de maximis, inc.

1550 Pond Road
Suite 120
Allentown, PA 18104
(610) 435-1151
FAX (610) 435-8459

April 30, 2020

VIA Electronic Mail

Kyle Forster
Division of Environmental Remediation
Remedial Bureau B
New York State DEC
625 Broadway, 12th Floor
Albany, New York, 12233-7016

Reference: **#C241089 - Review Avenue Development I Site (RAD I)**
Long Island City, Queens, New York
Period Review Report #3 – April 1, 2019 through March 31, 2020

Dear Mr. Grathwol:

Attached please find the Periodic Review Report (PRR) and IC/EC Certification Submittal for the Review Avenue Development Site I (RAD I) Site #C241089. This is the fourth PRR submitted for the Site and covers the operating period of April 2019 through March 2020. As requested, all submittals are being provided in electronic format.

Should you have any questions or comments regarding this submittal or any other aspect of this project, please do not hesitate to contact me at (610) 435-1151.

Sincerely,

de maximis, inc.

R. Craig Coslett
Project Coordinator

Attachment
CC: Patrick Foster, NYSDEC
Stephanie Selmer, New York State Department of Health
Brent O'Dell, Wood Group
Alan Dern, Review Holdings LLC

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

Site Details **Box 1**

Site No.C241089

Site Name Review Avenue Development I

Site Address: 37-30 Review Avenue Zip Code: 11101
City/Town: Long Island City
County: Queens County
Site Acreage: 2.733

Reporting Period: April 1 2019 to March 31, 2020

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

Box 2

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

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

_____ _____
Signature of Owner, Remedial Party or Designated Representative Date

Description of Institutional Controls

- The RAD I Site may only be used for restricted use as specified by the SMP;
- All ECs must be operated and maintained as specified in the SMP;
- All ECs must be inspected at a frequency and in a manner defined in the SMP.
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Queens County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the NYSDEC.
- Groundwater monitoring must be performed as defined in the SMP;
- Data and information pertinent to site management must be reported at the frequency and in a manner as defined in the SMP;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with the SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;
- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in the SMP;
- Access to the RAD I Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement.
- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 2, and any potential impacts that are identified must be monitored or mitigated.

Description of Engineering Controls

1. A cover system consisting of asphalt pavement
2. A LNAPL Recovery System – consisting of:
    a. A Vacuum Enhanced/Total Fluids (VER/TF) LNAPL recovery system
    b. A single-phase LNAPL recovery system
3. A packaged SVE, groundwater treatment, LNAPL Storage and Control system (located on the RAD II property).

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
X	

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

(a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

(b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

(c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

(d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

(e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
X	

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

_____ _____

Signature of Owner, Remedial Party or Designated Representative Date

IC CERTIFICATIONS
SITE NO. C241089

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

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

I R. Craig Coslett (print name) at 1550 Pond Road, Suite 120, Allentown, PA 18104, (print business address)

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

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

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

4/29/2020
Date

IC/EC CERTIFICATIONS

Box 7

Signature

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

I _____Brent O'Dell, P.E._____ at ___511 Congress Street, Suite 200 Portland, ME 04112,
print name print business address

am certifying as an Engineer for the _____Remedial Party_____
(Owner or Remedial Party)

4/29/2020

Signature of the Owner or Remedial Party, Rendering Certification

Stamp (Required for PE)

Date

REVIEW AVENUE DEVELOPMENT (RAD) I
QUEENS COUNTY
LONG ISLAND CITY, NEW YORK

PERIODIC REVIEW REPORT No. 4
(APRIL 1, 2019 – MARCH 31, 2020)

NYSDEC Site Number: RAD I – BCP #C241089

Prepared by:

MACTEC Engineering and Geology, P.C.
7 Southside Drive - Suite 201
Clifton Park, NY 12065

and

Wood Environment & Infrastructure Solutions, Inc.
200 American Metro Boulevard – Suite 113
Hamilton, New Jersey 08619

APRIL 2020

TABLE OF CONTENTS

LIST OF TABLES

Tables

LIST OF FIGURES

Figure

LIST OF APPENDICES

Appendix

GLOSSARY OF ACRONYMS AND ABBREVIATIONS

BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
DOT	Department of Transportation
EC	Engineering Control
EOR	Engineer of Record
FER	Final Engineering Report
IC	Institutional Control
LEL	Lower Explosive Limit
LGAC	Liquid Granular Activated Carbon
LNAPL	Light Non-Aqueous Phase Liquid
LRGTB	LNAPL Recovery and Groundwater Treatment Building
MSL	Mean Sea Level
ND	Not Detected
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	Operations and Maintenance
OM&M	Operations, Maintenance and Monitoring
PCB	Polychlorinated Biphenyl
POTW	Publicly-Owned Treatment Works
PRR	Periodic Review Report
RAD	Review Avenue Development
RAWP	Remedial Action Work Plan
RI	Remedial Investigation
ROD	Record of Decision
SCGs	Standards, Criteria Goals
SMP	Site Management Plan
SVE	Soil-Vapor Extraction
TSCA	Toxic Substances Control Act
TF	Total Fluids
UST	Underground Storage Tank
VER	Vacuum-Enhanced Recovery

EXECUTIVE SUMMARY

Cresswood Environmental Consultants, LLC retained Golder Associates, Inc. (Golder) to prepare a Remedial Action Work Plan (RAWP) to satisfy the requirements of the New York State Department of Environmental Conservation (NYSDEC) for the Review Avenue Development (RAD) I and RAD II properties located on Review Avenue in Long Island City, New York, dated February 9, 2007. The RAWP was prepared in accordance with the DER-10 Technical Guidance for Site Investigation and Remediation (DER-10) (NYSDEC, 2010) and Subpart 375.3 Brownfield Cleanup Program (BCP) Regulations (NYSDEC, 2006a) and submitted in November 2011. DMJ Associates, LLC, Review Railroad, LLC and Cresswood Environmental Consultants, LLC (collectively referred to as the Volunteer) entered into Brownfield Cleanup Agreement (BCA) #C241089 dated October 2005 with the NYSDEC to participate in the Brownfield's Cleanup Program for the RAD I. An Amendment to Substitute the current Owner of the RAD I property, Review Holdings LLC and Review Properties LLC to be the sole Volunteers under the BCA is pending with the NYSDEC

The RAD I Site and the RAD II Site are located adjacent to each other and have the same physical setting. The RAD Sites have been investigated concurrently since the early 1980's,but were entered into separate BCA and assigned different BCP numbers. A Decision Document was issued by the NYSDEC for the RAD I Site in December 2015 and a separate Final Engineering Report (FER) was provided to address the requirements of that Decision Document. The remedy selected by the NYSDEC for the RAD II Site is in the Record of Decision (ROD) issued by the NYSDEC in February 2007.

The RAD I Site is identified as Block 312 and Lot 41 on the Long Island City Tax Map and includes Preston Street, which runs from Review Avenue to the Long Island Railroad, along the property border with RAD II. To the northeast is Review Avenue and the Calvary Cemetery and to the southwest is the Long Island Railroad and the South Capasso property and the Waste Management Property. The boundaries of the RAD I Site are shown on Figure 1 and with more detail provided on Figure 2.

The RAD Sites are being remediated via LNAPL extraction. LNAPL is extracted using a combination of skimmer (product only) pumps and dual phase extraction (total fluids) pumps. LNAPL extracted by the skimmer pumps is conveyed through underground piping to a storage tank location on the RAD II Property. Liquid (water and LNAPL) extracted through dual phase extraction is conveyed through underground piping to the treatment system located on the RAD II property. Liquids are then processed through an oil water separator, bag and carbon filters to separate LNAPL from water. The collected LNAPL is pumped to a dedicated storage tank and the treated water is discharged to the sewer system. Construction of the remediation system was

deemed complete on November 15, 2015 and NYSDEC approved the start of the operation and maintenance (O&M) period on November 16, 2015.

A Site Management Plan (SMP) was prepared by MACTEC Engineering and Consulting, P.C. (MACTEC) and Amec Foster Wheeler Environment and Infrastructure, Inc. (Amec Foster Wheeler), on behalf of Cresswood Environmental Consultants, LLC and Review Ave. System, LLC, in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated February 2013, and the guidelines provided by the NYSDEC. An Environmental Easement granted to NYSDEC and recorded with the County Clerk of Queens County requires compliance with the SMP and all ECs and ICs placed on the Site. The SMP addresses the means for implementing the ICs and ECs that are required by the Environmental Easement for the RAD I Site and outlines the controls established to meet the ROD requirements. Section 3.0 summarizes the EC and IC requirements and compliance. IC/EC Certification has been bound to the front end of this report. The SMP was approved by NYSDEC on August 30, 2016.

