11042020
Lab Code: R2010360-002
Sample Matrix: Soil

Date Collected: 11/4/20
Date Received: 11/4/20

Analysis Method

8082A
9012B
9045D
ALS SOP

Extracted/Digested By

KSERCU
MROGERSON

Analyzed By

BALLGEIER
MROGERSON
STALARICO
KAWONG

Sample Name: EB1-Fill-0.5-2-11042020
Lab Code: R2010360-003
Sample Matrix: Soil

Date Collected: 11/4/20
Date Received: 11/4/20

Analysis Method

8082A
9012B
9045D
ALS SOP

Extracted/Digested By

KSERCU
MROGERSON

Analyzed By

BALLGEIER
MROGERSON
STALARICO
KAWONG

Sample Name: WAB1-0-2-11062020
Lab Code: R2010360-004
Sample Matrix: Soil

Date Collected: 11/6/20
Date Received: 11/6/20

Analysis Method

9045D

Extracted/Digested By

Analyzed By

STALARICO

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

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

Service Request: R2010360

Sample Name: WAB1-0-2-11062020
Lab Code: R2010360-004
Sample Matrix: Soil

Date Collected: 11/6/20
Date Received: 11/6/20

Analysis Method
ALS SOP

Extracted/Digested By

Analyzed By
KAWONG

Sample Name: WCB2-0-2-11062020
Lab Code: R2010360-005
Sample Matrix: Soil

Date Collected: 11/6/20
Date Received: 11/6/20

Analysis Method
9045D
ALS SOP

Extracted/Digested By

Analyzed By
STALARICO
KAWONG



INORGANIC PREPARATION METHODS

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

Water/Liquid Matrix

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

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) 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

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010360
Date Collected: 11/03/20 09:45
Date Received: 11/03/20 17:00

Sample Name: WGB-8-2-4-11032020
Lab Code: R2010360-001

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010360
Date Collected: 11/04/20
Date Received: 11/04/20 17:30

Sample Name: EB1-Native-10-12-11042020
Lab Code: R2010360-002

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010360
Date Collected: 11/04/20
Date Received: 11/04/20 17:30

Sample Name: EB1-Fill-0.5-2-11042020
Lab Code: R2010360-003

Units: ug/Kg
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	



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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: WGB-8-2-4-11032020
Lab Code: R2010360-001

Service Request: R2010360
Date Collected: 11/03/20 09:45
Date Received: 11/03/20 17:00
Basis: Dry

Inorganic Parameters

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

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Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: WGB-8-2-4-11032020
Lab Code: R2010360-001

Service Request: R2010360
Date Collected: 11/03/20 09:45
Date Received: 11/03/20 17:00
Basis: As Received

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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: EB1-Native-10-12-11042020
Lab Code: R2010360-002

Service Request: R2010360
Date Collected: 11/04/20
Date Received: 11/04/20 17:30
Basis: Dry

Inorganic Parameters

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

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: EB1-Native-10-12-11042020
Lab Code: R2010360-002

Service Request: R2010360
Date Collected: 11/04/20
Date Received: 11/04/20 17:30
Basis: As Received

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	

ALS Group USA, Corp.
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Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: EB1-Fill-0.5-2-11042020
Lab Code: R2010360-003

Service Request: R2010360
Date Collected: 11/04/20
Date Received: 11/04/20 17:30
Basis: Dry

Inorganic Parameters

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

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: EB1-Fill-0.5-2-11042020
Lab Code: R2010360-003

Service Request: R2010360
Date Collected: 11/04/20
Date Received: 11/04/20 17:30
Basis: As Received

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	

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dba ALS Environmental

Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: WAB1-0-2-11062020
Lab Code: R2010360-004

Service Request: R2010360
Date Collected: 11/06/20 11:45
Date Received: 11/06/20 15:15
Basis: As Received

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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: WCB2-0-2-11062020
Lab Code: R2010360-005

Service Request: R2010360
Date Collected: 11/06/20 12:25
Date Received: 11/06/20 15:15
Basis: As Received

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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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: R2010360

SURROGATE RECOVERY SUMMARY
Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Extraction Method: EPA 3541

Sample Name	Lab Code	Decachlorobiphenyl	Tetrachloro-m-xylene
		22-128	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

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Analytical Report

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

Service Request: R2010360
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2013587-01

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Analyte Name	Lab Control Sample				Duplicate Lab Control Sample					
	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



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dba ALS Environmental

Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: Method Blank
Lab Code: R2010360-MB

Service Request: R2010360
Date Collected: NA
Date Received: NA
Basis: Dry

Inorganic Parameters

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

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

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

Service Request: R2010360
Date Collected: 11/04/20
Date Received: 11/04/20
Date Analyzed: 11/09/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name: EB1-Fill-0.5-2-11042020
Lab Code: R2010360-003

Units: pH Units
Basis: As Received

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample	Average	RPD	RPD Limit
				R2010360-003DUP Result			
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.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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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November 23, 2020

Reports and Invoices
ALS Environmental
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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

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Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

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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Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

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 performed 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

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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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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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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 3	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	

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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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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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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
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Ms. Sarah S Leung
Project Coordinator

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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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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 3	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	

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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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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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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
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Ms. Sarah S Leung
Project Coordinator

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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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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 3	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	

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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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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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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
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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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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	

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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 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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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
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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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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	

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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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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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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
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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.				

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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.				

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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

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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

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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

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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

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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

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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

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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

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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		

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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		

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QUALITY CONTROL DATA

Workorder: 3140795 AER528|R2010360

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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

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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

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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

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Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

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

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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

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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

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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

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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

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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

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ALS Environmental Chain of Custody

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

ALS Cont
3140195



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

Lab Code	Sample ID	# of Cont.	Matrix	Sample		Lab ID	Test Results									
				Date	Time		Ag TCLP 6010C	As TCLP 6010C	Ba TCLP 6010C	Ca TCLP 6010C	CN React 9014	Cr TCLP 6010C	Flash 1010A Mod	HERB TCLP 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	X
R2010360-002	EB1-Native-10-12-11042020		Soil	11/4/20		Middletown ALS	X	X	X	X	X	X	X	X	X	X
R2010360-003	EB1-Fil-0.5-2-11042020		Soil	11/4/20		Middletown ALS	X	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	X
R2010360-005	WCB2-0-2-11062020		Soil	11/6/20	1225	Middletown ALS	X	X	X	X	X	X	X	X	X	X

Folder Comments:
MRL U


30309

Special Instructions/Comments <i>Nysdec regis v4 add</i>	Turnaround Requirements <input type="checkbox"/> RUSH (Surcharges Apply) PLEASE CIRCLE WORK DAYS 1 2 3 4 5 <input checked="" type="checkbox"/> STANDARD Requested FAX Date: _____ Requested Report Date: <u>11/25/20</u>	Report Requirements <input type="checkbox"/> I. Results Only <input checked="" type="checkbox"/> II. Results + QC Summaries <input type="checkbox"/> III. Results + QC and Calibration Summaries <input checked="" type="checkbox"/> IV. Data Validation Report with Raw Data PQL/MDL/ <u>N</u> EDD <u>Y</u>	Invoice Information PO# <u>58R2010360</u> Bill to _____
	H - Test is On Hold P - Test is Authorized for Prep Only		

Relinquished By: *Janice Jaeger* 11/13/20 1320 Received By: *Fedus* 11/13/20 0850
Teax 11/13/20 0850
 Airbill Number: 11/13/20 0850

R2010360-001	WCIB-8-2-4-11032020		Soil	11/3/20	0945	Middletown ALS	Pb TCLP 6010C	Pest OC TCLP 8081B	Se TCLP 6010C	Sulfide React 9034 Modified	SVO TCLP 8270D	TCLP ZHE EPA 1311	TCLP EPA 1311	VOC TCLP 8260C
R2010360-002	EBI-Native-10-12-11042020		Soil	11/4/20		Middletown ALS								
R2010360-003	EBI-Fill-0.5-2-11042020		Soil	11/4/20		Middletown ALS								
R2010360-004	WAB1-0-2-11062020		Soil	11/6/20	1145	Middletown ALS								
R2010360-005	WCB2-0-2-11062020		Soil	11/6/20	1225	Middletown ALS								

R2010360

 **Ship To: Middletown ALS**
ALS Environmental - Middletown
301 Fulling Mill Rd.
Middletown, PA 17057

PC *SMO* Date 11/11/62
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 #: 3140795 Initials: SEC Date: 11/13/20

- | | | | |
|--|---------------------------------------|--------------------------------------|-------------------------------------|
| 1. Were airbills / tracking numbers present and recorded?..... | NONE | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| Tracking number: <u>1730 2433 3852</u> | | | |
| 2. Are Custody Seals on shipping containers intact?..... | <input checked="" type="radio"/> NONE | <input type="radio"/> YES | <input type="radio"/> NO |
| 3. Are Custody Seals on sample containers intact?..... | <input checked="" type="radio"/> NONE | <input type="radio"/> YES | <input type="radio"/> NO |
| 4. Is there a COC (Chain-of-Custody) present?..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 5. Are the COC and bottle labels complete, legible and in agreement?..... | | <input type="radio"/> YES | <input checked="" type="radio"/> NO |
| 5a. Does the COC contain sample locations?..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 5b. Does the COC contain date and time of sample collection for all samples?..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 5c. Does the COC contain sample collectors name?..... | | <input type="radio"/> YES | <input checked="" type="radio"/> NO |
| 5d. Does the COC note the type(s) of preservation for all bottles?..... | | <input type="radio"/> YES | <input checked="" type="radio"/> NO |
| 5e. Does the COC note the number of bottles submitted for each sample?..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 5f. Does the COC note the type of sample, composite or grab?..... | | <input type="radio"/> YES | <input checked="" type="radio"/> NO |
| 5g. Does the COC note the matrix of the sample(s)?..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 6. Are all aqueous samples requiring preservation preserved correctly? ¹ | N/A | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 8. Are all samples within holding times for the requested analyses?..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?..... | <input checked="" type="radio"/> N/A | <input type="radio"/> YES | <input type="radio"/> NO |
| 11. Were the samples received on ice?..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 12. Were sample temperatures measured at 0.0-6.0°C..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below..... | | <input type="radio"/> YES | <input checked="" type="radio"/> NO |
| 13a. Are the samples required for SDWA compliance reporting?..... | <input checked="" type="radio"/> N/A | <input type="radio"/> YES | <input type="radio"/> NO |
| 13b. Did the client provide a SDWA PWS ID#?..... | <input checked="" type="radio"/> N/A | <input type="radio"/> YES | <input type="radio"/> NO |
| 13c. Are all aqueous unpreserved SDWA samples pH 5-9?..... | <input checked="" type="radio"/> N/A | <input type="radio"/> YES | <input type="radio"/> NO |
| 13d. Did the client provide the SDWA sample location ID/Description?..... | <input checked="" type="radio"/> N/A | <input type="radio"/> YES | <input type="radio"/> NO |
| 13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?..... | <input checked="" type="radio"/> N/A | <input type="radio"/> YES | <input type="radio"/> NO |

Cooler #: _____

Temperature (°C): 3° _____

Thermometer ID: 307 _____

Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

¹Final 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



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)
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 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

A handwritten signature in black ink, appearing to read "Samantha", is written over a horizontal line.

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.

A handwritten signature in black ink, appearing to read "Samanta", is written over a horizontal line.

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

A handwritten signature in black ink, appearing to read "Samanta", is written over a horizontal line.

Approved by _____

Date 12/23/2020



quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Jamanta

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)
Project: Rochester REDI/1940100197

Service Request:R2010361

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
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



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: dm COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
2	Custody papers properly completed (ink, signed)?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
3	Did all bottles arrive in good condition (unbroken)?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
4	Circle: Wet Ice Dry Ice Gel packs present?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>

5a	Perchlorate samples have required headspace?	Y N <input checked="" type="checkbox"/>
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y N <input checked="" type="checkbox"/>
6	Where did the bottles originate?	AKS/ROC CLIENT
7	Soil VOA received as:	Bulk Encore 5035 NA

8. Temperature Readings Date: 11/3/2020 Time: 1700 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>518°</u>						
Within 0-6°C?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> 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: Room by dm on 11/3/2020 at 1700
 5035 samples placed in storage location: R-F09 by J on ✓ at ↓ within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 11/4/2020 Time: 1530 by: dm

- 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?		Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
			Yes	No						
≥12		NaOH								
≤2		HNO ₃								
≤2		H ₂ SO 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 ₂ S ₂ O ₃ (625, 608, CN), ascorbic (phenol).					
		Na ₂ S ₂ O 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: 081020-1SR, 081720-1TW

Explain all Discrepancies/ Other Comments:

*No C.O.C provided.