This is the fourth Periodic Review Report (PRR) for the RAD I Property. The 1st PRR was submitted to the NYSDEC in April 2017 and resubmitted on June 10, 2017 following comments received on the initial submittal. Approval of the 1st PRR was provided by the NYSDEC in a letter dated September 8, 2017. The 2nd PRR was submitted to the NYSDEC on April 27, 2018 and approval was provided by the NYSDEC on February 28, 2019. The 3rd PRR was submitted to the NYSDEC on April 30, 2019 and approval was provided by the NYSDEC on September 11, 2019.

1.0 SITE OVERVIEW

1.1 INTRODUCTION

The RAD I Site is being remediated in accordance with the remedy selected by the NYSDEC in the Decision Document issued December 2, 2015 and the ROD for the RAD II Site, dated February 9, 2007.

Portions of the RAD I Site were remediated under an IRM. This included the removal and offsite disposal of four underground storage tanks (USTs), a concrete trench, and a sump in May 2006. RAD I is paved and contains two buildings (Building 1 and Building 2). The components of the remedy proposed in the draft Decision Document include: the preparation of an Environmental Easement and periodic submittals, which are components addressed in the SMP. The remedy selected for the RAD I Site are listed below by media:

LNAPL

The remedy for light non-aqueous phase liquid (LNAPL) beneath the RAD I Site was recovery using single-phase skimmer pumps and vacuum enhanced (VER) recovery methods at locations where higher viscosity LNAPL is present. A long-term monitoring program to monitor the effectiveness of the LNAPL recovery system was implemented.

Soil

The remedy for the soil at the RAD I Site was to re-cover excavation areas using a paving system that was consistent with existing cover and consistent with the development of the RAD I Site. The Site Management Plan identifies restoration requirements of future development activities.

Groundwater

The remedy for groundwater was the establishment of an institutional control that restricts the use of untreated groundwater beneath the RAD I Site as a source of potable water.

Soil Vapor

The results of soil vapor investigations on the RAD I Site did not identify a threat for migration of soil vapor laterally from the limits of the LNAPL beneath the RAD I Site. Building #1 is a slab on grade structure used as a mechanics shop and open warehousing. The upper levels of building #2 are used as office space with the lower level used for maintenance and warehousing. Occupancy of both buildings remains consistent with occupancy during investigations. NYSDEC and NYSDOH will be notified of occupancy changes per the conditional approval of the soil vapor investigations performed at the RAD I Site.

Listed below are the primary elements of the selected remedy:

- Operation of the LNAPL recovery system;
- Establishment of an institutional control that restricts the use of untreated groundwater beneath the RAD I Site as a source of potable water;
- The execution and recording of an Environmental Easement to restrict land use and prevent future exposure to any contamination remaining at the RAD I Site;
- Development and implementation of a SMP for long-term management of remaining contamination as required by the Environmental Easement, which includes plans for the following: (1) ECs and ICs, (2) monitoring, (3) operation and maintenance, and (4) reporting; and
- Periodic certification of the ECs and ICs listed above.

This is the fourth Periodic Review Report (PRR) for the RAD I Property. The 1st PRR was submitted to the NYSDEC in April 2017 and resubmitted on June 10, 2017 following comments received on the initial submittal. Approval of the 1st PRR was provided by the NYSDEC in a letter dated September 8, 2017. The second PRR was submitted to the NYSDEC on April 27, 2018 and approval was provided by the NYSDEC on February 28, 2019. The third PRR was submitted to the NYSDEC on April 30, 2020 and approval was provided by the NYSDEC on September 11, 2019 . This Periodic Review Report (PRR) covers the period of performance from April 1, 2019 to March 31, 2020 and includes:

- Required institutional control/engineering control (IC/EC) certification;
- Summary and documentation of site-related data to support IC/EC certification;
- A description of the LNAPL Recovery System performance; and
- Discharge monitoring data for the certification period.

1.2 SITE HISTORY AND DESCRIPTION

The RAD I Site is approximately 2.7 acres in size and located in a highly industrialized part of Long Island City, County of Queens, New York. The RAD I Site is identified as Block 312 and Lot 41 on the Long Island City Tax Map and includes Preston Street that borders the RAD II property and runs from Review Avenue to the Long Island Railroad. The address of the RAD I Site is 37–30 Review Avenue. Figure 1 presents a Site Location Map. Zoning in this area is designated as heavy manufacturing.

The RAD I Site was previously used for a variety of commercial and industrial purposes between at least 1898 and the present, including more recently, commercial vehicle and heavy equipment maintenance, office space, warehousing, and commercial parking. The RAD I Site is bounded by Review Avenue to the northeast, the Southern Line of the Long Island Railroad to the southwest, and the RAD II Site to the southeast (see Figure 2). To the northeast of Review Avenue is the Calvary Cemetery and to the southwest of the Long Island Railroad is the South Capasso property and the Waste Management Property.

During the fourth reporting period, the RAD I property went under new ownership. An application to amend the BCA to substitute the new RAD I property owner, Review Holdings LLC and Review Properties LLC as the Volunteer is currently pending before the NYSDEC. Various companies currently lease portions of the RAD I Site for office space, storage, as well as parking of equipment and vehicles. This includes both buildings and the parking lots. The RAD I Site has one five-story building, (Building No. 1) and one three-story building (Building No. 2). The majority of the RAD I Site is paved and used for parking and equipment storage. Figure 2 presents a Site Layout Map for the RAD I Site. Building No. 1 is primarily used for garage/storage and warehousing. Building No. 2 is primarily used for office space on the street level and second floors. The basement level of Building No. 2 (which is below grade along Review Avenue but at ground level in the back of the property) is primarily used for warehouse and maintenance services.

1.3 PHYSICAL SETTING

The RAD I Site and the RAD II Site are adjacent to each other and have the same physical setting. A description of the geology and hydrogeology beneath the RAD I Site is provided below.

1.3.1 Geology

The stratigraphy of the RAD I Site and the adjacent properties consists of urban fill overlying glacial deposits, which in turn overlies a clay layer that has been identified as the lower Cretaceous Raritan Formation. The urban fill generally consists of heterogeneous soil ranging from sub angular, loose and compact, silty, fine sand and gravel. Intermixed with the urban fill are debris such as brick fragments, asphalt, wire, and plastic. Soil borings indicate that the urban fill ranges in thickness from 3 feet to 16 feet. The glacial deposits consist of two units distinguishable in color, but not in hydraulic characteristics. The upper section of the glacial deposits is gray to dark gray fine-to-coarse sand and fine-to-coarse gravel. There are local horizontal units of silt interbedded in the upper section of the glacial deposit. The upper section extends to approximately 30 feet below mean sea level (MSL).

The lower section of the glacial deposits is comprised of yellowish-brown, fine to coarse sand and gravel. This unit extends to 71 to 85 feet below MSL. Underlying the coarse sand and gravel is a clay unit referred to as the Lower Clay Unit. The Lower Clay Unit was identified as the Raritan Clay. The Raritan Clay or Lower Clay Unit has been described as a dark gray, finely laminated-to-thin bedded silty clay, silt and clay layer, and white to light gray clay. The clay unit appears to be laterally continuous beneath the Site and adjacent surrounding area.

1.3.2 Hydrogeology

The RAD I Site is located between a local topographic high to the northeast and Newtown Creek, which is a tidally influenced regional groundwater discharge area. Monitoring wells screened in the upper section of the glacial deposits (where LNAPL occurs) and monitoring wells screened in the lower section of the glacial deposits (and cased off from the upper section) have been installed on the RAD I Site and offsite (including the RAD II Site). The locations of the wells are depicted on Figure 2.

The depth to groundwater beneath the RAD I Site has ranged from approximately 15 feet bgs to 20 feet bgs. Groundwater contour maps prepared from the groundwater levels measured in groundwater wells installed in the upper and lower sections of the glacial deposits have indicated a general groundwater flow direction to the south - southwest towards Newtown Creek. A localized groundwater mound, presumably a result of the discontinuous silt and clay layers in the upper section of the glacial deposits, has also been observed to the southwest of the Site between the LIRR tracks and Newtown Creek. The mounding does not appear to influence the direction of groundwater flow at the RAD I site. Groundwater fluctuations of approximately 0.05 to 0.1 feet have been observed beneath the Site as a result of tidal influence in Newtown Creek. During the initial portion of this reporting period (2nd and 3td quarters of 2019), following the significant groundwater level increase observed during the third reporting period, groundwater levels further increased (with additional precipitation) and maintained a significantly higher level than those observed during the first two reporting periods. Groundwater levels, however, then peaked in September 2019 followed by a sharp drop of over 2 ft by the end of February 2020 to levels not observed since the fall of 2018. This drop coincided with lower than normal precipitation in the area. Despite the drop in groundwater levels, they are still over 1 ft higher than baseline groundwater elevations observed during reporting periods 1 and 2.

Overall, the horizontal hydraulic gradient beneath the Site can be described as flat, at approximately 0.0015. Vertical gradients are minimal and localized. Slug test data indicates a range of hydraulic conductivity values for the glacial deposits above the Lower Clay Unit of 62.5 feet per day (ft/d) to 0.5 ft/d. A viscous LNAPL is present on the groundwater table across most of the RAD I and RAD II properties (Golder 2005a).

1.4 CLEANUP GOALS AND REMEDIAL PROGRESS

The remediation goals for the RAD I Site, as stipulated by the November 2011 RAWP (Golder 2011) are to eliminate or reduce to the extent practicable:

- The presence of LNAPL as a potential source of soil, groundwater and soil gas contamination;
- Potential further migration of LNAPL that could result in soil, groundwater or soil gas contamination;
- Exposures of persons at or around the site to VOCs or exceedances of the lower explosive level (LEL) in soil vapor;
- The potential for ingestion/direct contact with contaminated soil; and
- The release of contaminants from the urban soil and LNAPL into groundwater that may create exceedances of groundwater quality standards over time.

In addition, the remediation goals for the RAD I Site are to meet to the extent practicable:

- Ambient groundwater quality standards; and
- Standards, Criteria Goals (SCGs) for soil to the extent practicable.

The remedies selected for the RAD II site are listed below by media:

LNAPL

The remedy for LNAPL beneath the RAD I Site in areas of lower viscosity product is recovery using single-phase skimmer pumps installed in 23 recovery wells on the RAD I Site, or a total of 38 recovery wells on the combined RAD I and RAD II Sites. The remedy for higher viscosity LNAPL product is recovery using a Vacuum Enhanced Recovery/Total Fluids (VER/TF) technology at 10 recovery wells installed on the RAD I Site, or a total of 30 recovery wells on the combined RAD I and RAD II Sites. A long-term monitoring program to monitor the effectiveness of the LNAPL recovery system has been implemented.

Soil

Since the majority of the RAD I Site is paved, installation of a cover on the RAD I Site as a remedy was not needed, although restoration of any disturbances to the existing asphalt pavement on the RAD I Site, as required for system installation, was part of the remedial activities and consisted of installing new asphalt pavement to match existing.

Groundwater

The remedy for groundwater is the establishment of an institutional control that restricts the use of untreated groundwater beneath the RAD I Site as a source of potable water. Groundwater is monitored pursuant to requirements outlined in the Site Management Plan.

Soil Vapor

The results of soil vapor investigations on the RAD I Site have not identified a threat for migration of soil vapor laterally from the limits of the LNAPL beneath the RAD I Site. As such, no specific soil vapor remedy is being implemented other than the benefit of the existing site pavement system and recovery of LNAPL from the site.

Remedial Progress is summarized as follows:

- The LNAPL Recovery System, consisting of both the single-phase skimming and VER/TF recovery technologies, has been implemented and operational for over 52-1/2 months. The LNAPL Recovery System has recovered 426,849 gallons of LNAPL as of March 31, 2020 after the first 52-1/2 months of operation (for both RAD I and RAD II). The volume is based on the amount of liquids disposed and includes LNAPL but also includes degraded product and water.
- All areas of existing asphalt pavement disturbance due to the LNAPL recovery system installation have been restored.
- The Institutional Controls established for the RAD I site have been maintained per the SMP and FER.

2.0 EVALUATION OF REMEDY PERFORMANCE, EFFECTIVENESS AND PROTECTIVENESS

This section describes the required activities under the Site Management Plan, including ICs and ECs, the ongoing monitoring program and the implementation of the Site Operations, Maintenance and Monitoring (OM&M) Plan. A comprehensive SMP has been developed for the Site and includes plans for ICs/ECs, operations and maintenance (O&M), long term monitoring, and associated reporting (MACTEC, 2015).

2.1 SITE MANAGEMENT STATUS

During this reporting period, MACTEC performed O&M for the LNAPL recovery and groundwater treatment system, performed quarterly treated water discharge sampling and reporting, prepared monthly O&M monitoring reports and an Annual Inspection Report. The monthly monitoring reports, which include a summary of site activities for both the RAD I and RAD II sites, are included as Appendix A. The Annual Inspection Report is included in Appendix B and the treated water quarterly compliance sampling reports have been provided in Appendix C. This PRR was completed using site-specific documentation including the Site's ROD (NYSDEC, 2015), annual site inspection and monthly monitoring reports, and the SMP. This review was conducted to confirm that established controls according to the SMP are operational and effective, that the SMP is being implemented and conducted accordingly, and that the remedy remains protective of the environment and/or public health. A summary of Site Management activities completed during this reporting period and an evaluation of the performance, protectiveness, and effectiveness of the remedy is provided below.

2.2 INSTITUTIONAL CONTROLS

A series of ICs are required to: (1) implement, maintain and monitor EC systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the Site to Track 4 restricted uses only. Adherence to these ICs on the RAD I Site is required by the Environmental Easement and is implemented under the SMP. These ICs are as follows:

- The RAD I Site may only be used for restricted use as specified by the SMP;
- All ECs must be operated and maintained as specified in the SMP;
- All ECs must be inspected at a frequency and in a manner defined in the SMP.
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Queens County Department of

Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the NYSDEC.

- Groundwater monitoring must be performed as defined in the SMP;
- Data and information pertinent to site management must be reported at the frequency and in a manner as defined in the SMP;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with the SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;
- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in the SMP;
- Access to the RAD I Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement.
- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 2, and any potential impacts that are identified must be monitored or mitigated.

2.3 ENGINEERING CONTROLS

The following ECs have been implemented at the RAD I Site:

1. A cover system consisting of asphalt pavement
2. A LNAPL Recovery System – consisting of:
    a. A Vacuum Enhanced/Total Fluids (VER/TF) LNAPL recovery system
    b. A single-phase LNAPL recovery system
3. A packaged VER, groundwater treatment, LNAPL Storage and Control system.

2.3.1 Asphalt Cover System

The majority of the RAD I Site was paved with asphalt prior to implementing the remedy. During installation of the components of the extraction system, disturbed areas of asphalt were restored and new asphalt was installed in areas that were not previously asphalt to serve as a cover system to prevent exposure to possible near surface remaining contamination in urban fill/soil. The extent of the cover system is documented in the as-built drawing included as Figure 2 of the SMP (MACTEC, 2015). The cover system was observed during the reporting period to be intact and continuing to function as a cover system but requires repairs at three locations in order to ensure ongoing function. On RAD I, several potholes needed repair and some areas have settled

differentially and required repair as well. An area of the cover system has also been disturbed due to removal of a fence in the CAC area (adjacent to Building 1) and a slope which requires preparation and paving. Pavement repairs were performed during the spring of 2019and consisted of replacing asphalt pavement at three damaged locations as well as paving a berm area in the southwest corner of RAD I.

2.3.2 LNAPL Recovery System

LNAPL recovery on the RAD I property is being conducted via single-phase skimmer pump recovery wells and VER/TF recovery well subsystems. The primary purposes of using the skimmer pump and VER subsystems is to recover LNAPL to the extent practical and support the achievement of the remediation goals for the Site. The LNAPL recovery system has recovered and disposed of 426,849 gallons of LNAPL (LNAPL, degraded product, and water), or an average of 267 gallons per calendar day, (from both RAD I and RAD II) through March 31, 2020 or 52-1/2 months of operation. A total of 48,965 gallons of LNAPL, or an average of 134 gallons per calendar day, has been recovered and disposed of for the current 12-month reporting period. The current 134 gallon per calendar day average production rate represents a 62% decrease from the 355 gallon per calendar day average production rate realized during the first 16-1/2 month reporting period. When taking into account system uptime and normalizing the production per equivalent system run-day, the LNAPL recovery system averaged 162 gallons per run-day for the current period which represents a 73% decrease from the 604 gallon per run-day average realized during the first 16-1/2 month reporting period. This reduction in production rate is attributed to significant depletion of remaining recoverable LNAPL volume and associated decreasing LNAPL transmissivity as evidenced by the substantial decrease in apparent product thickness (see paragraph 2.4.1 for more detail).

Peak LNAPL recovery rates have exceeded 700 gallons per day during the first reporting period, 500 gallons per day during the second reporting period, 400 gallons during the third reporting period, and 300 gallons per day during the current reporting period within the VER/TF Zones 4 and 5 only. Using a representative specific gravity of 0.90, according to data provided in the RAWP, this represents a total recovered LNAPL mass of 3,203,929 pounds after the first 52-1/2 months of operation or an average of 2,006 pounds per day.