HPROD	BULK
HTR	FLDT
<input checked="" type="checkbox"/> SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: dm

PC Secondary Review: dm 11/11/20

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



CHAIN OF CUSTODY

ALS Laboratory:
please tick →

LADELAIDE 21 Burma Road Peersie SA 5095
Ph: 08 8350 0860 E: arleide@alsglobal.com

UBRISBANE 37 Bhand Street Stafford QLD 4053
Ph: 07 3243 7227 E: samples.brisbane@alsglobal.com

GLADSTONE 46 Callenrodth Drive Canton QLD 4660
Ph: 07 7471 5000 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

MUDGELE 27 Sydney Road Mudgee NSW 2850
Ph: 02 6377 0735 E: mudgee.mel@alsglobal.com

NEWCASTLE 5625 Marband Rd Mayfield West NSW 2304
Ph: 02 4014 7500 E: samples.newcastle@alsglobal.com

NOOWRA 4113 Geary Place North Nowra NSW 2541
Ph: 024423 2003 E: nowra@alsglobal.com

PERTH 10 Hood Way Malaga WA 6000
Ph: 08 9200 7655 E: samples.perth@alsglobal.com

SYDNEY 277-280 Woodpecker Road Smithfield NSW 2114
Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

TOWNSVILLE 14-15 Deans Court Bohle QLD 4918
Ph: 07 4700 0000 E: townsville.environmental@alsglobal.com

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

CLIENT: Ramboll	TURNAROUND REQUIREMENTS : <input checked="" type="checkbox"/> 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) <input type="checkbox"/> 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:		Random Sample Temperature on Receipt:	°C
PROJECT MANAGER: Deb Wright/Rick Duff	CONTACT PH: 315-546-4541	Other comment:	
SAMPLER: Veronica Davies	SAMPLER MOBILE: 856 970 0072	RECEIVED BY: <i>[Signature]</i>	RECEIVED BY:
COC emailed to ALS? (NO)	EDD FORMAT (or default):	DATE/TIME: 11/08/2020	DATE/TIME:
Email Reports to (will default to PM if no other addresses are listed): deborah.wright@ramboll.com/amanda.young@ramboll.com		DATE/TIME: 11/14/2020 1730	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed): Accounts.payable@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 extract 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 codes below) (refer to	TOTAL CONTAINERS	TCLP SV 8270D, Pest 8081, Herb 8161, Metals 8010C	TCLP 8260C	Ignitability 1030	Reactivity 9010/Corrosivity 1110	TEN 9014	PCB 8082		8260 VOCs + 10	SV 8270D + 20, Pest 8081B, PCB 8082, SV 8270 + 20 SIM	TAL Metals 6010B, Hg 7471A, CN 9010B	PFA S 837.1	Comments on likely contaminant levels, dilutions, or samples requiring specific OC 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-05-2-11092020		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 = Airtight Unpreserved Plastic
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved
 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 REID

Project/Client Rambol Folder Number _____



Cooler received on 11/4/2020 by: SW COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	Y <input checked="" type="checkbox"/> N
2	Custody papers properly completed (ink, signed)?	<input checked="" type="checkbox"/> Y N
3	Did all bottles arrive in good condition (unbroken)?	<input checked="" type="checkbox"/> Y N
4	Circle: Wet <input checked="" type="checkbox"/> Ice Dry Ice Gel packs present?	<input checked="" type="checkbox"/> Y N

5a	Perchlorate samples have required headspace?	Y N <input checked="" type="checkbox"/> NA
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y N <input checked="" type="checkbox"/> NA
6	Where did the bottles originate?	ALS/ROC CLIENT
7	Soil VOA received as:	Bulk Encore <u>5035</u> set NA

8. Temperature Readings Date: 11/4/2020 Time: 1740 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>7.90</u>						
Within 0-6°C?	Y <input checked="" type="checkbox"/> 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: Freez by SW on 11/4/2020 at 1740
5035 samples placed in storage location: Freez by J on ✓ at ↓ within 48 hours of sampling? Y N

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

- 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
- 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?		Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
			Yes	No						
≥12		NaOH								
≤2		HNO ₃								
≤2		H ₂ SO 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 ₂ S ₂ O ₃ (625, 608, CN), ascorbic (phenol).					
		Na ₂ S ₂ O 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: 081020-15R, 081720-17W
Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
<u>SUB</u>	HGFB
ALS	LL3541

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



CHAIN OF CUSTODY

ALS Laboratory
please tick →

QADELAIDE 21 Burma Road Pooraka SA 5065
Ph. 08 8359 0200 E. a Adelaide@alsglobal.com

QBRISBANE 37 Shand Street Sturford QLD 4063
Ph. 07 3243 7222 E. samplesbrisbane@alsglobal.com

QGLADSTONE 46 Callamondish Drive Clinton QLD 4083
Ph. 07 7471 5000 E. gladstone@alsglobal.com

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

QWINDSOR 2-4 Westall Road Springvale VIC 3171
Ph. 03 8549 9000 E. samples.melbourne@alsglobal.com

QSYDNEY 27 Sydney Road Mudgee NSW 2850
Ph. 02 8372 8735 E. mudgee.mails@alsglobal.com

CLIENT: Ramboll	TURNAROUND REQUIREMENTS: <input checked="" type="checkbox"/> Standard TAT (List due date): Standard TAT (Standard TAT may be longer for some tests e.g. Ultra Trace Organics) <input type="checkbox"/> Non Standard or urgent TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
OFFICE: Rochester, NY	ALS QUOTE NO.: Rochester REDI Quote	COC SEQUENCE NUMBER (Circle) COC: 2 3 4 5 6 7 OF: 2 3 4 5 6 7
PROJECT: Rochester REDI	CONTACT PH: 315-546-4541	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:
ORDER NUMBER:	SAMPLER: Veronica Davies	RECEIVED BY: <i>Seungjoon</i>
PROJECT MANAGER: Deb Wright/Rick Duff	SAMPLER MOBILE: 856 470 0172	RELINQUISHED BY: Veronica Davies
EMAIL REPORTS TO (will default to PM if no other addresses are listed): deborah.wright@ramboll.com/amanda.young@ramboll.com	EDD FORMAT (or default):	DATE/TIME: 11/6/2020 3:00 PM
EMAIL INVOICE TO (will default to PM if no other addresses are listed): AccountspayableUS@ramboll.com		DATE/TIME: 11/6/2020 1515

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS			CONTAINER INFORMATION		ANALYSIS REQUIRED including BUTES (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
	MATRIX	DATE / TIME	TYPE & PRESERVATIVE codes below	TOTAL CONTAINERS	TCLP SV 8700, Pest 8081, Herb 8161, Metals 80100	TCLP 8260C	Ignitability 103D	Reactivity 9010/Corrosivity 1110	TCN 9014	PCB 8002	8260 VOCs + 10	SV 8270D + 20, Pest: 8081B, PCB 8002, SV 8270+20 SIM	TAL Metals 6010B, HB 7471A, CN 9010B	PFAS 637.1				
	EB2-0-2-11062020	11/6/2020 9:15am	Soil	7								X	X	X	X	Terra Kit 2 (4 containers)		
	WAB1-0-2-11062020	11/6/2020 11:45	Soil	12	X	X	X	X				X	X	X	X	Terra Kit 1 (4 containers)		
	WCB2-0-2-11062020	11/6/2020 12:25	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/Gd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airflight Unpreserved; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airflight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Spediation 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

R2010361

5

O'Brien & Gere Engineers, Incorporated
Rochester RED



Project/Client Rumboll Folder Number _____

Cooler received on 11/6/2020 by: @

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
2	Custody papers properly completed (ink, signed)?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
3	Did all bottles arrive in good condition (unbroken)?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N

5a	Perchlorate samples have required headspace?	Y N <input checked="" type="checkbox"/> NA
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y N <input checked="" type="checkbox"/> NA
6	Where did the bottles originate?	<u>ALS/ROS</u> CLIENT
7	Soil VOA received as: Bulk Encore <u>5035set</u> NA	

8. Temperature Readings Date: 11/6/2020 Time: 1520 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>3.3</u>						
Within 0-6°C?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> 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: L-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
- 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?		Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
			Yes	No						
≥12		NaOH								
≤2		HNO ₃								
≤2		H ₂ SO 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 ₂ S ₂ O ₃ (625, 608, CN), ascorbic (phenol).					
		Na ₂ S ₂ O 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: 090720-15R, 081720-17W
Explain all Discrepancies/Other Comments:

COC filled out in pencil

all 5035 sets labels all blank

HPROD	BULK
HTR	FLDT
<u>SUB</u>	HGFB
ALS	LL3541

Labels secondary reviewed by: @
PC Secondary Review: 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

- | | |
|---|--|
| <p>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.</p> <p>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/Aroclors).</p> <p>B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p>E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p>E Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p>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.</p> <p>* Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p>H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p># Spike was diluted out.</p> | <p>+ Correlation coefficient for MSA is <0.995.</p> <p>N Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p>N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p>S Concentration has been determined using Method of Standard Additions (MSA).</p> <p>W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.</p> <p>P Concentration >40% difference between the two GC columns.</p> <p>C Confirmed by GC/MS</p> <p>Q DoD reports: indicates a pesticide/Aroclor is not confirmed ($\times 100\%$ Difference between two GC columns).</p> <p>X See Case Narrative for discussion.</p> <p>MRL Method Reporting Limit. Also known as:</p> <p>LOQ Limit of Quantitation (LOQ)
The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p>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).</p> <p>LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p>ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|



Rochester Lab ID # for State Certifications¹

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 laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory 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)
Project: Rochester REDI/1940100197

Service Request: R2010361

Non-Certified Analytes

Certifying Agency: New York Department of Health

Method	Matrix	Analyte
ALS SOP	Soil	Total Solids

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

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

Service Request: R2010361

Sample Name: WGB-8-2-4-11032020
Lab Code: R2010361-001
Sample Matrix: Soil

Date Collected: 11/3/20
Date Received: 11/3/20

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
Lab Code: R2010361-002
Sample Matrix: Soil

Date Collected: 11/4/20
Date Received: 11/4/20

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
Lab Code: R2010361-003
Sample Matrix: Soil

Date Collected: 11/4/20
Date Received: 11/4/20

Analysis Method	Extracted/Digested By	Analyzed By
6010C	AKONZEL	KMCLAEN
7471B	AKONZEL	AKONZEL

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

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

Service Request: R2010361

Sample Name: EB1-Fill-0.5-2-11042020
Lab Code: R2010361-003
Sample Matrix: Soil

Date Collected: 11/4/20
Date Received: 11/4/20

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
Lab Code: R2010361-004
Sample Matrix: Soil

Date Collected: 11/6/20
Date Received: 11/6/20

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
Lab Code: R2010361-004.R01
Sample Matrix: Soil

Date Collected: 11/6/20
Date Received: 11/6/20

Analysis Method	Extracted/Digested By	Analyzed By
8260C		FNAEGLER
8270D	KSERCU	JMISIUREWICZ

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

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

Service Request: R2010361

Sample Name: WAB1-0-2-11062020
Lab Code: R2010361-005
Sample Matrix: Soil

Date Collected: 11/6/20
Date Received: 11/6/20

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
Lab Code: R2010361-005.R01
Sample Matrix: Soil

Date Collected: 11/6/20
Date Received: 11/6/20

Analysis Method	Extracted/Digested By	Analyzed By
8270D	KSERCU	JMISIUREWICZ

Sample Name: WCB2-0-2-11062020
Lab Code: R2010361-006
Sample Matrix: Soil

Date Collected: 11/6/20
Date Received: 11/6/20

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

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

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

Service Request: R2010361

Sample Name: WCB2-0-2-11062020
Lab Code: R2010361-006.R01
Sample Matrix: Soil

Date Collected: 11/6/20
Date Received: 11/6/20

Analysis Method

8260C
8270D

Extracted/Digested By

KSERCU

Analyzed By

FNAEGLER
JMISIUREWICZ



INORGANIC PREPARATION METHODS

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

Water/Liquid Matrix

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

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) 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
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Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
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www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/03/20 09:45
Date Received: 11/03/20 17:00

Sample Name: WGB-8-2-4-11032020
Lab Code: R2010361-001

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/03/20 09:45
Date Received: 11/03/20 17:00

Sample Name: WGB-8-2-4-11032020
Lab Code: R2010361-001

Units: ug/Kg
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			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30

Sample Name: EB1-Native-10-12-11042020
Lab Code: R2010361-002

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Sample Name: EB1-Native-10-12-11042020
Lab Code: R2010361-002

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30

Units: ug/Kg
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			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30

Sample Name: EB1-Fill-0.5-2-11042020
Lab Code: R2010361-003

Units: ug/Kg
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	

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30

Sample Name: EB1-Fill-0.5-2-11042020
Lab Code: R2010361-003

Units: ug/Kg
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			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 09:15
Date Received: 11/06/20 15:15

Sample Name: EB2-0-2-11062020
Lab Code: R2010361-004

Units: ug/Kg
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	

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 09:15
Date Received: 11/06/20 15:15

Sample Name: EB2-0-2-11062020
Lab Code: R2010361-004

Units: ug/Kg
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			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 09:15
Date Received: 11/06/20 15:15

Sample Name: EB2-0-2-11062020
Lab Code: R2010361-004

Units: ug/Kg
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	

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 09:15
Date Received: 11/06/20 15:15

Sample Name: EB2-0-2-11062020
Lab Code: R2010361-004

Units: ug/Kg
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			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 11:45
Date Received: 11/06/20 15:15

Sample Name: WAB1-0-2-11062020
Lab Code: R2010361-005

Units: ug/Kg
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	

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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 11:45
Date Received: 11/06/20 15:15

Sample Name: WAB1-0-2-11062020
Lab Code: R2010361-005

Units: ug/Kg
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			

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 12:25
Date Received: 11/06/20 15:15

Sample Name: WCB2-0-2-11062020
Lab Code: R2010361-006

Units: ug/Kg
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	

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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 12:25
Date Received: 11/06/20 15:15

Sample Name: WCB2-0-2-11062020
Lab Code: R2010361-006

Units: ug/Kg
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			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 12:25
Date Received: 11/06/20 15:15

Sample Name: WCB2-0-2-11062020
Lab Code: R2010361-006

Units: ug/Kg
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	

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 12:25
Date Received: 11/06/20 15:15

Sample Name: WCB2-0-2-11062020
Lab Code: R2010361-006

Units: ug/Kg
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

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Analytical Report

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

Service Request: R2010361
Date Collected: 11/03/20 09:45
Date Received: 11/03/20 17:00