During the first reporting period (16-1/2 months of operation), the specific energy consumption of the product recovery operation averaged approximately 1.0 kWh/Gal of product recovered. During reporting period 2, when VER operations were implemented, specific energy consumption rose to 2.6 kWh/Gal. Specific energy consumption further increased to 2.9 kWh/Gal during reporting period 3 as product recovery production continued to decrease with continued VER

operation. Specific energy consumption increased to 3.4 kWh/Gal during reporting period 4. As such, a commensurate increase in specific greenhouse gas emissions has also occurred (lbs/Gal) associated with generated grid energy utilized to power the system (i.e. 4.04 lbs CO2/Gal of product recovered for reporting period 4).

.

Monthly monitoring reports are prepared and have been included in Appendix A. A summary of offsite LNAPL disposal is included in Table 4.

2.3.2.1 Single-Phase Skimming

Twenty-three (23) single-phase skimmer pump wells are installed on RAD I and fifteen (15) single-phase skimmer pump wells are installed on the RAD II Site. Single-phase skimming wells are located in areas with lower viscosity LNAPL. Of the total recovered and disposed of LNAPL volume, 102,484 gallons have been recovered by the single-phase skimming system to date and 19,678 gallons for the reporting period. The skimming system had a monthly average production rate of 54 gallons per calendar day which represents a 41% decrease from the 91 gallons per calendar day average production rate realized during the first 16-1/2 month reporting period. During the reporting period, the skimmer system produced an average monthly peak average of 120 gallons per day and a minimum monthly average of 0 gallons per day. The skimming system has been operating a total of 25,384 run hours to date and 2,928 hours for the reporting period. For the reporting period, the skimmer system has been programmed to operate at 8 hours per day, rather than continuous, in an effort to maintain maximum product recovery while minimizing unnecessary equipment wear and energy consumption. Actual system uptime averaged 100% for the reporting period under these operational parameters.

2.3.2.2 VER/TF Recovery

Ten (10) VER/TF wells are installed on RAD I and twenty (20) VER/TF wells are installed on the RAD II Site. VER applies a vacuum at the extraction well head, creating a pneumatic gradient causing air flow and enhanced product flow through the formation towards the extraction well. TF pumping creates a hydraulic cone of depression to further enhance the recovery of LNAPL, along with the VER, in areas where higher viscosity LNAPL present. Thirty (30) VER wells were installed and associated control systems on RAD I and RAD II. Of the total recovered and disposed of LNAPL volume, 324,365 gallons were recovered by the VER/TF recovery system to date and 29,287 gallons for the reporting period. The VER/TF system had a monthly average production of 87 gallons per calendar day with a peak monthly average of 235 gallons per calendar day and a

minimum monthly average of 8 gallons per calendar day for the reporting period. When taking into account system uptime and normalizing the production per equivalent system run-day, the VER/TF recovery system averaged 110 gallons per run-day which represents a 80% decrease from the 549 gallon per run-day average production rate realized during the first 16-1/2 month reporting period. The VER/TF recovery system had a total of 29,144 run hours to date and 7,242 hours for the reporting period. Actual system uptime averaged 88.96% for the year ranged from a low of 77.3% to a high of 100%. System uptime increased significantly from the 68.02% average realized during the first 16-1/2 months of operation. This uptime improvement is largely a result of upgrading the Oil/Water separation system with the addition of a Tube Skimmer and changing the type of Biocide injected which does not impact the performance of the Sequestering Agent. The following table provides a graphic summary of extraction zone operations during the reporting period.

2.3.3 Groundwater Treatment System

Groundwater and LNAPL pumped from RAD I (and RAD II) flows through the LNAPL Recovery and Groundwater Treatment Building (LRGTB) located on RAD II. The LNAPL is collected and stored in one of two 6,000-gallon steel aboveground storage tanks located in a secondary containment dikes outside of the LRGTB on RAD II. One storage tank is configured to receive LNAPL recovered from the VER/TF System and the second storage tank is configured to receive LNAPL recovered from the Skimmer System. Since LNAPL Recovery System startup on November 16, 2015, the groundwater treatment system has processed and discharged 11,835,986 gallons of process water (extracted by the VER/TF System) or an average of 6,754 gallons per calendar day. The peak process water treatment/discharge rate exceeded 10,000 gallons per day. The treated groundwater is sampled in accordance with the site discharge permit and discharged to the New York City Bowery Bay Publicly Owned Treatment Works (POTW). Quarterly discharge compliance sampling results have been provided in Appendix C.

The extracted groundwater/LNAPL mixture, or Total Fluids (TF) influent, produced by the VER/TF System during the current 12-month reporting period (April 1, 2019 through March 31, 2020) had an average extracted oil/water ratio of 1.28% which is less than the 4.18% average oil/water ratio observed during the first 16-1/2 months of operation (first reporting period). This represents a 69% reduction in extracted oil/water ratio between the first and fourth reporting periods despite the addition of full time VER operation. Furthermore, the peak monthly average oil/water ratio ranged from less than 0.5% to over 3.5% for a brief period of time in TF/VER zones 4 & 5. The variability in monthly oil/water ratios is largely due to rotating TF/VER operations between various extraction zones which have different amounts of product present on the groundwater and differences in the types of product present (viscosity, slight changes in specific gravity, amount of iron bacteria, etc.).

Recovered LNAPL, stored in both T-1401 (single-phase skimmer wells) and T-801 (VER/TF wells) is analyzed approximately once every 2 – 3 months for PCB concentrations. PCB concentrations in LNAPL recovered from the single-phase skimming wells remained at ND for this reporting period, while PCB concentrations in LNAPL recovered from the VER/TF system have varied between 7.42 and 9.94 ppm during this reporting period. See Table 1 for a summary of recovered LNAPL PCB concentrations.

2.3.4 SVE System

The SVE system is used to employ VER technology along with hydraulic enhancement to further increase radius of influence and recoverability of higher viscosity LNAPL. The SVE system, or VER enhancement, was operated full time throughout the reporting period to counter diminishing

product recovery rates from each of the six (6) TF Zones. The VER enhancement , however, was shut off during the early Summer through the mid Fall of 2019 due to elevated groundwater levels. The elevated groundwater level caused blinding of the recovery well screens, loss of vacuum and entry of water and product into the VER piping network. The VER blower inlet filter also became completely saturated with oil. Despite this period of down-time, the VER enhancement system has operated for a total of 4,559 hours during the reporting period through March 2020. With lower groundwater levels, VER enhancement is anticipated to be operated on a full-time basis going forward into the fifth year of operation as well.

2.3.5 System Operational Challenges and Actions

- Phased out the use of emulsion breaker since installing the tube skimmer (December 2016) as part of our Oil/Water Separation process. Periodic QC testing indicates that we generally meet sewer discharge compliance for SGT-HEM (< or = 50 ppm SGT-HEM) upstream of our liquid phase carbon treatment.
- Increased VER activity to enhance TF product recovery – have switched to full time VER operation since mid-September 2017. Aside from summer through fall 2019 (as reported above), VER enhancement has been operated continuously during the fourth reporting period (2019 and early 2020).
- Installed additional auto air relief vents in the skimmer system header network at key high point locations (S-4A, S-5A and 5B) during 2017 in order to eliminate air lock and improve product flow through the skimmer system process lines.
- The recovery pumps within two of the TF wells (TF-7A and B) were determined to be stuck and un-removable with heavy duty hoist equipment. In addition, a significant amount of coarse sand is delivered to the GWTS when these pumps are operated. As such, we have concluded that the screens have failed in these wells. Re-drilling operations were not conducted in 2019.
- ***High iron in groundwater –*** Shortly after commencement of VER/TF system operations, the presence of >20ppm Total Iron was detected in the influent to the groundwater treatment system. Prior to the injection of sequestering agent (Redux 330) during the first year of operation, the high iron concentrations caused rapid fouling of the bag filters, LGAC treatment units and strainers which resulted in reduced system uptime. Since implementing, sequestering agent chemical injection has successfully controlled high iron concentrations and maintained high system uptime by allowing for iron mass transfer and minimizing pre-mature fouling of the bag filters and carbon filtration units. The sequestering agent injection has continued to be effective during this reporting period.
- ***Biological growth/Grey Matter –*** Iron related bacteria growth is rapid during warm weather operation and is controlled adequately with the use of biocide. Without biocide, fouling of the

bag filters, the LGAC treatment units and the strainers cause significantly reduced run-time. During cooler weather operations, the biocide has not been needed. A new biocide (Redux 620) was employed during the Spring of 2017 (replacing the Verox 8 Biocide) and is designed to limit negative impact to the sequestering agent effectiveness. The new biocide has proven to work effectively during the warmer weather months of 2017, 2018, and 2019 with no significant grey matter formation and impact to the iron sequestration process. As such, the biological growth was successfully controlled and high system up-time was maintained throughout the warmer months of 2017 and 2018. During the Fall of 2017, 2018, and 2019 we once again ceased injection of the biocide with no adverse effects to system up-time.

- ***Variable LNAPL characteristics*** **-** Different product characteristics and associated separation difficulties were resolved in late 2016 with the addition of a tube skimmer in the primary separation tank of the two-stage oil water separation process. The addition of the tube skimmer has allowed for excellent oil/water separation at varied flow rates and LNAPL consistencies and has continued to operate extremely well through this reporting period. Operational uptime for the VER/TF and groundwater treatment system has improved to >95% uptime since installing and optimizing the tube skimmer on December 22, 2016. In addition, product recovered from the TF Zones during 2017 has begun to change from a mostly dark colored, medium viscosity product to a mostly light brown colored product with significantly higher viscosity. Viscosity has increased to a level near and above typical petroleum industry pumpability standards based on laboratory and field viscosity testing. We believe this is an indication that most of the more mobile (darker, less viscous) product has been recovered and more of the less mobile (light brown, more viscous) product is now being recovered with the help of the VER. Since August of 2018 we have noticed that a significantly greater portion of the recovered product appears to be a highly degraded with a smaller portion of pure product. The degraded product also has a high water content which then phases out into the product storage tank (T-801) and has to be pumped out and back into the treatment system. This phenomenon has been ongoing to the end of the third reporting period since August 2019.
- ***Recovery Well LNAPL PCB Sampling –*** All four (4) identified TSCA PCB impacted recovery wells (TF-3D, 4D, 5D and 6D) were managed separately by pumping and collecting the high PCB product (>50 PPM) independently from the automated Total Fluids system via a Specific Gravity Skimmer Pump into a 55-gallon DOT shippable drum. This process continued at each of the four recovery wells until PCB concentrations in the recovered product was reduced to < 50 PPM for three consecutive rounds of pumping and sampling. The process of managing this LNAPL separate from the rest of the recovery system was approved in the SMP and completed including disposal in February 2018.
- ***High Groundwater Levels –*** As described above, a period of extremely high groundwater elevations necessitated a temporary shut-down of the VER system (early Summer through the

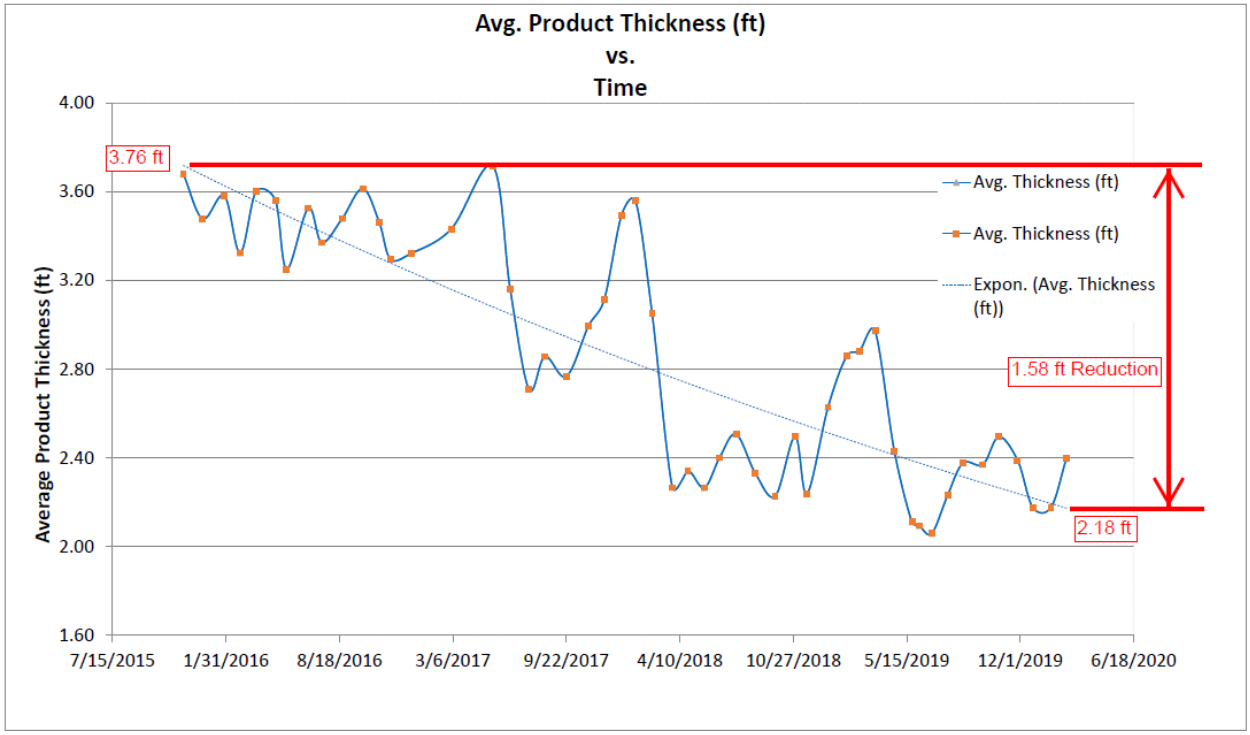
mid Fall of 2019) in order to prevent damage to the VER blower and flooding of the VER extraction piping network. Groundwater elevations have significantly fallen from their peak levels, and VER operation was restored in the late Fall of 2019.

2.4 ADDITIONAL ACTIVITIES

In addition to system operation activities, other SMP required activities are also underway to monitor remediation progress and effectiveness as outlined below.

2.4.1 LNAPL Gauging

Site wide LNAPL gauging events at thirty-three (33) LNAPL monitoring wells on RAD I and RAD II provide evidence that average LNAPL thickness is trending downwards across the site and has decreased by approximately 1.58 feet (on average) at the end of February 2020 as illustrated in the figure below (the March 2020 gauging event was canceled due to COVID 19 safety concerns). This average thickness decrease is significantly greater than the 0.17 feet average decrease presented approximately three (3) years earlier at the end of March 2017, 0.68 feet average decrease presented two (2) years earlier at the end of March 2018 and the 1.44 feet average decrease presented one (1) year earlier at the end of March 2019.



2.4.2 High PCB LNAPL Management

LNAPL was sampled from each recovery well and analyzed for PCBs prior to system start-up. Wells with LNAPL PCB concentrations > 25 ppm were re-sampled during the first year of operation. Of the > 25 ppm well locations that were re-sampled, 4 wells contained LNAPL PCB concentrations >/=50 ppm and were not plumbed into the collection system such that high PCB LNAPL (>/=50 ppm) would not be mixed with other recovered LNAPL with concentrations below 50 ppm. These four (4) recovery wells were TF-3D, TF-4D, TF-5D and TF-6D of which all but TF-6D are located on RAD II. Per the SMP, product was recovered from these wells independently from the balance of the system and the high PCB concentration LNAPL was managed and disposed of separately as TSCA regulated Waste. Product was recovered from these wells with a manually controlled single-phase skimmer pump configured to discharge into a DOT-shippable 55-gallon drum until three (3) consecutive rounds of LNAPL PCB sampling indicated that concentrations dropped below 50 ppm. All four (4) high PCB wells successfully followed this process after recovery and disposal of approximately 128 gallons of LNAPL. The TSCA regulated LNAPL was disposed of in three shipments which occurred in August 2016, August 2017 and February 2018. All four (4) of these wells were re-plumbed into the automated Total Fluids collection system as reported in the 2nd PRR. Refer to Figure 2 for locations and Tables 2 and 3, which summarize the results of baseline and years 1, 2 and 3 sampling as well as results of PCB sampling from product recovered from each of these wells.

2.4.3 LNAPL Disposal Summary

The total volume of RCRA Nonhazardous LNAPL with PCBs <50 ppm disposed offsite from RAD I and RAD II combined was 426,849 gallons through March 31, 2020. This waste stream was transported by Cycle Chem, Inc. to their facility in Elizabeth, NJ for solidification then was transported by Cycle Chem, Inc. to Conestoga Landfill in New Morgan Borough, Pennsylvania for disposal. The total volume of LNAPL with PCBs >/=50 ppm disposed offsite from RAD II was approximately 78 gallons all of which was recovered and disposed of during the second reporting period. This waste stream was transported by Cycle Chem, Inc. to Veolia ES in Flanders, New Jersey and Port Arthur, Texas for incineration.

2.4.4 Groundwater Monitoring

The sixth and sixth groundwater monitoring sampling events occurred on July 10th through 11th and December 16th through 19th, 2019. The results of the fourth and fifth sampling events were found to be consistent with historic results and were submitted under separate cover in advance of this report.

3.0 IC/EC PLAN COMPLIANCE

3.1 IC/EC REQUIREMENTS AND COMPLIANCE

3.1.1 IC/EC Requirements Summary

A summary of the ICs and ECs implemented for the Site, as well as the inspections, monitoring, maintenance and reporting activities required by the Site Management Plan are outlined below.