Sample Name: WGB-8-2-4-11032020
Lab Code: R2010361-001

Units: ug/Kg
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	

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010361
Date Collected: 11/03/20 09:45
Date Received: 11/03/20 17:00

Sample Name: WGB-8-2-4-11032020
Lab Code: R2010361-001

Units: ug/Kg
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			

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Analytical Report

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

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30

Sample Name: EB1-Native-10-12-11042020
Lab Code: R2010361-002

Units: ug/Kg
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	

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Analytical Report

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

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30

Sample Name: EB1-Native-10-12-11042020
Lab Code: R2010361-002

Units: ug/Kg
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			

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30

Sample Name: EB1-Fill-0.5-2-11042020
Lab Code: R2010361-003

Units: ug/Kg
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	

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Analytical Report

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

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30

Sample Name: EB1-Fill-0.5-2-11042020
Lab Code: R2010361-003

Units: ug/Kg
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			

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 09:15
Date Received: 11/06/20 15:15

Sample Name: EB2-0-2-11062020
Lab Code: R2010361-004

Units: ug/Kg
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	

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 09:15
Date Received: 11/06/20 15:15

Sample Name: EB2-0-2-11062020
Lab Code: R2010361-004

Units: ug/Kg
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			

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 09:15
Date Received: 11/06/20 15:15

Sample Name: EB2-0-2-11062020
Lab Code: R2010361-004

Units: ug/Kg
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	*

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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 09:15
Date Received: 11/06/20 15:15

Sample Name: EB2-0-2-11062020
Lab Code: R2010361-004

Units: ug/Kg
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			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 11:45
Date Received: 11/06/20 15:15

Sample Name: WAB1-0-2-11062020
Lab Code: R2010361-005

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 11:45
Date Received: 11/06/20 15:15

Sample Name: WAB1-0-2-11062020
Lab Code: R2010361-005

Units: ug/Kg
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			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 11:45
Date Received: 11/06/20 15:15

Sample Name: WAB1-0-2-11062020
Lab Code: R2010361-005

Units: ug/Kg
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	*

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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 11:45
Date Received: 11/06/20 15:15

Sample Name: WAB1-0-2-11062020
Lab Code: R2010361-005

Units: ug/Kg
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			

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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 12:25
Date Received: 11/06/20 15:15

Sample Name: WCB2-0-2-11062020
Lab Code: R2010361-006

Units: ug/Kg
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	

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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 12:25
Date Received: 11/06/20 15:15

Sample Name: WCB2-0-2-11062020
Lab Code: R2010361-006

Units: ug/Kg
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			

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 12:25
Date Received: 11/06/20 15:15

Sample Name: WCB2-0-2-11062020
Lab Code: R2010361-006

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 12:25
Date Received: 11/06/20 15:15

Sample Name: WCB2-0-2-11062020
Lab Code: R2010361-006

Units: ug/Kg
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

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/03/20 09:45
Date Received: 11/03/20 17:00

Sample Name: WGB-8-2-4-11032020
Lab Code: R2010361-001

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30

Sample Name: EB1-Native-10-12-11042020
Lab Code: R2010361-002

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30

Sample Name: EB1-Fill-0.5-2-11042020
Lab Code: R2010361-003

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 09:15
Date Received: 11/06/20 15:15

Sample Name: EB2-0-2-11062020
Lab Code: R2010361-004

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 11:45
Date Received: 11/06/20 15:15

Sample Name: WAB1-0-2-11062020
Lab Code: R2010361-005

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 12:25
Date Received: 11/06/20 15:15

Sample Name: WCB2-0-2-11062020
Lab Code: R2010361-006

Units: ug/Kg
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)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Collected: 11/03/20 09:45
Date Received: 11/03/20 17:00

Sample Name: WGB-8-2-4-11032020
Lab Code: R2010361-001

Units: ug/Kg
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)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30

Sample Name: EB1-Native-10-12-11042020
Lab Code: R2010361-002

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30

Sample Name: EB1-Fill-0.5-2-11042020
Lab Code: R2010361-003

Units: ug/Kg
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	

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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 09:15
Date Received: 11/06/20 15:15

Sample Name: EB2-0-2-11062020
Lab Code: R2010361-004

Units: ug/Kg
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	

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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 11:45
Date Received: 11/06/20 15:15

Sample Name: WAB1-0-2-11062020
Lab Code: R2010361-005

Units: ug/Kg
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	

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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 12:25
Date Received: 11/06/20 15:15

Sample Name: WCB2-0-2-11062020
Lab Code: R2010361-006

Units: ug/Kg
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
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METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: Ramboll US Corp (Syracuse)	Service Request: WGB-8-2-4-11032020
Project No.: R2010361	Date Collected: 11/3/2020
Project Name:	Date Received: 11/3/2020
Matrix: SOIL	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
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: Ramboll US Corp (Syracuse) Service Request: WGB-8-2-4-11032020
 Project No.: R2010361 Date Collected: 11/4/2020
 Project Name: Date Received: 11/4/2020
 Matrix: SOIL 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
- 1 -
INORGANIC ANALYSIS DATA PACKAGE**

Client: Ramboll US Corp (Syracuse) Service Request: WGB-8-2-4-11032020
Project No.: R2010361 Date Collected: 11/4/2020
Project Name: Date Received: 11/4/2020
Matrix: SOIL 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
- 1 -
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: 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
- 1 -
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: 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
- 1 -
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

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Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: WGB-8-2-4-11032020
Lab Code: R2010361-001

Service Request: R2010361
Date Collected: 11/03/20 09:45
Date Received: 11/03/20 17:00
Basis: Dry

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Cyanide, Total	9012B	0.24 U	mg/Kg	0.24	0.17	1	11/12/20 12:06	11/11/20	

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Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: WGB-8-2-4-11032020
Lab Code: R2010361-001

Service Request: R2010361
Date Collected: 11/03/20 09:45
Date Received: 11/03/20 17:00
Basis: As Received

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Total Solids	ALS SOP	91.0	Percent	-	-	1	11/13/20 14:00	NA	

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Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: EB1-Native-10-12-11042020
Lab Code: R2010361-002

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30
Basis: Dry

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Cyanide, Total	9012B	0.33 U	mg/Kg	0.33	0.19	1	11/12/20 12:06	11/11/20	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: EB1-Native-10-12-11042020
Lab Code: R2010361-002

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30
Basis: As Received

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Total Solids	ALS SOP	78.3	Percent	-	-	1	11/13/20 14:00	NA	

ALS Group USA, Corp.
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Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: EB1-Fill-0.5-2-11042020
Lab Code: R2010361-003

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30
Basis: Dry

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Cyanide, Total	9012B	0.33 U	mg/Kg	0.33	0.19	1	11/12/20 12:07	11/11/20	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: EB1-Fill-0.5-2-11042020
Lab Code: R2010361-003

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30
Basis: As Received

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Total Solids	ALS SOP	83.4	Percent	-	-	1	11/13/20 13:00	NA	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: EB2-0-2-11062020
Lab Code: R2010361-004

Service Request: R2010361
Date Collected: 11/06/20 09:15
Date Received: 11/06/20 15:15
Basis: Dry

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Cyanide, Total	9012B	0.79	mg/Kg	0.36	0.21	1	11/12/20 12:08	11/11/20	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: EB2-0-2-11062020
Lab Code: R2010361-004

Service Request: R2010361
Date Collected: 11/06/20 09:15
Date Received: 11/06/20 15:15
Basis: As Received

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Total Solids	ALS SOP	69.5	Percent	-	-	1	11/13/20 13:00	NA	

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Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: WAB1-0-2-11062020
Lab Code: R2010361-005

Service Request: R2010361
Date Collected: 11/06/20 11:45
Date Received: 11/06/20 15:15
Basis: Dry

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Cyanide, Total	9012B	1.78	mg/Kg	0.28	0.17	1	11/12/20 12:09	11/11/20	

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Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: WAB1-0-2-11062020
Lab Code: R2010361-005

Service Request: R2010361
Date Collected: 11/06/20 11:45
Date Received: 11/06/20 15:15
Basis: As Received

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Total Solids	ALS SOP	90.5	Percent	-	-	1	11/13/20 13:00	NA	

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Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: WCB2-0-2-11062020
Lab Code: R2010361-006

Service Request: R2010361
Date Collected: 11/06/20 12:25
Date Received: 11/06/20 15:15
Basis: Dry

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Cyanide, Total	9012B	1.11	mg/Kg	0.33	0.19	1	11/12/20 12:09	11/11/20	

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Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: WCB2-0-2-11062020
Lab Code: R2010361-006

Service Request: R2010361
Date Collected: 11/06/20 12:25
Date Received: 11/06/20 15:15
Basis: As Received

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Total Solids	ALS SOP	86.5	Percent	-	-	1	11/13/20 13:00	NA	



QC Summary Forms

ALS Environmental—Rochester Laboratory
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Volatile Organic Compounds by GC/MS

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QA/QC Report

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

Service Request: R2010361

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: EPA 5035A

Sample Name	Lab Code	4-Bromofluorobenzene	Dibromofluoromethane	Toluene-d8
		31-154	63-138	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

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Analytical Report

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

Service Request: R2010361
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2013633-04

Units: ug/Kg
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	

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010361
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2013633-04

Units: ug/Kg
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			

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010361
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2013982-04

Units: ug/Kg
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	

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010361
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2013982-04

Units: ug/Kg
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			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2014023-05

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2014023-05

Units: ug/Kg
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			

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QA/QC Report

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
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

ALS Group USA, Corp.
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QA/QC Report

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

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

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QA/QC Report

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

ALS Group USA, Corp.
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QA/QC Report

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

Service Request: R2010361
Date Analyzed: 11/15/20

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/Kg
Basis:Dry

Analyte Name	Lab Control Sample RQ2014023-03				Duplicate Lab Control Sample RQ2014023-04				RPD	RPD Limit
	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
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

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QA/QC Report

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

Service Request: R2010361
Date Analyzed: 11/15/20

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/Kg
Basis:Dry

Analyte Name	Lab Control Sample RQ2014023-03				Duplicate Lab Control Sample RQ2014023-04					
	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

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: R2010361

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	2-Fluorobiphenyl	2-Fluorophenol
		19-107	10-115	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)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361

SURROGATE RECOVERY SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3541

Sample Name	Lab Code	Nitrobenzene-d5	Phenol-d6	Terphenyl-d14
		10-130	17-135	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

ALS Group USA, Corp.
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QA/QC Report

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

Service Request: R2010361
Date Collected: 11/06/20
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
Lab Code: R2010361-005
Analysis Method: 8270D
Prep Method: EPA 3541

Units: ug/Kg
Basis: Dry

Analyte Name	Matrix Spike RQ2014703-04				Duplicate Matrix Spike RQ2014703-05			% Rec Limits	RPD	RPD Limit
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
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.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: R2010361
Date Collected: 11/06/20
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
Lab Code: R2010361-005
Analysis Method: 8270D
Prep Method: EPA 3541

Units: ug/Kg
Basis: Dry

Analyte Name	Matrix Spike RQ2014703-04				Duplicate Matrix Spike RQ2014703-05			% Rec Limits	RPD	RPD Limit
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
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

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)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Collected: 11/06/20
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
Lab Code: R2010361-005
Analysis Method: 8270D
Prep Method: EPA 3541

Units: ug/Kg
Basis: Dry

Analyte Name	Matrix Spike RQ2014703-04				Duplicate Matrix Spike RQ2014703-05				% Rec Limits	RPD	RPD Limit
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec				
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.

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2013666-01

Units: ug/Kg
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	

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010361
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2013666-01

Units: ug/Kg
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			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2013740-01

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2013740-01

Units: ug/Kg
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			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2014703-01

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2014703-01

Units: ug/Kg
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			

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Analyte Name	Lab Control Sample RQ2013666-02				Duplicate Lab Control Sample RQ2013666-03				RPD	RPD Limit
	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
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

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Analyte Name	Lab Control Sample RQ2013666-02				Duplicate Lab Control Sample RQ2013666-03				RPD	RPD Limit
	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
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

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Analyte Name	Lab Control Sample RQ2013666-02				Duplicate Lab Control Sample RQ2013666-03					
	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

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Analyte Name	Lab Control Sample RQ2013740-02				Duplicate Lab Control Sample RQ2013740-03				RPD	RPD Limit
	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
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

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Analyte Name	Lab Control Sample RQ2013740-02				Duplicate Lab Control Sample RQ2013740-03				RPD	RPD Limit
	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
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

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Analyte Name	Lab Control Sample RQ2013740-02				Duplicate Lab Control Sample RQ2013740-03				RPD	RPD Limit
	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
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

ALS Group USA, Corp.
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QA/QC Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester RED1/1940100197
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

Analyte Name	Lab Control Sample RQ2014703-02				Duplicate Lab Control Sample RQ2014703-03				RPD	RPD Limit
	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
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

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Analyte Name	Lab Control Sample RQ2014703-02				Duplicate Lab Control Sample RQ2014703-03				RPD	RPD Limit
	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
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

ALS Group USA, Corp.
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QA/QC Report

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

Analyte Name	Lab Control Sample RQ2014703-02				Duplicate Lab Control Sample RQ2014703-03				RPD	RPD Limit
	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
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)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Extraction Method: EPA 3541

Sample Name	Lab Code	Decachlorobiphenyl	Tetrachloro-m-xylene
		10-145	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

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QA/QC Report

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

Service Request: R2010361
Date Collected: 11/03/20
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
Lab Code: R2010361-001
Analysis Method: 8081B
Prep Method: EPA 3541

Units: ug/Kg
Basis: Dry

Analyte Name	Sample		Matrix Spike RQ2013661-06		Duplicate Matrix Spike RQ2013661-07		% Rec Limits	RPD	RPD Limit	
	Result	Result	Spike Amount	% Rec	Result	Spike Amount				
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.

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2013661-01

Units: ug/Kg
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	

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010361
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2013843-01

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Analyte Name	Lab Control Sample RQ2013661-02				Duplicate Lab Control Sample RQ2013661-03				RPD	RPD Limit
	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
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

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Analyte Name	Lab Control Sample RQ2013843-02				Duplicate Lab Control Sample RQ2013843-03				RPD	RPD Limit
	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
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)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361

SURROGATE RECOVERY SUMMARY
Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Extraction Method: EPA 3541

Sample Name	Lab Code	Decachlorobiphenyl	Tetrachloro-m-xylene
		22-128	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)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Collected: 11/04/20
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
Lab Code: R2010361-003
Analysis Method: 8082A
Prep Method: EPA 3541

Units: ug/Kg
Basis: Dry

Analyte Name	Sample Result	Result	Matrix Spike RQ2013661-08		Duplicate Matrix Spike RQ2013661-09		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
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.

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2013661-01

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2013843-01

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Analyte Name	Lab Control Sample				Duplicate Lab Control Sample					
	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

ALS Group USA, Corp.
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QA/QC Report

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

Analyte Name	Lab Control Sample				Duplicate Lab Control Sample					
	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

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METALS

-3-

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	Continuing Calibration Blank ug/L						Preparation Blank		M
		1	C	2	C	3	C	C		
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

-3-

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	Continuing Calibration Blank ug/L						Preparation Blank		M
		1	C	2	C	3	C	C		
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

-3-

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	Continuing Calibration Blank ug/L						Preparation Blank		M
		1	C	2	C	3	C	C		
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
-6-
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

-7-

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			Solid (mg/K				
	True	Found	%R	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

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: Method Blank
Lab Code: R2010361-MB

Service Request: R2010361
Date Collected: NA
Date Received: NA
Basis: Dry

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Cyanide, Total	9012B	0.30 U	mg/Kg	0.30	0.17	1	11/12/20 11:51	11/11/20	

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

Service Request: R2010361
Date Collected: 11/06/20
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
Lab Code: R2010361-006
Analysis Method: 9012B
Prep Method: Method

Units: mg/Kg
Basis: Dry

Analyte Name	Sample Result	Result	Matrix Spike R2010361-006MS		Duplicate Matrix Spike R2010361-006DMS		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
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)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20
Date Analyzed: 11/13/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name: EB1-Fill-0.5-2-11042020
Lab Code: R2010361-003

Units: Percent
Basis: As Received

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>MRL</u>	<u>MDL</u>	<u>Sample Result</u>	<u>Duplicate Sample R2010361-003DUP Result</u>	<u>Average</u>	<u>RPD</u>	<u>RPD Limit</u>
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.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

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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



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Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

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/analyte is offered by that state.



Case Narrative

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Chain of Custody

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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

PFAS
PFC/537M

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample		Date Received	Send To	
				Date	Time			
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 <input checked="" type="checkbox"/> STANDARD	Report Requirements _____ I. Results Only <input checked="" type="checkbox"/> II. Results + QC Summaries _____ III. Results + QC and Calibration Summaries <input checked="" type="checkbox"/> IV. Data Validation Report with Raw Data PQL/MDL/J <u> Y </u> EDD <u> Y </u>	Invoice Information <hr/> PO# 58R2010361 <hr/> Bill to	
	Requested FAX Date: _____			
	Requested Report Date: <u>11/25/20</u>			

Relinquished By: *[Signature]* 11/12/2020 12:10

Received By: *[Signature]* ALS 11/13/20 1030

Airbill Number: _____

PM NH

Cooler Receipt and Preservation Form

Client ALS Rochester Service Request K20 D2010.361
Received: 11/13/20 Opened: 11/13/20 By: [Signature] Unloaded: 11/13/20 By: [Signature]

- 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
<u>N/A</u>	<u>6.5</u>	<u>Pro2</u>	<u>[Circled]</u>	<u>X</u>	<u>Yes</u>	<u>173024333808</u>	

- 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

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Sample Results

ALS Environmental—Kelso Laboratory
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Organic Compounds by HPLC/MS/MS

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/03/20 09:45
Date Received: 11/03/20 17:00

Sample Name: WGB-8-2-4-11032020
Lab Code: R2010361-001

Units: ng/g
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 (PFASs)							
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 (PFTTrDA)	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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/03/20 09:45
Date Received: 11/03/20 17:00

Sample Name: WGB-8-2-4-11032020
Lab Code: R2010361-001

Units: ng/g
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)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30

Sample Name: EB1-Native-10-12-11042020
Lab Code: R2010361-002

Units: ng/g
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 (PFTTrDA)	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	

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Analytical Report

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

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30

Sample Name: EB1-Native-10-12-11042020
Lab Code: R2010361-002

Units: ng/g
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)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30

Sample Name: EB1-Fill-0.5-2-11042020
Lab Code: R2010361-003

Units: ng/g
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 (PFTTrDA)	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	

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Analytical Report

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

Service Request: R2010361
Date Collected: 11/04/20
Date Received: 11/04/20 17:30

Sample Name: EB1-Fill-0.5-2-11042020
Lab Code: R2010361-003

Units: ng/g
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	

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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 09:15
Date Received: 11/06/20 15:15

Sample Name: EB2-0-2-11062020
Lab Code: R2010361-004

Units: ng/g
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 (PFTTrDA)	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	

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 09:15
Date Received: 11/06/20 15:15

Sample Name: EB2-0-2-11062020
Lab Code: R2010361-004

Units: ng/g
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)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010361
Date Collected: 11/06/20 11:45
Date Received: 11/06/20 15:15

Sample Name: WAB1-0-2-11062020
Lab Code: R2010361-005

Units: ng/g
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 (PFTTrDA)	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	

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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 11:45
Date Received: 11/06/20 15:15

Sample Name: WAB1-0-2-11062020
Lab Code: R2010361-005

Units: ng/g
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	

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 12:25
Date Received: 11/06/20 15:15

Sample Name: WCB2-0-2-11062020
Lab Code: R2010361-006

Units: ng/g
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 (PFTTrDA)	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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: 11/06/20 12:25
Date Received: 11/06/20 15:15

Sample Name: WCB2-0-2-11062020
Lab Code: R2010361-006

Units: ng/g
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

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: R2010361

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	EB1-Native-10-12-11042020	EB1-Fill-0.5-2-11042020
		R2010361-001	R2010361-002	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 a pound (#) indicate the control criteria is not acceptable.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: R2010361

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	WAB1-0-2-11062020	WCB2-0-2-11062020
		R2010361-004	R2010361-005	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 a pound (#) indicate the control criteria is not acceptable.

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

Service Request: R2010361

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	Lab Control Sample
		KQ2017896-08	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 a pound (#) indicate the control criteria is not acceptable.

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: KQ2017896-08

Units: ng/g
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 (PFASs)							
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 (PFTTrDA)	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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010361
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: KQ2017896-08

Units: ng/g
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	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: R2010361
Date Analyzed: 12/01/20
Date Extracted: 11/16/20

Lab Control Sample Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Units: ng/g
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
Perfluoroheptane sulfonic acid (PFHxS)	6.81	7.30	93	75-142
Perfluoroheptanoic 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.

Semivolatile 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)
Project: Rochester REDI/1940100197

Service Request:R2010643

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
R2010643-001	WEB4-0-2-11102020	11/10/2020	1148
R2010643-002	WF2B6-2-4-11102020	11/10/2020	1400



CHAIN OF CUSTODY

ALS Laboratory
please tick →

ADELAIDE 21 Burma Road Pooraka SA 5005
Ph: 08 8359 0850 E: adelade@alsglobal.com

BRISBANE 32 Sand Street Sturtford QLD 4263
Ph: 07 3243 7227 E: samples.brisbane@alsglobal.com

GLADSTONE 4d Cavendish Drive Cankin QLD 4060
Ph: 07 7471 5000 E: gladstone@alsglobal.com

MADONAY 78 Harbour Road Mackay QLD 4740
Ph: 07 4544 0177 E: mackay@alsglobal.com

MELBOURNE 2-4 Wessell Road Spring Lake VIC 3171
Ph: 03 8343 9000 E: samples.melbourne@alsglobal.com

MUDGEE 27 Sydney Road Mudgee NSW 2850
Ph: 02 6373 6735 E: mudgee@alsglobal.com

NEWCASTLE 5/565 Mainland Rd Mayfield West NSW 2304
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NOOWRA 4113 Geary Place North Nowra NSW 2541
Ph: 024423 2003 E: nowra@alsglobal.com

PERTH 10 Hod Way, Malaga WA 6060
Ph: 08 9209 7855 E: samples.perth@alsglobal.com

SYDNEY 277-280 Woodpark Road Smithfield NSW 2104
Ph: 02 8784 8500 E: samples.sydney@alsglobal.com

TOWNSVILLE 14-15 Duxie Court Baffle QLD 4818
Ph: 07 4766 0000 E: townsville.environmental@alsglobal.com

WOLLONGONG 99 Kerry Street Wollongong NSW 2500
Ph: 02 4275 3120 E: portsmouth@alsglobal.com

CLIENT: Ramboll	TURNAROUND REQUIREMENTS: <input checked="" type="checkbox"/> 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) <input type="checkbox"/> 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:		Random Sample Temperature on Receipt:	
PROJECT MANAGER: Deb Wright/Rick Duff	CONTACT PH: 315-546-4541	Other comment:	
SAMPLER: Veronica Davies	SAMPLER MOBILE: 856 470 0012	RECEIVED BY: <i>[Signature]</i>	RECEIVED BY:
COC emailed to ALS? (NO)	EDD FORMAT (or default):	DATE/TIME: 11/10/2020	DATE/TIME:
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 1630	
Email Invoice to (will default to PM if no other addresses are listed): Accounts.payableUS@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 codes below)	(refer to)	TOTAL CONTAINERS	TCLP SV 8270D, Pest 8081, Herb 8161, Metals 8010C	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 8010B, HG 7471A, CN 8010B	PFAS 637.1	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	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	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



Cooler Receipt and Preservation Check Form

R2010643

5

O'Brien & Gere Engineers, Incorporated
Rochester RED1



Project/Client Ramboll Folder Number _____

Cooler received on 11/10/2020 by: [Signature] COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	Y <u>N</u>
2	Custody papers properly completed (ink, signed)?	<u>Y</u> N
3	Did all bottles arrive in good condition (unbroken)?	<u>Y</u> N
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	<u>Y</u> N

5a	Perchlorate samples have required headspace?	Y N <u>NA</u>
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y N <u>NA</u>
6	Where did the bottles originate?	<u>ALS/ROC</u> CLIENT
7	Soil VOA received as: Bulk Encore <u>5035set</u>	NA

8. Temperature Readings Date: 11/10/2020 Time: 1635 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>5.0</u>						
Within 0-6°C?	<u>Y</u> 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 [Signature] on 11/10/2020 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: [Signature]

- 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
- 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?		Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
			Yes	No						
≥12		NaOH								
<2		HNO ₃								
<2		H ₂ SO 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 ₂ S ₂ O ₃ (625, 608, CN), ascorbic (phenol).					
		Na ₂ S ₂ O 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:

Rec'd 5035 kits labels completely blank.

HPROD	BULK
HTR	FLDT
<u>SUB</u>	HGFB
ALS	LL3541

Labels secondary reviewed by: [Signature]
PC Secondary Review: [Signature] 11/13/20 *significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter



Miscellaneous Forms

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REPORT QUALIFIERS AND DEFINITIONS

- | | |
|---|--|
| <p>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.</p> <p>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/Aroclors).</p> <p>B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p>E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p>E Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p>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.</p> <p>* Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p>H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p># Spike was diluted out.</p> | <p>+ Correlation coefficient for MSA is <0.995.</p> <p>N Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p>N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p>S Concentration has been determined using Method of Standard Additions (MSA).</p> <p>W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.</p> <p>P Concentration >40% difference between the two GC columns.</p> <p>C Confirmed by GC/MS</p> <p>Q DoD reports: indicates a pesticide/Aroclor is not confirmed ($\times 100\%$ Difference between two GC columns).</p> <p>X See Case Narrative for discussion.</p> <p>MRL Method Reporting Limit. Also known as:</p> <p>LOQ Limit of Quantitation (LOQ)
The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p>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).</p> <p>LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p>ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|



Rochester Lab ID # for State Certifications¹

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 laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory 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)
Project: Rochester REDI/1940100197

Service Request: R2010643

Non-Certified Analytes

Certifying Agency: New York Department of Health

Method	Matrix	Analyte
ALS SOP	Soil	Total Solids

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

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

Service Request: R2010643

Sample Name: WEB4-0-2-11102020
Lab Code: R2010643-001
Sample Matrix: Soil

Date Collected: 11/10/20
Date Received: 11/10/20

Analysis Method

8082A
9012B
9045D
ALS SOP

Extracted/Digested By

KSERCU
GNITAJOUPPI

Analyzed By

BALLGEIER
GNITAJOUPPI
STALARICO
KAWONG

Sample Name: WF2B6-2-4-11102020
Lab Code: R2010643-002
Sample Matrix: Soil

Date Collected: 11/10/20
Date Received: 11/10/20

Analysis Method

8082A
9012B
9045D
ALS SOP

Extracted/Digested By

KSERCU
GNITAJOUPPI

Analyzed By

BALLGEIER
GNITAJOUPPI
STALARICO
KAWONG



INORGANIC PREPARATION METHODS

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

Water/Liquid Matrix

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

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) 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