Site Identification: RAD I - BCP #C241089, Long Island City, Queens, NY

Institutional Controls:	The property may be used for commercial use;
	• The RAD I Site may only be used for restricted use. • All EC's must be operated and maintained as specified in the SMP. All EC's must be inspected at a frequency and in a manner defined in the SMP. • The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Queens County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the NYSDEC. This IC is outlined in the deed restriction recorded on 10/21/15 paragraph 2.A.(4). Groundwater monitoring must be performed as defined in the SMP. • Data and information pertinent to site management must be reported at the frequency and in a manner as defined in the SMP. • All future activities that will disturb remaining contaminated material must be conducted in accordance with the SMP. • Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP. • Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in the SMP. • Access to the RAD I Site must be provided to agents, employees or other representatives of the State of New York

Site Identification: RAD I - BCP #C241089, Long Island City, Queens, NY

	with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement. This IC is outlined in the above referenced deed restriction paragraph 2.A.(10). • The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 2, and any potential impacts that are identified must be monitored or mitigated. • All ECs must be inspected at a frequency and in a manner defined in the SMP.
Engineering Controls:	Cover system – 6-inch asphalt paving system
	LNAPL Recovery and Treatment System • Two 6,000 gallon LNAPL Storage Tanks • Two 8’ x 40’ Equipment Enclosures • 38 Skimmer well pumps and piping • 30 VER Well pumps, SVE blower air treatment and piping, liquid treatment equipment and discharge piping.

Inspections:	Frequency
Cover inspection	Annually
Treatment System and Equipment Inspections per OM&M Manual	Monthly, Quarterly and Semi-Annual Per OM&M Manual
Monitoring:	
Presence and Absence of LNAPL in Wells Identified on Table 3 of SMP for RAD I	Monthly, Quarterly and Semi-Annual as indicated on Table 3 of SMP for RAD I
Groundwater Monitoring/Sampling of Monitoring Wells Identified on Table 3 of the SMP for RAD I	Semi-Annual as indicated on Table 3 of SMP for RAD I
Maintenance:	
Equipment maintenance per Table of SMP	Per Table 4 of SMP

Site Identification: RAD I - BCP #C241089, Long Island City, Queens, NY

Reporting:	
LNAPL Monitoring	Per Table 3 of SMP
Treated Water Discharge Sampling and Reporting	Quarterly
Periodic Review Report	Annually

3.1.2 Status of IC/ECs

All ICs and ECs have been implemented and are being monitored and maintained in accordance with the SMP. The LNAPL Recovery and Treatment system will continue to be operated, monitored and maintained until such time that the remedial objectives as outlined in the SMP have been achieved. Treated Water quarterly compliance sampling reports are provided in Appendix C. As described above in section 2.4.1, monthly LNAPL gauging events indicate that the LNAPL Recovery System is effective.

3.1.3 Corrective Measures

- ***Cap/Pavement system on RAD 1 –*** A significant portion of the asphalt pavement was replaced by the site owner during the Spring of 2019 in areas of greatest traffic which had degraded to an unacceptable state.

3.1.4 Conclusions and Recommendations for Changes

- Section 4.3 outlines several identified recommended actions in order to ensure ongoing effective protection for site occupants as well as to enhance, optimize and minimize the duration of the remedy.
- The addition of concrete barriers has improved the fence integrity with fewer repairs needed in the treatment compound since installation. the integrity of fence in other areas of the site needs attention and repairs.
- TF/VER Recovery well integrity is questionable in certain areas of RAD I and II which may be the cause of TF pump discharge line fouling and clogging. A program of well re-development is being evaluated.
- Bailing or redevelopment of monitoring wells associated with the long term LNAPL Monitoring plan is also being evaluated to confirm apparent product thickness measurements..

3.1.5 IC/EC Certification

The NYSDEC Site Management PRR IC/EC Certification Form has been completed and provided and attached at the front this report.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on this review, the remedy continues to be protective of the public health and the environment and is compliant with the Site Management Plan.

4.1 INSTITUTIONAL CONTROLS

The current ICs are adequate to achieve the objective for protection of human health and the environment based on current site use.

4.2 ENGINEERING CONTROLS

The current ECs are adequate to achieve the objectives for protection of human health and the environment based on current site use..

4.3 OTHER SITE-RELATED ACTIVITIES

Based on the information presented in this PRR, the following activities are recommended to be completed within the next annual reporting period in efforts to maintain the asphalt cover system, optimize LNAPL recovery system operations and accelerate the timeframe to site delisting.

- CAC area cap repair/completion.
- Continue to optimize production by adjusting the duration and rotation of active VER/TF system zones to maximize product recovery rates while minimizing groundwater discharge to sewer and energy consumption.
- A program of well re-development is being evaluated.
- Bailing or redevelopment of monitoring wells associated with the long term LNAPL Monitoring plan is being evaluated.
- A discussion with the DEC was held in early December 2019 regarding progress to date and criteria needed to progress to toward transitioning to a shutdown of the VER/TF LNAPL recovery technology and a transition to an expansion of the ongoing skimming technology. This skimming plan is focused on the downgradient site boundary as well as the areas of the site with the most remaining recoverable product such that prevention of downgradient product migration is effectively maintained while still recovering source area LNAPL in a more energy efficient manner.

5.0 REFERENCES

Golder Associates, Inc. (Golder), 2005. *Remedial Investigation Report, Quanta Resources Site, Long Island City, New York, June 2005*

Golder Associates, Inc. (Golder), 2011. *Remedial Action Work Plan, Review Avenue Development, Long Island City, Queens, New York, November, 2011*

MACTEC Engineering and Consulting, P.C. (MACTEC), 2015. *Site Management Plan, Review Avenue Development (RAD) I, Queens County, Long Island City, New York, December, 2015.*

New York State Department of Environmental Conservation (NYSDEC), 2007. *Declaration Statement – Record of Decision, Quanta Resources Inactive Hazardous Waste Disposal Site (a.k.a. Review Avenue Development II), Long Island City, Queens, New York, Site No. 2-41-005, February 2007.*

TABLES

Table 1
Summary of PCB Analytical Data - LNAPL Storage Tanks
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	T-801-0116		T-1401-0116		T-801		T-1401		T-801-0416		T-1401-0416	
Sample Date:		1/25/2016		1/25/2016		3/7/2016		3/7/2016		4/5/2016		4/5/2016	
Lab Sample ID:		460-108101-8		460-108101-7		JC15542-1		JC15542-2		JC17676-2		JC17676-3	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	15		5.2		12.7		0.5	U	0.5	U	0.5	U
Aroclor 1248	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	9.35		2.03	
Aroclor 1254	mg/kg	4.9		0.5	U	0.5	U	0.5	U	5.11		0.5	U
Aroclor 1260	mg/kg	0.5	U	3.3		0.5	U	0.5	U	5.22		0.5	U
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	19.9		8.5		12.7		0.5	U	19.68		2.03	

Table 1
Summary of PCB Analytical Data - LNAPL Storage Tanks
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	T-801-052716		T-1401-052716		T-801-071116		T-1401-071116		T-801-083016		T-1401-083016	
Sample Date:		5/27/2016		5/27/2016		7/11/2016		7/11/2016		8/30/2016		8/30/2016	
Lab Sample ID:		JC21238-1		JC21238-2		JC23844-1		JC23844-2		JC26784-1		JC26784-2	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	4.37		1.24	
Aroclor 1248	mg/kg	6.87		0.5	U	4.32		0.5	U	0.5	U	0.5	U
Aroclor 1254	mg/kg	0.5	U	0.5	U	7.28		0.5	U	0.5	U	0.5	U
Aroclor 1260	mg/kg	5.99		0.5	U	6.23		0.5	U	5.29		2.87	
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	12.86		0.5	U	17.83		0.5	U	9.66		4.11	
						w/ Permanganate Cleanup Procedure [1]		**w/ Permanganate Cleanup Procedure [1]**		**w/ Permanganate Cleanup Procedure [1]**		**w/ Permanganate Cleanup Procedure [1]**	

Table 1
Summary of PCB Analytical Data - LNAPL Storage Tanks
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	RA-T801-102116		T-801-010617		T-1401-010617		T-801-031717		T-801P-041017		T-1401-042517	
Sample Date:		10/21/2016		1/6/2017		1/6/2017		3/17/2017		4/10/2017		4/25/2017	
Lab Sample ID:		JC30289-2		JC35069-2		JC35069-3		JC39231-2		JC40858-1		JC42010-1	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	0.5	U	2.86		0.976		3.37		0.5	U	0.5	U
Aroclor 1248	mg/kg	2.85		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1254	mg/kg	0.5	U	4.16		3.96		0.5	U	0.5	U	0.5	U
Aroclor 1260	mg/kg	4.01		2.22		2.08		0.5	U	0.5	U	0.5	U
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	6.86		9.24		7.016		3.37		0.5	U	0.5	U
		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]	