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Semivolatile Organic Compounds by GC

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010643
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30

Sample Name: WEB4-0-2-11102020
Lab Code: R2010643-001

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010643
Date Collected: 11/10/20 14:00
Date Received: 11/10/20 16:30

Sample Name: WF2B6-2-4-11102020
Lab Code: R2010643-002

Units: ug/Kg
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	



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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: WEB4-0-2-11102020
Lab Code: R2010643-001

Service Request: R2010643
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30
Basis: Dry

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Cyanide, Total	9012B	1.63	mg/Kg	0.29	1	11/19/20 11:17	11/17/20	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: WEB4-0-2-11102020
Lab Code: R2010643-001

Service Request: R2010643
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30
Basis: As Received

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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: WF2B6-2-4-11102020
Lab Code: R2010643-002

Service Request: R2010643
Date Collected: 11/10/20 14:00
Date Received: 11/10/20 16:30
Basis: Dry

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Cyanide, Total	9012B	2.08	mg/Kg	0.30	1	11/19/20 11:18	11/17/20	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: WF2B6-2-4-11102020
Lab Code: R2010643-002

Service Request: R2010643
Date Collected: 11/10/20 14:00
Date Received: 11/10/20 16:30
Basis: As Received

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

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QA/QC Report

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

Service Request: R2010643

SURROGATE RECOVERY SUMMARY
Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Extraction Method: EPA 3541

Sample Name	Lab Code	Decachlorobiphenyl	Tetrachloro-m-xylene
		22-128	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

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010643
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2013972-01

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Analyte Name	Lab Control Sample				Duplicate Lab Control Sample					
	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



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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: Method Blank
Lab Code: R2010643-MB

Service Request: R2010643
Date Collected: NA
Date Received: NA
Basis: Dry

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
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)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010643
Date Collected: 11/10/20
Date Received: 11/10/20
Date Analyzed: 11/12/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name: WEB4-0-2-11102020
Lab Code: R2010643-001

Units: pH Units
Basis: As Received

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample	Average	RPD	RPD Limit
				R2010643-001DUP Result			
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)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010643
Date Collected: 11/10/20
Date Received: 11/10/20
Date Analyzed: 11/21/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name: WF2B6-2-4-11102020
Lab Code: R2010643-002

Units: Percent
Basis: As Received

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>MRL</u>	<u>Sample Result</u>	<u>Duplicate Sample R2010643-002DUP Result</u>	<u>Average</u>	<u>RPD</u>	<u>RPD Limit</u>
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.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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
1565 Jefferson Road
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.

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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

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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 performed 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

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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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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
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Ms. Sarah S Leung
Project Coordinator

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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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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	

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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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
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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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
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Ms. Sarah S Leung
Project Coordinator

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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.				

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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

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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

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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

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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		

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QUALITY CONTROL DATA

Workorder: 3140796 AER529|R2010643

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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

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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

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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

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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

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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

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Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

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

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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

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 Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

ALS Environmental Chain of Custody

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



Project Number: R2010643
 Project Manager: Janice Jaeger
 QAP: LAB QAP

Lab Code	Sample ID	# of Cont.	Matrix	Sample		Lab ID	Test Results								
				Date	Time		As TCLP 6010C	As TCLP 6010C	Ba TCLP 6010C	Ca TCLP 6010C	CN Reaci 9014	Cr TCLP 6010C	Flash 1010A Modifi	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

20309

Special Instructions/Comments <p style="font-size: 2em; font-family: cursive;">nysodec reguis v4 total</p>	Turnaround Requirements RUSH (Surcharges Apply) PLEASE CIRCLE WORK DAYS 1 2 3 4 5 <input checked="" type="checkbox"/> STANDARD Requested FAX Date: _____ Requested Report Date: 11/27/20	Report Requirements I. Results Only _____ <input checked="" type="checkbox"/> II. Results + QC Summaries III. Results + QC and Calibration Summaries _____ <input checked="" type="checkbox"/> IV. Data Validation Report with Raw Data PQL/MDL/1 <u>N</u> EDD <u>Y</u>	Invoice Information PO# 58R2010643 Bill to _____
---	--	---	--

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

Relinquished By: Janice Jaeger 11/20/20
 Received By: Felix
 Airbill Number: _____
 SEC 11/13/20 0850
 11/13/20 0850

R2010643-001	WEB4-0-2-11102020			Soil	11/10/20	1148	Middletown ALS	Pb TCLP 6010C	X	X
R2010643-002	WF2B6-2-4-11102020			Soil	11/10/20	1400	Middletown ALS	Pb TCLP 6010C	X	X
								Pest OC TCLP 8081B	X	X
								Sr TCLP 6010C	X	X
								Sulfide React 9034 Modified	X	X
								SVO TCLP 8270D	X	X
								TCLP ZHB EPA 1311	X	X
								TCLP EPA 1311	X	X
								VOC TCLP 8260C	X	X

R2010643

Ship To: Middletown ALS
ALS Environmental - Middletown
301 Fulling Mill Rd.
Middletown, PA 17057

PC SMO 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 | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| Tracking number: <u>1730 2433 3852</u> | | | |
| 2. Are Custody Seals on shipping containers intact?..... | <input checked="" type="radio"/> NONE | <input type="radio"/> YES | <input type="radio"/> NO |
| 3. Are Custody Seals on sample containers intact?..... | <input checked="" type="radio"/> NONE | <input type="radio"/> YES | <input type="radio"/> NO |
| 4. Is there a COC (Chain-of-Custody) present?..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 5. Are the COC and bottle labels complete, legible and in agreement?..... | | <input type="radio"/> YES | <input checked="" type="radio"/> NO |
| 5a. Does the COC contain sample locations?..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 5b. Does the COC contain date and time of sample collection for all samples?..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 5c. Does the COC contain sample collectors name?..... | | <input type="radio"/> YES | <input checked="" type="radio"/> NO |
| 5d. Does the COC note the type(s) of preservation for all bottles?..... | | <input type="radio"/> YES | <input checked="" type="radio"/> NO |
| 5e. Does the COC note the number of bottles submitted for each sample?..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 5f. Does the COC note the type of sample, composite or grab?..... | | <input type="radio"/> YES | <input checked="" type="radio"/> NO |
| 5g. Does the COC note the matrix of the sample(s)?..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 6. Are all aqueous samples requiring preservation preserved correctly? ¹ | N/A | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 8. Are all samples within holding times for the requested analyses?..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?..... | <input checked="" type="radio"/> N/A | <input type="radio"/> YES | <input type="radio"/> NO |
| 11. Were the samples received on ice?..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 12. Were sample temperatures measured at 0.0-6.0°C..... | | <input checked="" type="radio"/> YES | <input type="radio"/> NO |
| 13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below..... | | <input type="radio"/> YES | <input checked="" type="radio"/> NO |
| 13a. Are the samples required for SDWA compliance reporting?..... | <input checked="" type="radio"/> N/A | <input type="radio"/> YES | <input type="radio"/> NO |
| 13b. Did the client provide a SDWA PWS ID#?..... | <input checked="" type="radio"/> N/A | <input type="radio"/> YES | <input type="radio"/> NO |
| 13c. Are all aqueous unpreserved SDWA samples pH 5-9?..... | <input checked="" type="radio"/> N/A | <input type="radio"/> YES | <input type="radio"/> NO |
| 13d. Did the client provide the SDWA sample location ID/Description?..... | <input checked="" type="radio"/> N/A | <input type="radio"/> YES | <input type="radio"/> NO |
| 13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?..... | <input checked="" type="radio"/> N/A | <input type="radio"/> YES | <input type="radio"/> NO |

Cooler #: _____
 Temperature (°C): 20
 Thermometer ID: 309
 Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

¹Final 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



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



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 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.

Semivolatile 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

A handwritten signature in black ink, appearing to read "Samanta", is written over a horizontal line.

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

A handwritten signature in black ink, appearing to read "Samanta", is written over a horizontal line.

Approved by _____

Date 12/24/2020



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.

A handwritten signature in black ink, appearing to read 'Samantha', is written over a horizontal line.

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)
Project: Rochester REDI/1940100197

Service Request:R2010644

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
R2010644-001	WEB4-0-2-11102020	11/10/2020	1148
R2010644-002	WF2B6-2-4-11102020	11/10/2020	1400



CHAIN OF CUSTODY

ALS Laboratory
please tick →

ADLADELAIDE 21 Burma Road Pueraka SA 5095
Ph: 08 8356 0800 E: adelaide@alsglobal.com
BRISBANE 37 Strand Street Sturford QLD 4063
Ph: 07 3243 7227 E: samples.brisbane@alsglobal.com
GLADSTONE 4d Ceflonuridan Drive Centon QLD 4680
Ph: 07 7471 5600 E: gladstone@alsglobal.com

MACKAY 7th Harbour Road Mackay QLD 4740
Ph: 07 4944 0177 E: mackay@alsglobal.com

MELBOURNE 2-4 Westall Road Springvale VIC 3171
Ph: 03 8549 0600 E: samples.melbourne@alsglobal.com

MUDGEEE 27 Sydney Road Mudgee NSW 2850
Ph: 02 6372 6736 E: mudgee@alsglobal.com

NEWCASTLE 5/660 Neiland Rd Mayfield West NSW 2304
Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com

NOYRA 4113 Geary Place North Nowra NSW 2541
Ph: 024423 2063 E: nowra@alsglobal.com

PERTH 110 Hood Way Kelmscott WA 6050
Ph: 08 9209 7655 E: samples.perth@alsglobal.com

SYDNEY 27/289 Woodpark Road Smithfield NSW 2164
Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

TOWNSVILLE 14-15 Deanna Court Barlo QLD 4816
Ph: 07 4706 0600 E: townsville.environmental@alsglobal.com

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

CLIENT: Ramboll	TURNAROUND REQUIREMENTS : <input checked="" type="checkbox"/> 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) <input type="checkbox"/> Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A	
PROJECT: Rochester REDI	ALS QUOTE NO.: Rochester REDI Quote	Frozen ice / frozen ice bricks present upon receipt? Yes No N/A	
ORDER NUMBER:		Random Sample Temperature on Receipt: °C	
PROJECT MANAGER: Deb Wright/Rick Duff	CONTACT PH: 315-546-4541	Other comment:	
SAMPLER: Veronica Davies	SAMPLER MOBILE: 856 470 0042	RECEIVED BY: <i>[Signature]</i>	RECEIVED BY:
COC emailed to ALS? (NO)	EDD FORMAT (or default):	DATE/TIME: 11/10/2020	DATE/TIME:
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	DATE/TIME: 11/10/2020 1630	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 codes below) (refer to	TOTAL CONTAINERS	TCLP SV 8270D, Pest 8081, Herb 8151, Metals 8010C	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 8010B, Hg 7471A, CN 9010B	PFAS 637.1	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	Terra Kit 1 (4 containers)	
	WF2B6-24-11102020	11/10/2020 14:00	S	Soil	12	^	^	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; HB = HCl preserved Speciation bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.

R2010644 **5**
O'Brien & Gere Engineers, Incorporated
Rochester RED1



Cooler Receipt and Preservation Check Form

R2010644 5
O'Brien & Gere Engineers, Incorporated
Rochester RED



Project/Client Rambell Folder Number _____

Cooler received on 11/10/2020 by: @ COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	Y <u>(N)</u>
2	Custody papers properly completed (ink, signed)?	<u>(Y)</u> N
3	Did all bottles arrive in good condition (unbroken)?	<u>(Y)</u> N
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	<u>(Y)</u> N

5a	Perchlorate samples have required headspace?	Y N <u>(NA)</u>
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y N <u>(NA)</u>
6	Where did the bottles originate?	<u>ALS/ROC</u> CLIENT
7	Soil VOA received as: Bulk Encore <u>5035set</u>	NA

8. Temperature Readings Date: 11/10/2020 Time: 1635 ID: IR#7 (R#10) From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>5.0</u>						
Within 0-6°C?	<u>(Y)</u> 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: 11/11/20 Time: 1507 by: @

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

pH	Lot of test paper	Reagent	Preserved?		Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
			Yes	No						
≥12		NaOH								
≤2		HNO ₃								
≤2		H ₂ SO 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 ₂ S ₂ O ₃ (625, 608, CN), ascorbic (phenol).					
		Na ₂ S ₂ O 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-ISR 081720-17W
Explain all Discrepancies/ Other Comments:

Rec'd 5035 kits labels completely blank.