Table 1
Summary of PCB Analytical Data - LNAPL Storage Tanks
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	T-801-050917		T-801-070317		T-801-101017		T-1401-101017		T-801-0118		T-1401-0118	
Sample Date:		5/9/2017		7/3/2017		10/10/2017		10/10/2017		1/3/2018		1/3/2018	
Lab Sample ID:		JC42990-1		JC35069-3		JC52795-4		JC52795-5		JC58353-1		JC58353-2	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	0.5	U	1.08		0.5	U	0.5	U	2.23		0.5	U
Aroclor 1248	mg/kg	0.5	U	0.5	U	20.4		0.5	U	0.5	U	0.5	U
Aroclor 1254	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	7.27		0.5	U
Aroclor 1260	mg/kg	0.5	U	2.18		10.4		0.5	U	0.5	U	0.5	U
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	0.5	U	3.26		30.8		0.5	U	9.5		0.5	U
		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]	

Table 1
Summary of PCB Analytical Data - LNAPL Storage Tanks
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	T-801-031318		T-1401-031318		T-801-050118		T-1401-050118		T-801-0618		T-1401-0618	
Sample Date:		3/13/2018		3/13/2018		5/1/2018		5/1/2018		6/5/2018		6/5/2018	
Lab Sample ID:		JC62277-1		JC62277-2		JC65251-1		JC65251-2		JC67478-1		JC67478-2	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.2	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.2	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.13	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	0.5	U	0.5	U	0.08	U	0.5	U	0.5	U	0.5	U
Aroclor 1248	mg/kg	2.89		4.04	U	7.01		0.5	U	0.5	U	0.5	U
Aroclor 1254	mg/kg	0.5	U	0.5	U	0.12	U	0.5	U	0.5	U	0.5	U
Aroclor 1260	mg/kg	1.95		2.71	U	6.53		0.5	U	0.5	U	0.5	U
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.074	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.038	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	4.84		4.04	U	13.54		0.5	U	0.5	U	0.5	U
		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]	

Table 1
Summary of PCB Analytical Data - LNAPL Storage Tanks
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	T-801-0918		T-1401-0918		T-801-0119		T-1401-0119		T-801-0319		T-1401-0319		T-801-G	
Sample Date:		9/5/2018		9/5/2018		1/2/2019		1/2/2019		3/14/2019		3/14/2019		8/13/2019	
Lab Sample ID:		JC73140-1		JC73140-2		JC80741-1		JC80741-2		JC84564-1		JC84564-2		JC93220-1	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	9.7		0.5	U	11.9		0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1248	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	3.65	
Aroclor 1254	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	2.22	
Aroclor 1260	mg/kg	10.2		0.5	U	0.5	U	0.5	U	10.7		0.5	U	4.07	
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	19.9		0.5	U	11.9		0.5	U	10.7		0.5	U	9.94	
		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]	

Table 1
Summary of PCB Analytical Data - LNAPL Storage Tanks
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	T-1401-G		PCB 801 2-13		PCB 1401 2-13	
Sample Date:		8/13/2019		2/13/2020		2/13/2020	
Lab Sample ID:		JC93220-2		JD3464-2		JD3464-1	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	0.5	U	7.42		0.5	U
Aroclor 1248	mg/kg	0.5	U	0.5	U	0.5	U
Aroclor 1254	mg/kg	0.5	U	0.5	U	0.5	U
Aroclor 1260	mg/kg	0.5	U	0.5	U	0.5	U
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	0.5	U	7.42		0.5	U
		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]	

Table 1
Summary of PCB Analytical Data - LNAPL Storage Tanks
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Notes:

Bold = PCB Concentration > 50 mg/kg

Definitions:

mg/kg = milligrams per kilogram

PCB = Polychlorinated Biphenyl

RL = Reporting Limit

Data Qualifiers:

J = Indicates an estimated value

U = Not detected at the indicated Reporting Limit

Footnotes:

(1) Samples analyzed using SW-846 EPA Test Method 3665A Sulfuric Acid/Permanganate Cleanup

Table 2
Summary of PCB Analytical Data - Baseline Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-1A		TF-1B		TF-1C		TF-1D		TF-2A		TF-2B		TF-2C	
Sample Date:		12/23/2014		3/25/2015		3/25/2015		12/23/2014		12/23/2014		3/25/2015		12/23/2014	
Lab Sample ID:		460-88367-14		460-92207-2		460-92207-1		460-88367-13		460-88367-10		460-92207-3		460-88367-11	
Aroclor 1016	mg/kg	0.33	U	0.16	U	0.16	U	0.33	U	0.33	U	0.16	U	0.33	U
Aroclor 1221	mg/kg	0.43	U	0.21	U	0.21	U	0.43	U	0.43	U	0.21	U	0.43	U
Aroclor 1232	mg/kg	0.51	U	0.25	U	0.25	U	0.51	U	0.51	U	0.25	U	0.51	U
Aroclor 1242	mg/kg	0.33	U	0.16	U	0.16	U	9.9		0.33	U	0.16	U	0.33	U
Aroclor 1248	mg/kg	0.33	U	0.16	U	0.16	U	0.33	U	0.33	U	0.16	U	0.33	U
Aroclor 1254	mg/kg	0.33	U	0.16	U	0.16	U	0.33	U	0.33	U	0.16	U	0.33	U
Aroclor 1260	mg/kg	0.33	U	0.16	U *	0.16	U *	9.6		0.33	U	5.1	*	17	
Aroclor 1268	mg/kg	0.56	U	0.27	U	0.27	U	0.56	U	0.56	U	0.27	U	0.56	U
Aroclor 1262	mg/kg	0.56	U	0.27	U	0.27	U	0.56	U	0.56	U	0.27	U	0.56	U
Total PCBs	mg/kg	0.56	U	0.27	U *	0.27	U *	19.5		0.56	U	5.1	*	17	

Prepared by: VMW 02/28/17
Reviewed by: TCK 02/28/17

Table 2
Summary of PCB Analytical Data - Baseline Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-2D		TF-3A		TF-3B		TF-3C		TF-3D		TF-4A		TF-4B	
Sample Date:		12/23/2014		4/27/2015		12/23/2014		12/23/2014		4/30/2015		12/23/2014		12/23/2014	
Lab Sample ID:		460-88367-12		460-93882-2		460-88367-9		460-88367-8		460-94094-1		460-88367-4		460-88367-5	
Aroclor 1016	mg/kg	0.33	U	0.16	U *	0.34	U	0.33	U	0.17	U	0.33	U	0.33	U
Aroclor 1221	mg/kg	0.43	U	0.21	U	0.43	U	0.43	U	0.22	U	0.43	U	0.43	U
Aroclor 1232	mg/kg	0.51	U	0.25	U	0.51	U	0.51	U	0.26	U	0.51	U	0.51	U
Aroclor 1242	mg/kg	18		0.16	U	8.9		18		21		0.33	U	5.3	
Aroclor 1248	mg/kg	0.33	U	0.16	U	0.34	U	0.33	U	0.17	U	0.33	U	0.33	U
Aroclor 1254	mg/kg	0.33	U	0.16	U	0.34	U	0.33	U	0.17	U	0.33	U	0.33	U
Aroclor 1260	mg/kg	14		0.16	U *	2		4.9		16		0.33	U	5.8	
Aroclor 1268	mg/kg	0.56	U	0.27	U	0.56	U	0.56	U	0.28	U	0.56	U	0.56	U
Aroclor 1262	mg/kg	0.56	U	0.27	U	0.56	U	0.56	U	0.28	U	0.56	U	0.56	U
Total PCBs	mg/kg	32		0.27	U	10.9		22.9		37		0.56	U	11.1	

Table 2
Summary of PCB Analytical Data - Baseline Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-4C		TF-4D		TF-5A		TF-5B		TF-5C		TF-5D		TF-6A	
Sample Date:		12/23/2014		12/23/2014		12/23/2014		12/23/2014		12/23/2014		12/23/2014		1/23/2015	
Lab Sample ID:		460-88367-6		460-88367-7		460-88367-3		460-88367-2		460-88367-1		460-88367-24		460-89644-1	
Aroclor 1016	mg/kg	0.33	U	0.33	U	0.33	U	0.34	U	0.34	U	0.33	U	0.17	U
Aroclor 1221	mg/kg	0.43	U	0.43	U	0.43	U	0.43	U	0.43	U	0.43	U	0.22	U
Aroclor 1232	mg/kg	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U	0.26	U
Aroclor 1242	mg/kg	29		30		0.33	U	0.34	U	27		30		9.2	
Aroclor 1248	mg/kg	0.33	U	0.33	U	0.33	U	0.34	U	0.34	U	0.33	U	0.17	U
Aroclor 1254	mg/kg	0.33	U	0.33	U	0.33	U	0.34	U	0.34	U	0.33	U	0.17	U
Aroclor 1260	mg/kg	7.7		15		0.33	U	1.5	J	15		14		11	
Aroclor 1268	mg/kg	0.56	U	0.56	U	0.56	U	0.57	U	0.56	U	0.56	U	0.28	U
Aroclor 1262	mg/kg	0.56	U	0.56	U	0.56	U	0.57	U	0.56	U	0.56	U	0.28	U
Total PCBs	mg/kg	36.7		45		0.56	U	1.5		42		44		20.2	