HPROD	BULK
HTR	FLDT
<u>SUB</u>	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
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

- | | |
|---|--|
| <p>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.</p> <p>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/Aroclors).</p> <p>B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p>E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p>E Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p>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.</p> <p>* Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p>H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p># Spike was diluted out.</p> | <p>+ Correlation coefficient for MSA is <0.995.</p> <p>N Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p>N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p>S Concentration has been determined using Method of Standard Additions (MSA).</p> <p>W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.</p> <p>P Concentration >40% difference between the two GC columns.</p> <p>C Confirmed by GC/MS</p> <p>Q DoD reports: indicates a pesticide/Aroclor is not confirmed ($\times 100\%$ Difference between two GC columns).</p> <p>X See Case Narrative for discussion.</p> <p>MRL Method Reporting Limit. Also known as:</p> <p>LOQ Limit of Quantitation (LOQ)
The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p>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).</p> <p>LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p>ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|



Rochester Lab ID # for State Certifications¹

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 laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory 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)
Project: Rochester REDI/1940100197

Service Request: R2010644

Non-Certified Analytes

Certifying Agency: New York Department of Health

Method	Matrix	Analyte
ALS SOP	Soil	Total Solids

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

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

Service Request: R2010644

Sample Name: WEB4-0-2-11102020
Lab Code: R2010644-001
Sample Matrix: Soil

Date Collected: 11/10/20
Date Received: 11/10/20

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
Lab Code: R2010644-001.R01
Sample Matrix: Soil

Date Collected: 11/10/20
Date Received: 11/10/20

Analysis Method	Extracted/Digested By	Analyzed By
8081B	KSERCU	BALLGEIER
8270D	KSERCU	JMISIUREWICZ

Sample Name: WEB4-0-2-11102020
Lab Code: R2010644-001.R02
Sample Matrix: Soil

Date Collected: 11/10/20
Date Received: 11/10/20

Analysis Method	Extracted/Digested By	Analyzed By
8270D	KSERCU	JMISIUREWICZ

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

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

Service Request: R2010644

Sample Name: WF2B6-2-4-11102020
Lab Code: R2010644-002
Sample Matrix: Soil

Date Collected: 11/10/20
Date Received: 11/10/20

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
Lab Code: R2010644-002.R01
Sample Matrix: Soil

Date Collected: 11/10/20
Date Received: 11/10/20

Analysis Method	Extracted/Digested By	Analyzed By
8081B	KSERCU	BALLGEIER
8260C		FNAEGLER



INORGANIC PREPARATION METHODS

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

Water/Liquid Matrix

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

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) 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
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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

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30

Sample Name: WEB4-0-2-11102020
Lab Code: R2010644-001

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30

Sample Name: WEB4-0-2-11102020
Lab Code: R2010644-001

Units: ug/Kg
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			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 14:00
Date Received: 11/10/20 16:30

Sample Name: WF2B6-2-4-11102020
Lab Code: R2010644-002

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 14:00
Date Received: 11/10/20 16:30

Sample Name: WF2B6-2-4-11102020
Lab Code: R2010644-002

Units: ug/Kg
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			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 14:00
Date Received: 11/10/20 16:30

Sample Name: WF2B6-2-4-11102020
Lab Code: R2010644-002

Units: ug/Kg
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	

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Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 14:00
Date Received: 11/10/20 16:30

Sample Name: WF2B6-2-4-11102020
Lab Code: R2010644-002

Units: ug/Kg
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
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Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30

Sample Name: WEB4-0-2-11102020
Lab Code: R2010644-001

Units: ug/Kg
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	

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Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30

Sample Name: WEB4-0-2-11102020
Lab Code: R2010644-001

Units: ug/Kg
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			

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30

Sample Name: WEB4-0-2-11102020
Lab Code: R2010644-001

Units: ug/Kg
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	

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30

Sample Name: WEB4-0-2-11102020
Lab Code: R2010644-001

Units: ug/Kg
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			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30

Sample Name: WEB4-0-2-11102020
Lab Code: R2010644-001

Units: ug/Kg
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	

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30

Sample Name: WEB4-0-2-11102020
Lab Code: R2010644-001

Units: ug/Kg
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			

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 14:00
Date Received: 11/10/20 16:30

Sample Name: WF2B6-2-4-11102020
Lab Code: R2010644-002

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 14:00
Date Received: 11/10/20 16:30

Sample Name: WF2B6-2-4-11102020
Lab Code: R2010644-002

Units: ug/Kg
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

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30

Sample Name: WEB4-0-2-11102020
Lab Code: R2010644-001

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: WEB4-0-2-11102020
Lab Code: R2010644-001

Service Request: R2010644
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30
Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30

Sample Name: WEB4-0-2-11102020
Lab Code: R2010644-001

Units: ug/Kg
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	*

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Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30

Sample Name: WEB4-0-2-11102020
Lab Code: R2010644-001

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 14:00
Date Received: 11/10/20 16:30

Sample Name: WF2B6-2-4-11102020
Lab Code: R2010644-002

Units: ug/Kg
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	

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Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 14:00
Date Received: 11/10/20 16:30

Sample Name: WF2B6-2-4-11102020
Lab Code: R2010644-002

Units: ug/Kg
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	

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 14:00
Date Received: 11/10/20 16:30

Sample Name: WF2B6-2-4-11102020
Lab Code: R2010644-002

Units: ug/Kg
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	*

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Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 14:00
Date Received: 11/10/20 16:30

Sample Name: WF2B6-2-4-11102020
Lab Code: R2010644-002

Units: ug/Kg
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	

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Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30

Sample Name: WEB4-0-2-11102020
Lab Code: R2010644-001

Units: ug/Kg
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	

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Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 14:00
Date Received: 11/10/20 16:30

Sample Name: WF2B6-2-4-11102020
Lab Code: R2010644-002

Units: ug/Kg
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

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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
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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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ALS Group USA, Corp.
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Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: WEB4-0-2-11102020
Lab Code: R2010644-001

Service Request: R2010644
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30
Basis: Dry

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Cyanide, Total	9012B	3.47	mg/Kg	0.29	0.17	1	11/19/20 11:19	11/17/20	

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Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: WEB4-0-2-11102020
Lab Code: R2010644-001

Service Request: R2010644
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30
Basis: As Received

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Total Solids	ALS SOP	86.3	Percent	-	-	1	11/21/20 05:15	NA	

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Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: WF2B6-2-4-11102020
Lab Code: R2010644-002

Service Request: R2010644
Date Collected: 11/10/20 14:00
Date Received: 11/10/20 16:30
Basis: Dry

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Cyanide, Total	9012B	1.74	mg/Kg	0.32	0.19	1	11/19/20 11:19	11/17/20	

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Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: WF2B6-2-4-11102020
Lab Code: R2010644-002

Service Request: R2010644
Date Collected: 11/10/20 14:00
Date Received: 11/10/20 16:30
Basis: As Received

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Total Solids	ALS SOP	83.2	Percent	-	-	1	11/21/20 05:15	NA	



QC Summary Forms

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Volatile Organic Compounds by GC/MS

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QA/QC Report

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

Service Request: R2010644

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: EPA 5035A

Sample Name	Lab Code	4-Bromofluorobenzene	Dibromofluoromethane	Toluene-d8
		31-154	63-138	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

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Analytical Report

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

Service Request: R2010644
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2014023-05

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010644
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2014023-05

Units: ug/Kg
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

Analyte Name	Lab Control Sample RQ2014023-03				Duplicate Lab Control Sample RQ2014023-04				RPD	RPD Limit
	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
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

ALS Group USA, Corp.
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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

Analyte Name	Lab Control Sample RQ2014023-03				Duplicate Lab Control Sample RQ2014023-04					
	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)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010644

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	2-Fluorobiphenyl	2-Fluorophenol
		19-107	10-115	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)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010644

SURROGATE RECOVERY SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3541

Sample Name	Lab Code	Nitrobenzene-d5	Phenol-d6	Terphenyl-d14
		10-130	17-135	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

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010644
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2013971-01

Units: ug/Kg
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	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010644
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2013971-01

Units: ug/Kg
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			

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: 11/25/20

Duplicate Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis:Dry

Analyte Name	Lab Control Sample RQ2013971-02				Duplicate Lab Control Sample RQ2013971-03				RPD	RPD Limit
	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
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

ALS Group USA, Corp.
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QA/QC Report

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

Analyte Name	Lab Control Sample RQ2013971-02				Duplicate Lab Control Sample RQ2013971-03				RPD	RPD Limit
	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
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

ALS Group USA, Corp.
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QA/QC Report

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

Analyte Name	Lab Control Sample RQ2013971-02				Duplicate Lab Control Sample RQ2013971-03				RPD	RPD Limit
	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
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)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010644

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Extraction Method: EPA 3541

Sample Name	Lab Code	Decachlorobiphenyl	Tetrachloro-m-xylene
		10-145	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)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010644
Date Collected: 11/10/20
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
Lab Code: R2010644-001
Analysis Method: 8081B
Prep Method: EPA 3541

Units: ug/Kg
Basis: Dry

Analyte Name	Sample		Matrix Spike		Duplicate Matrix Spike		% Rec	% Rec Limits	RPD	RPD Limit
	Result	Result	Amount	% Rec	Result	Amount				
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.

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010644
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2013972-01

Units: ug/Kg
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	*

ALS Group USA, Corp.
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Analytical Report

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

Service Request: R2010644
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2015080-03

Units: ug/Kg
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	

ALS Group USA, Corp.
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QA/QC Report

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

Service Request: R2010644
Date Analyzed: 11/18/20

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography

Units:ug/Kg
Basis:Dry

Analyte Name	Lab Control Sample RQ2013972-02				Duplicate Lab Control Sample RQ2013972-03					
	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

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: 12/14/20

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography

Units:ug/Kg
Basis:Dry

Analyte Name	Lab Control Sample RQ2015080-04				Duplicate Lab Control Sample RQ2015080-05				RPD	RPD Limit
	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
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

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

SURROGATE RECOVERY SUMMARY
Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Extraction Method: EPA 3541

Sample Name	Lab Code	Decachlorobiphenyl	Tetrachloro-m-xylene
		22-128	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

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 Collected: 11/10/20
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
Lab Code: R2010644-002
Analysis Method: 8082A
Prep Method: EPA 3541

Units: ug/Kg
Basis: Dry

Analyte Name	Sample Result	Result	Matrix Spike RQ2013972-08		Duplicate Matrix Spike RQ2013972-09		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
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.

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Service Request: R2010644
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2013972-01

Units: ug/Kg
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	

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: 11/24/20

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

Units:ug/Kg
Basis:Dry

Analyte Name	Lab Control Sample				Duplicate Lab Control Sample					
	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
www.alsglobal.com

METALS

-3-

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	Continuing Calibration Blank ug/L						Preparation Blank		M
		1	C	2	C	3	C	C		
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

-3-

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	Continuing Calibration Blank ug/L						Preparation Blank	C	M
		1	C	2	C	3	C			
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

-3-

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	Continuing Calibration Blank ug/L						Preparation Blank		M
		1	C	2	C	3	C	C		
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:

METALS

-7-

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

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Ramboll US Corp (Syracuse)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Sample Name: Method Blank
Lab Code: R2010644-MB

Service Request: R2010644
Date Collected: NA
Date Received: NA
Basis: Dry

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>MDL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Q</u>
Cyanide, Total	9012B	0.30 U	mg/Kg	0.30	0.17	1	11/19/20 11:13	11/17/20	

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: 11/19/20

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

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: 11/19/20

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

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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



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Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

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.pjllabs.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/analyte 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

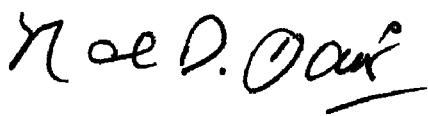
All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level II requested by the client.

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
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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 RED1
Project Number: 1940100197
Project Manager: Deborah Wright
Company: O'Brien & Gere Engineers, Incorporated
QAP: LAB QAP

PFAS
PFC/S37M

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample		Date Received	Send To	
				Date	Time			
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 <input checked="" type="checkbox"/> STANDARD	Report Requirements _____ I. Results Only <input checked="" type="checkbox"/> II. Results + QC Summaries _____ III. Results + QC and Calibration Summaries <input checked="" type="checkbox"/> IV. Data Validation Report with Raw Data PQL/MDL/J <u> Y </u> EDD <u> Y </u>	Invoice Information PO# 58R2010644 Bill to
	Requested FAX Date: _____		
	Requested Report Date: <u>11/27/20</u>		

Relinquished By: *[Signature]* 11/12/2020 / 1210

Received By: *[Signature]* ALS (KELSO) 11/13/20 1030 Airbill Number: _____

PM MH

Cooler Receipt and Preservation Form

Client ALS Rochester Service Request K20 122010644
Received: 11/13/20 Opened: 11/13/20 By: [Signature] Unloaded: 11/13/20 By: [Signature]

- 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? NA 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
<u>N/A</u>	<u>6.5</u>	<u>Flou</u>	<u>[Signature]</u>	<u>X</u>	<u>Yes</u>	<u>173024333808</u>	

- 6. Packing material: Inserts Paggies 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)
Project: Rochester REDI/1940100197
Sample Matrix: Soil
Analysis Method: 160.3 Modified

Service Request: R2010644
Date Collected: 11/10/20
Date Received: 11/10/20
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	

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QA/QC Report

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

Service Request: R2010644
Date Collected: 11/10/20
Date Received: 11/10/20
Date Analyzed: 11/19/20

Replicate Sample Summary

Inorganic Parameters

Sample Name: WF2B6-2-4-11102020
Lab Code: R2010644-002

Units: Percent
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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Sample Results

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Organic Compounds by HPLC/MS/MS

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Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30

Sample Name: WEB4-0-2-11102020
Lab Code: R2010644-001

Units: ng/g
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 (PFASs)							
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 (PFTTrDA)	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	

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Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 11:48
Date Received: 11/10/20 16:30

Sample Name: WEB4-0-2-11102020
Lab Code: R2010644-001

Units: ng/g
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)
Project: Rochester REDI/1940100197
Sample Matrix: Soil

Service Request: R2010644
Date Collected: 11/10/20 14:00
Date Received: 11/10/20 16:30

Sample Name: WF2B6-2-4-11102020
Lab Code: R2010644-002

Units: ng/g
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 (PFASs)							
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 (PFTTrDA)	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	

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Analytical Report

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

Service Request: R2010644
Date Collected: 11/10/20 14:00
Date Received: 11/10/20 16:30

Sample Name: WF2B6-2-4-11102020
Lab Code: R2010644-002

Units: ng/g
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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QA/QC Report

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

Service Request: R2010644

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	WF2B6-2-4-11102020	Method Blank
		R2010644-001	R2010644-002	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 a pound (#) indicate the control criteria is not acceptable.

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

Service Request: R2010644

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	Duplicate Lab Control
		KQ2018437-01	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 a pound (#) indicate the control criteria is not acceptable.

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Analytical Report

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

Service Request: R2010644
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: KQ2018437-03

Units: ng/g
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 (PFASs)							
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 (PFTTrDA)	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	

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Analytical Report

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

Service Request: R2010644
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: KQ2018437-03

Units: ng/g
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	

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QA/QC Report

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

Service Request: R2010644
Date Analyzed: 11/22/20
Date Extracted: 11/20/20

Duplicate Lab Control Sample Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Units: ng/g
Basis: Dry
Analysis Lot: 704525

Analyte Name	Lab Control Sample KQ2018437-01			Duplicate Lab Control Sample KQ2018437-02			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
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

PROJECT: Genesee River SITE NAME: Genesee River West DATE STARTED: 11/6/2020
CLIENT: NYS REDI SITE LOC.: Rochester, NY DATE COMPLETED: 11/6/2020
JOB #: 16900 BORING LOC.: WAB-1 FINAL STATIC WL: 6.2'

DRILLING CONT.: CME DRILLING METHOD: HSA55 NORTHING: -
FOREMAN: BEAU Fletcher HAMMER / FALL: Auto / 30" EASTING: -
RIG TYPE: CME-550x SAMPLER TYPE: split spoon ELEVATION: -
PURPOSE: SAMPLER DIAMETER: 2" DATUM: -

31" Spoon

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	21	4	18	(Fill) Brown / silt cmf sand cmf gravel organic matter moist		0	
				7					
				11					
				16					
2	2	4	22	16	34	Fill, brown / black cinders cmf sand (moist)		0	
				20					
				14					
				18					
3	4	6	20	8	8	grey / dark grey / cmf sand and cmf gravel moist, loose		0	
				6					
				2					
				2					
3	6	8	12	8	11	grey / silt and cmf sand trace organic matter saturated, stiff		0	
				6					
				5					
				3					
4	8	10	12	1	3	similar soil (saturated soft)		0	
				1					
				2					
				2					

NOTES: _____

PROJECT: Genesee River

SITE NAME: Genesee River West

DATE STARTED: 11/16/2020

CLIENT: NYS REDI

SITE LOC.: Rochester NY

DATE COMPLETED: 11/16/2020

JOB #: 16900

BORING LOC.: WCB-2

FINAL STATIC WL: 5.2'

DRILLING CONT.: CME

DRILLING METHOD: HSA55

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	2	23	3	11	3" spoon (fill) cmf sand, cmf gravel cinders organic matter		0	
				6					
				5					
				0					
2	2	4	19	3	6	possible fill brown silt (moist med stiff)		0	
				3					
				3					
				2					
3	4	6	18	1	3	gray silt trace cmf gravel (wet soft)		0	
				1					
				2					
				2					
4	6	8	18	WH	6	gravel silt trace cmf gravel wet, med stiff		0	
				2					
				4					
				3					
5	8	10	19	WH	4	gray / silt trace cmf gravel, trace organic matter (moist, loose)		0	
				2					
				2					
				2					

NOTES: _____

PAGE: 1 of _____

PROJECT: Genesee River

SITE NAME: Genesee River West

DATE STARTED: 11/10/2020

CLIENT: NYS REDI

SITE LOC.: Rochester NY

DATE COMPLETED: 10/10/2020

JOB #: 16900

BORING LOC.: WDB-3

FINAL STATIC WL: nowater

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)	
1A	0	0.5	H	2 4 4	8	Topsoil, organic matter moist		0	
1B	0.5	2		5		fill / concrete cmt gravel cmt sand silt (moist)		0	
2	2	4	15	4 3 3 4	6	Possible fill brown / silt trace organic matter (moist med stiff)		0	
3	4	6	15	4 3 3 4	6	Possible fill brown / grey / silt trace cmt gravel looks reworked (moist med stiff)		0	
4	6	8	16	4 3 3 4	6	grey silt and clay moist med stiff		0	
5	8	10	16	3 3 3 3	6	gray silt and clay (moist medium stiff)		0	

NOTES:

PROJECT: Genesee River
CLIENT: NYS REDI
JOB #: 16900

SITE NAME: Genesee River West
SITE LOC.: Rochester NY
BORING LOC.: WEB4

DATE STARTED: 11/10/2020
DATE COMPLETED: 11/10/2020
FINAL STATIC WL: 115 water

DRILLING CONT.: CME
FOREMAN: Ben Fletcher
RIG TYPE: CME S50X
PURPOSE: _____

DRILLING METHOD: HSS
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	18	3	19	3" spoon / (miso fill) silt brick, organic matter cmt gravel (moist)		0.1	
				12					
				7					
				9					
2	2	4	19	3	10	poss fill, brown grey silt, looks reworked, moist stiff		0	
				5					
				5					
				7					
3	4	5	10	2	12	poss fill, brown grey silt moist stiff		0	
				5					
				7					
3B	5	6		6		poss fill, grey cmt sand (moist med compact)		0	
4	6	8	23	10	22	grey / cmt sand (met med compact)		0	
				12					
				10					
				7					
5	8	10	22	3	8	grey / cmt sand (wet loose)		0	
				5					
				3					
				7					

NOTES: _____

PROJECT: Genesee River SITE NAME: Genesee River West DATE STARTED: 11/10/2020
CLIENT: NYS REDI SITE LOC.: Rochester NY DATE COMPLETED: 11/10/2020
JOB #: 16900 BORING LOC.: WF1B-4 FINAL STATIC WL: no water

DRILLING CONT.: CME DRILLING METHOD: HSA55 NORTHING: -
FOREMAN: Bray Fletcher HAMMER / FALL: Auto / 30" EASTING: -
RIG TYPE: CME 550x SAMPLER TYPE: split spoon ELEVATION: -
PURPOSE: WF1B-4 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	2	15	1	32	Topsoil organic matter, cmt gravel, silt (moist)		0	
				5					
				27					
				9					
2	2	4	14	6	9	brown / grey silt, cmt gravel, concrete (moist)		0	
				5					
				4					
				5					
3	4	6	4	7	17	brown / silt cmt sand low recovery, hit ripwrap		0	
				9					
				8					
				5					
4	6	8	9	1	12	grey / silt trace organic matter, trace cmt sand trace cmt gravel (moist stiff)		0	
				4					
				8					
				2					
5	8	10	17	7	4	grey silt trace cmt sand trace organic matter (moist) med stiff.		0	
				2					
				2					
				2					
10	10	12	24	2	4	similar soil (moist med stiff)		0	
				2					
				2					
				2					

NOTES: _____

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	1	3	similar soil (mass soft)		0	
				1					
				2					
				2					
8	14	16	18	with		grey / cmf sand trace		0	
				with		silt (wet, very loose)			
				1					
				2					
9	16	18	24	1	3	similar soil (wet, very loose)		0	
				2					
				1					
				2					
10	18	20	23	3	5	similar soil, red color in shoe part of spoon		0	
				2					
				3					
				3					

NOTES:

PROJECT: Genesee River SITE NAME: Genesee River West DATE STARTED: 11/10/2020
CLIENT: NYS REDI SITE LOC.: Rochester NY DATE COMPLETED: 11/10/2020
JOB #: 16900 BORING LOC.: WF2B-6 FINAL STATIC WL: No water

DRILLING CONT.: CME DRILLING METHOD: HSASS NORTHING: -
FOREMAN: Beau Fitchner HAMMER / FALL: Auto / 30" EASTING: -
RIG TYPE: CME550X 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)	
						Notes: First two spoons were 3" (Auger was not used @ location)			
1A	0	0.5	22	4	36	Topsoil organic matter (moist)		0	
				11					
1B	0.5	2		25		brown/black silt cmf gravel, cinders (moist)		0	
				7					
2	2	4	20	14	23	Fill, black/brown cinders silt (moist)		0	
				14					
				9					
				9					
3	4	6	22	4	11	Poss fill brown /silt moist (stiff)		0	
				5					
				6					
				4					
4	6	8	16	3	9	Brown grey silt (moist, stiff)		0	
				4					
				5					
				4					
5	8	10	18	2	5	Grey /silt little clay little organic matter (med stiff)		0	
				2					
				3					
				3					

NOTES: _____

11:15 A.M.

PROJECT: GENESSEE RIVER REDZ SITE NAME: GENESSEE RIVER WEST DATE STARTED: 11/2/2020
 CLIENT: NYS REDZ SITE LOC.: ROCHESTER NY DATE COMPLETED: 11/2/2020
 JOB #: 169000 BORING LOC.: W6R-7 FINAL STATIC WL: 11.1'

DRILLING CONT.: CME DRILLING METHOD: HSA 55 NORTHING: _____
 FOREMAN: BEAU FLETCHER HAMMER / FALL: AUTO 1 30" EASTING: _____
 RIG TYPE: CME 350x SAMPLER TYPE: SPLIT SPIN 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	0.5	2.0	12"	6	17	6" ASPHALT		0.0	
				7		FZC, BROWN RED, C&F SAND, C&F GRAVEL, SILT (MOIST)			
				6					
2	2.0	4.0	13"	3	10	Misc FZC		0.2	
				3		BLACK, GREY RED, SILT, BRICK, WOOD, CHADERS			
				7					
				6					
3	4.0	6.0	12	13	6	3A BLACK WOOD (MOIST)			
				3					
				3		7B (fill) GREY SILT, trace SAND, (MOIST, not stiff)		0.1	
				3					
4	6.0	8.0	18	3	5	GREY SILT some CLAY		0.0	
				3		trace wood material			
				2		(MOIST not stiff)			
				-2					
5	8	10	0	WY		NO RECOVERY		0.0	
				1					
				1					
6	10	12	16	2		GREY SILT some CLAY		0.0	
				1		TRACE Mt SAND, ORGANIC			
				1					
				1					

NOTES: _____

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"	WH	4	GREY/SILT LITTLE ORGANIC MATERIAL TRACE MF SAND (WET, SOFT)		0.0	
				1					
				3					
				2					
8	14	16	6"	1	5	GREY SILT TRACE CLAY ORGANIC WOOD MF SAND		0.0	
				3					
				2					
				2					
9	16	18	24"	WH	3	GREY/SILT SOME CLAY LITTLE ORGANIC MAT (MOIST)		0.0	
				WH					
				3					
				2					
10	18	20	20"	WH	WH	GREY/SILT ULTRA ORGANIC		0.0	
				WH					
				3					
11	23.5	25	18	2	5	GREY/SILT LITTLE SAND ORGANIC MAT, TRACE CLAY MF SAND (MOIST, RED STIFF)		0.0	
				2					
				3					
12	28.5	30.0	18	WH	5	SAA		0.0	
				2					
				3					
13	33.5	35	18	3	5	GREY/BROWN/SILT SOME ORGANIC MATERIAL TRACE CLAY AND MF SAND (MOIST)		0.0	
				2					
				3					
14	38.5	40		WH	4	SAA		0.0	
				1					
				3					

NOTES:

PROJECT: GENESSEE RIVER REEDS SITE NAME: GENESSEE RIVER WEST DATE STARTED: 11/2/2020
CLIENT: NTS REEDS SITE LOC.: ROCHESTER NY DATE COMPLETED: 11/2/2020
JOB #: _____ BORING LOC.: W60-7 FINAL STATIC WL: 11.1'

DRILLING CONT.: CME DRILLING METHOD: HSAS 5 NORTHING: -
FOREMAN: Brian FLETCHER HAMMER / FALL: Auto 1 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)	
15	43.5	45	12	44 44 2	2	SAA		0.0	
16	48.5	50.0	18	1 3 4	7	GREY BROWN RED. SCLT SOME ORGANIC MATERIAL TRAC OF SAND (MOIST) NEARLY STILL		0.0	
						AUGERD INTO HARDER MATERIAL @ 52.5			
17	52.5	55	18	35 20 25	45	RED / SCLT LITTLE CAT GRAVEL (MOIST + HARD) TZLL		0.0	
18	58.5	58.6	1"	100/1"	100/1"	SAA		0.0	

NOTES: _____

PROJECT: GENESSEE RIVER REDEVELOPMENT SITE NAME: GENESSEE RIVER WEST DATE STARTED: 11/21/2020
 CLIENT: NYS REDZ SITE LOC.: ROCHESTER, NY DATE COMPLETED: 11/21/2020
 JOB #: 169006 BORING LOC.: WGB-8 FINAL STATIC WL: _____

DRILLING CONT.: CHE DRILLING METHOD: HSA 55 NORTHING: _____
 FOREMAN: BEAL FLETCHER HAMMER / FALL: AV10 1 30 EASTING: _____
 RIG TYPE: CME 330X SAMPLER TYPE: SPL27 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	2	16	2	6	BROWN TOP SOIL 6", BROWN SAND 12" some CNF gravel (MO-F)		0.2	
				2					
				4					
				6					
2	2	4	15	22		Brown Gray / CNF sand (moist / loose)		0.4	
				20	33				
				11					
				13					
3	4	6	10	11	26	brown black wood and sand silt (wet)		0.1	
				20					
				6					
				6					
4	6	8	12	1	4	gray silt with trace of clay trace sand (wet)		0.1	
				2					
				2					
				2					
5	8	10	8	WH	3	gray/silt trace mf sand trace clay trace cnf gravel (saturated soft)		0.1	
				1					
				2					
				4					
6	10	12	9	1	3	gray brown silt, little organic material trace cnf sand trace clay (wet soft)		0.1	
				2					
				1					
				1					

NOTES: _____

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	2 2 1 2	3	gray silt, some clay trace organic material (wet soft)		0.1	
8	14	16	11	2 1 1 2	2	Gray brown/silt little clay little organic material trace cmf sand (wet soft)		0.1	
9	16	18	14	2 1 2 1	3	gray/silt and clay trace organic material trace cmf sand saturated, soft)		0.1	
10	18	20	23	WH WH WH	WH	gray/silt and clay trace organic material trace mf sand (wet, very soft)		0.1	
11	23.5	25	18	3 3 3	6	gray silt clay little organic material trace cmf gravel trace mf sand (wet med stiff)		0.1	
12	25	27		20" rec		shelby tube gray silt and clay, trace organic matter (moist) 20" recovery		0.1	
13	28.5	30	18	WH 3 2	5	gray silt some clay little organic material little cmf sand (moist med stiff)		0.1	
14	33.5	35	18	1 3 2	5	Gray/silt little clay little organic matter trace mf sand (moist med stiff)		0.3	

NOTES:

PROJECT: Genesee River REDI SITE NAME: Genesee River West
 CLIENT: NTS REDI SITE LOC.: Rochester NY
 JOB #: 169000 BORING LOC.: UGB-8

 DATE STARTED: 11/2/2020
 DATE COMPLETED: 11/2/2020
 FINAL STATIC WL: _____

 DRILLING CONT.: CME DRILLING METHOD: HSA-55
 FOREMAN: BEAU FLETCHER HAMMER / FALL: AC 10 / 30
 RIG TYPE: CME 950X SAMPLER TYPE: SPIT SPOON
 PURPOSE: _____ SAMPLER DIAMETER: 2 1/4"

 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)	
15	38.5	40	18	2	4	gray brown / silt material Some organics little mf sand trace clay (moist med stiff)		0.2	
16	43.5	45.0	18	1	5	gray brown silt w/ some organics, little mf sand trace clay (moist med stiff)		0.1	
17	48.5	50	18	WH	WH	Some soil (moist very soft)		0.1	
18	53.5	55	18	WH	0	gray / silt trace mf sand Trace organic mat trace clay (moist soft)		0.1	
19	58.5	60	18	2	6	gray brown / silt little organics trace mf sand trace clay (moist med stiff)		0.1	
20	63.5	65	18	3	7	similar soil (moist med stiff)		0.1	
21	68.5	70		3	6	gray brown / silt, trace organics trace mf sand trace cnp gravel, trace clay (moist, med soft)		0.1	

 NOTES: _____

 PAGE: 1 of _____

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
22	73.5	75	18	3 3 5	8	gray brown / silt little organic material, mt sand trace clay, trace conf gravel (moist, very stiff)		0.1	
23	78.5	79.7	18	3 3 5	8	similar soil (moist, very stiff)		0.1	
24	79.7	80.0	18	3 3 5	8	red / silt trace clay moist - very stiff		0.1	
25	83.5	85	18			red grey / silt trace organics, trace conf sand trace clay (moist very stiff)		0.1	
26	88.5	90	18	9 50 39		red / silt, little conf gravel trace weathered rock frags (moist hard)		0.1	

NOTES:

APPENDIX C HEALTH AND SAFETY PLAN (HASP)

**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]**

CONTENTS

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
4.3	Environmental Hazards	3
5.	Site Controls	3
6.	Protective Equipment	3
6.1	Levels of PPE	4
6.1.1	Level A (High)	4
6.1.2	Level B (High)	4
6.1.3	Level C (High)	4
6.1.4	Modified Level D (Medium)	5
6.1.5	Level D (Low)	5
6.1.6	Respiratory Protection	5
7.	Decontamination Procedures	5
7.1	Personnel	5
7.2	Equipment	5
7.3	Disposal	6
8.	Air Monitoring	6
9.	Emergency Response	6

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

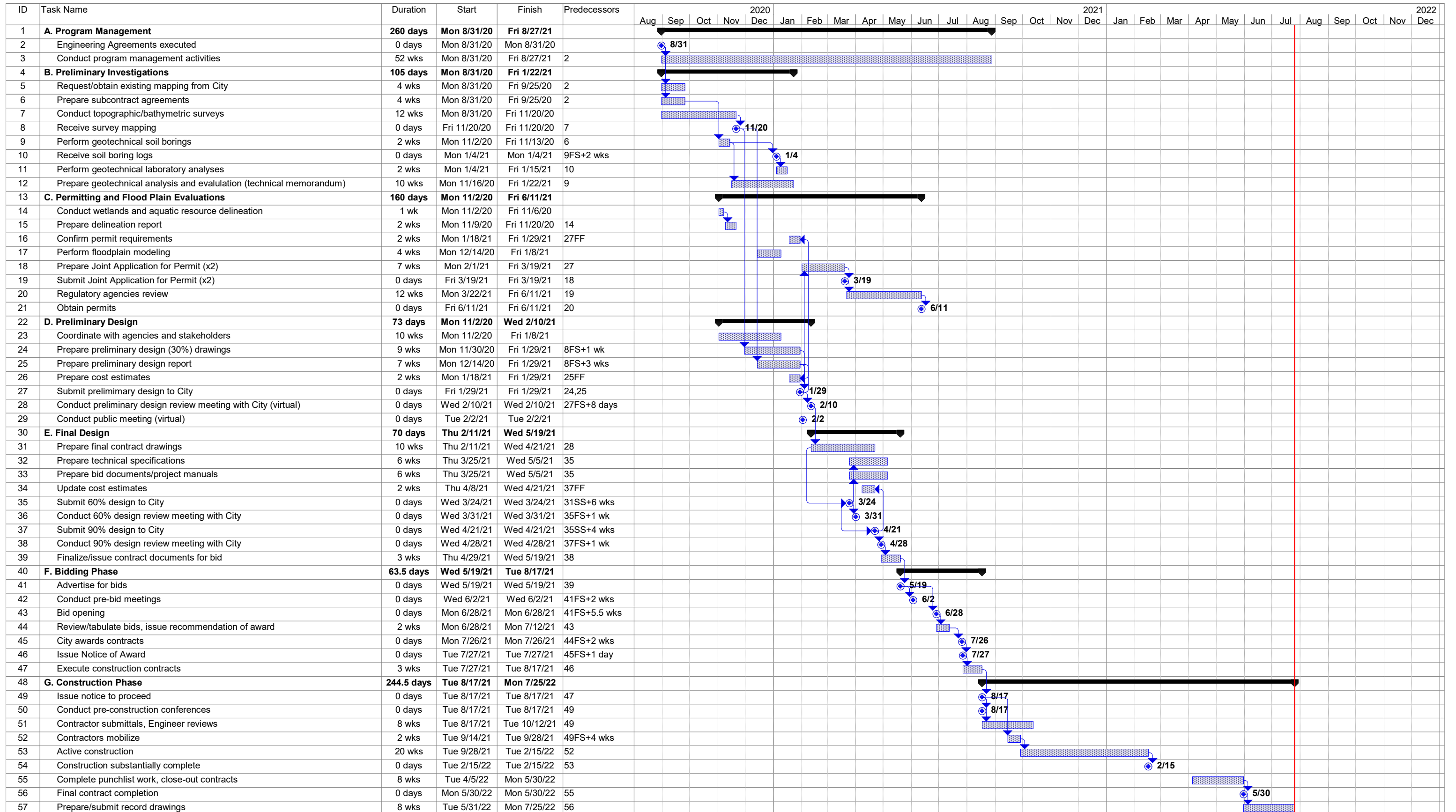
During activities that disturb petroleum-impacted soil, fill material, or groundwater, air monitoring will be conducted in order to determine airborne particulate and potential contaminant levels. This ensures that respiratory protection is adequate to protect personnel against the contaminants, and 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) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Emergency Medical Treatment - Hospital Name:	Rochester General Hospital	Number:	911
Hospital Address:	1425 Portland Ave, 14621		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 F – PROJECT SCHEDULE



APPENDIX G – COST ESTIMATE DETAIL AND SUPPORTING DOCUMENTATION

**West Side Genesee River Resiliency Improvements – MO-07 and 10
2021 Construction Cost Estimate**

CONTRACT G – BASE BID ITEMS				
Item	Quantity	Unit	Unit Price	Total
1 Item 1				
a Shoreline Protection Zones A, B and C				
Revetment Installed	750	LF	\$300	\$225,000
b Shoreline Protection Zone D				
Excavation	100	CY	\$12	\$1,200
Dispose Excess Material	100	CY	\$7	\$700
Geotextile	425	SY	\$3	\$1,275
Precast Concrete Units	148	Each	\$230	\$34,040
Backfill	186	Tons	\$27	\$5,022
Miscellaneous Drainage	1	LS	\$5,000	\$5,000
Restoration	600	SY	\$5	\$3,000
c Shoreline Protection Zone E				
Revetment Installed	360	LF	\$300	\$108,000
d Wall Improvements at Zone F-1				
Modify Boardwalk	1	LS	\$35,000	\$35,000
Concrete Wall Extension	6	CY	\$2,200	\$13,200
Stop Log Openings and Materials	1	LS	\$2,200	\$2,200
Miscellaneous	1	LS	\$15,000	\$15,000
e Wall Improvements at Zone F-2				
Mobilization and Prep Work	1	LS	\$10,000	\$10,000
Concrete Wall Extension	17	CY	\$1,500	\$25,500
Stop Log Openings and Materials	3	EA	\$2,200	\$6,600
Miscellaneous	1	LS	\$22,000	\$22,000
Restoration	1	LS	\$15,000	\$15,000
f Zone G – 504 River Street				
Sheet Pile Mobilization	1	LS	\$15,000	\$15,000
Demo Exist. Dock Remnant	1	LS	\$10,000	\$10,000
Steel Sheet Pile (15 Feet Deep)	2400	SF	\$50	\$120,000
Steel cap channel w/ welded studs	112	LF	\$177	\$19,878
Reinf. Concrete Cap	12	CY	\$1,500	\$18,000
Riprap revetment river side–Medium Stone Fill	200	Tons	\$70	\$14,000
Geotextile Underlayment	200	SY	\$3	\$600
Backfill at Boat Ramp	70	CY	\$50	\$3,500
Restoration	1	LS	\$20,000	\$20,000
g Zone G – 520 River Street – USCG Auxiliary				
Sheet Pile Mobilization	1	LS	\$15,000	\$15,000
Steel Sheet Pile (15 Feet Deep)	1680	SF	\$50	\$84,000
Steel cap channel w/ welded studs	142	LF	\$177	\$25,134
Reinf. Concrete Cap	4	CY	\$1,500	\$6,000
Stop Log Openings and Materials	3	EA	\$2,200	\$6,600
Restoration	1	LS	\$20,000	\$20,000
h Zone G – 530 River Street – MC PS				
Sheet Pile Mobilization	1	LS	\$15,000	\$15,000
Excavation	155	CY	\$8	\$1,240
Timber Piling, installed	1476	LF	\$30	\$44,280
Concrete Flood Wall w/ Grade Beam and Pile Caps	82	CY	\$1,500	\$123,000
Backfill, reuse excavated spoils, installed and compacted	94	CY	\$30	\$2,820
Riprap revetment river side–Medium Stone Fill	170	Tons	\$70	\$11,900
Concrete Wall (E-W) at N Edge Property	40	CY	\$1,500	\$60,000
Miscellaneous	1	LS	\$35,000	\$35,000
Remove/Dispose Deck	1	LS	\$20,000	\$20,000
Restoration	1	LS	\$15,000	\$15,000
i Dock Modifications				
Remove Existing Supports	1	LS	\$15,000	\$15,000
Install Piles	50	Each	\$2,000	\$100,000
Modify Docks for New Piles	50	Each	\$1,200	\$60,000
j Storm Water Control				
Manholes	1	LS	\$6,500	\$6,500
New Pump Station (504 River Street)	1	LS	\$275,000	\$275,000
Pre-Engineered PS (Charlotte PS)	1	LS	\$45,000	\$45,000
Force Main – 10-inch HDPE	120	LF	\$45	\$5,400
Force Main – 4-inch HDPE	100	LF	\$35	\$3,500
Tideflex Check Valves	2	Each	\$4,500	\$9,000
FM Discharge Protection	26	CY	\$100	\$2,600
Restoration	1	LS	\$10,000	\$10,000
2 Maintenance & Protection of Traffic	1	LS	\$15,000	\$15,000
3 Erosion & Sediment Control	1	LS	\$35,000	\$35,000
4 Mobilization/Demob	1	LS	\$65,000	\$100,000
			Subtotal	\$1,915,689
			20% Contingency	\$383,138
			ESTIMATED TOTAL CONTRACT G COST	\$2,298,827
			ROUNDED CONTRACT G COST	\$2,298,900
Work to Be Provided by City				
1 Electric Service to Pump Station	1	LS	\$10,000	\$10,000
			Subtotal	\$10,000
			20% Contingency	\$2,000

**West Side Genesee River Resiliency Improvements – MO-07 and 10
2021 Construction Cost Estimate**

			ESTIMATED TOTAL TOWN COST	\$12,000
			ROUNDED TOWN COST	\$12,000
CONTACT E – BASE BID				
1 Mobilization	1	LS	\$15,000	\$15,000
2 Item				
Dock Modifications	1	LS	\$25,000	\$25,000
SW Pump Station Service and Panels	1	LS	\$125,000	\$125,000
3 Allowance	1	LS	\$10,000	\$10,000
			Subtotal	\$175,000
			20% Contingency	\$35,000
			Allowance	\$25,000
			ESTIMATED TOTAL CONTRACT E COST	\$235,000
			ROUNDED CONTRACT E COST	\$235,000
			ESTIMATED TOTAL PROJECT COST	\$2,545,827
			ROUNDED PROJECT COST	\$2,546,000

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