Table 2
Summary of PCB Analytical Data - Baseline Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-6B		TF-6C		TF-6D		TF-7A		TF-7B		TF-7C		TF-7D	
Sample Date:		1/23/2015		1/23/2015		1/23/2015		1/23/2015		1/23/2015		4/27/2015		1/23/2015	
Lab Sample ID:		460-89644-3		460-89644-5		460-89644-7		460-89644-2		460-89644-4		460-93882-1		460-89644-6	
Aroclor 1016	mg/kg	0.16	U	0.17	U	0.33	U	0.17	U	0.17	U	0.16	U *	0.17	U
Aroclor 1221	mg/kg	0.21	U	0.22	U	0.43	U	0.22	U	0.22	U	0.21	U	0.22	U
Aroclor 1232	mg/kg	0.25	U	0.26	U	0.51	U	0.26	U	0.26	U	0.25	U	0.26	U
Aroclor 1242	mg/kg	17		9.1		30		3.4		8		0.16	U	11	
Aroclor 1248	mg/kg	0.16	U	0.17	U	0.33	U	0.17	U	0.17	U	0.16	U	0.17	U
Aroclor 1254	mg/kg	0.16	U	0.17	U	0.33	U	0.17	U	0.17	U	0.16	U	0.17	U
Aroclor 1260	mg/kg	13		11		22		4.4		12		0.16	U *	13	
Aroclor 1268	mg/kg	0.27	U	0.28	U	0.56	U	0.28	U	0.28	U	0.27	U	0.28	U
Aroclor 1262	mg/kg	0.27	U	0.28	U	0.56	U	0.28	U	0.28	U	0.27	U	0.28	U
Total PCBs	mg/kg	30		20.1		**52**		7.8		20		0.27	U	24	

Table 2
Summary of PCB Analytical Data - Baseline Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-7E		TF-7F		S-1B		S-1C		S-2A		S-2B		S-2C	
Sample Date:		1/23/2015		1/30/2015		12/23/2014		12/23/2014		12/23/2014		12/23/2014		12/23/2014	
Lab Sample ID:		460-89644-8		460-89873-1		460-88367-20		460-88367-19		460-88367-21		460-88367-23		460-88367-22	
Aroclor 1016	mg/kg	0.17	U	0.33	U	0.33	U	0.34	U	0.33	U	0.17	U	0.17	U
Aroclor 1221	mg/kg	0.21	U	0.42	U	0.43	U	0.43	U	0.43	U	0.22	U	0.22	U
Aroclor 1232	mg/kg	0.25	U	0.5	U	0.51	U	0.51	U	0.51	U	0.26	U	0.26	U
Aroclor 1242	mg/kg	20		27		0.33	U	0.34	U	0.33	U	0.17	U	0.17	U
Aroclor 1248	mg/kg	0.17	U	0.33	U	0.33	U	0.34	U	0.33	U	0.17	U	0.17	U
Aroclor 1254	mg/kg	0.17	U	0.33	U	0.33	U	0.34	U	0.33	U	0.17	U	0.17	U
Aroclor 1260	mg/kg	17		9.8		0.33	U	0.34	U	0.33	U	0.17	U	6.3	
Aroclor 1268	mg/kg	0.28	U	0.55	U	0.56	U	0.57	U	0.56	U	0.28	U	0.28	U
Aroclor 1262	mg/kg	0.28	U	0.55	U	0.56	U	0.57	U	0.56	U	0.28	U	0.28	U
Total PCBs	mg/kg	37		36.8		0.56	U	0.57	U	0.56	U	0.28	U	6.3	

Table 2
Summary of PCB Analytical Data - Baseline Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	S-3A		S-3B		S-3C		S-3E	
Sample Date:		12/23/2014		12/23/2014		12/23/2014		12/23/2014	
Lab Sample ID:		460-88367-18		460-88367-15		460-88367-16		460-88367-17	
Aroclor 1016	mg/kg	0.33	U	0.33	U	0.34	U	0.33	U
Aroclor 1221	mg/kg	0.43	U	0.43	U	0.43	U	0.43	U
Aroclor 1232	mg/kg	0.51	U	0.51	U	0.51	U	0.51	U
Aroclor 1242	mg/kg	0.33	U	0.33	U	0.34	U	0.33	U
Aroclor 1248	mg/kg	0.33	U	0.33	U	0.34	U	0.33	U
Aroclor 1254	mg/kg	0.33	U	0.33	U	0.34	U	0.33	U
Aroclor 1260	mg/kg	0.33	U	0.33	U	0.34	U	0.33	U
Aroclor 1268	mg/kg	0.56	U	0.56	U	0.57	U	0.56	U
Aroclor 1262	mg/kg	0.56	U	0.56	U	0.57	U	0.56	U
Total PCBs	mg/kg	0.56	U	0.56	U	0.57	U	0.56	U

Table 2
Summary of PCB Analytical Data - Baseline Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Notes:

Bold = PCB Concentration > 50 mg/kg

Definitions:

mg/kg = milligrams per kilogram

PCB = Polychlorinated Biphenyl

RL = Reporting Limit

Data Qualifiers:

J = Indicates an estimated value

U = Not detected at the indicated Reporting Limit

* = Recovery or RPD exceeds control limits

Table 3
Summary of PCB Analytical Data - Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-2D-083016		TF-3D-061516		TF-3D-061516		TF-3D-090116		TF-3D-082517		TF-3D		TF-3D	
Sample Date:		8/30/2016		6/15/2016		6/15/2016		9/1/2016		8/25/2017		10/25/2017		11/14/2017	
Lab Sample ID:		JC26783-5		JC22334-1		JC22334-1R		JC26925-1		JC49684-2					
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	12.3		25.3		21.9		3.03		11.5		0.5	U	9.33	
Aroclor 1248	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	28.7		0.5	U
Aroclor 1254	mg/kg	9.58		26.7		18		0.5	U	20.4		16.7		11	
Aroclor 1260	mg/kg	10.0		0.5	U	14.1		3.2		0.5	U	0.5	U	0.5	U
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	31.88		52		**54**		6.18		31.9		45.4		20.33	
		w/ Permanganate Cleanup Procedure [1]				w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]	

Table 3
Summary of PCB Analytical Data - Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-4C-061516		TF-4C-061516		TF-4C-083016		TF-4D-061516		TF-4D-061516		TF-4D-070517		TF-4D-071417	
Sample Date:		6/15/2016		6/15/2016		8/30/2016		6/15/2016		6/15/2016		7/3/2017		7/14/2017	
Lab Sample ID:		JC22334-2		JC22334-2R		JC26783-6		JC22334-3		JC22334-3R		JC46386-2		JC47048-1	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	26.4		17.6		18.6		43.2		25.1		13.2		0.5	
Aroclor 1248	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	13.7	U
Aroclor 1254	mg/kg	18.2		9.28		0.5	U	50		20.9		0.5	U	18	
Aroclor 1260	mg/kg	0.5	U	8.0		8.1		0.5	U	18.1		9.04		0.5	U
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	44.6		34.9		26.7		93.2		**64.1**		22.24		18.5	
				w/ Permanganate Cleanup Procedure [1]		**w/ Permanganate Cleanup Procedure [1]**				**w/ Permanganate Cleanup Procedure [1]**		**w/ Permanganate Cleanup Procedure [1]**		**w/ Permanganate Cleanup Procedure [1]**	

Table 3
Summary of PCB Analytical Data - Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-4D-072017		TF-5C-061516		TF-5C-061516		TF-5C-083016		TF-5D-061516		TF-5D-061516		TF-5D-083016	
Sample Date:		7/20/2017		6/15/2016		6/15/2016		8/30/2016		6/15/2016		6/15/2016		8/30/2016	
Lab Sample ID:		JC47416-1		JC22334-4		JC22334-4R		JC26783-7		JC22334-5		JC22334-5R		JC26783-1	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	13.6		15.9		10.9		22.2		36.7		22.1		29.2	
Aroclor 1248	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1254	mg/kg	0.5	U	19.6		10.9		12.9		21.1		16.9		20.5	
Aroclor 1260	mg/kg	9.91		0.5	U	8.4		14.2		0.5	U	11.8		11.8	
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	23.51		35.5		30.16		49.3		57.8		**50.8**		**61.5**	
		w/ Permanganate Cleanup Procedure [1]				w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]				w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]	

Table 3
Summary of PCB Analytical Data - Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-5D-010617		TF-5D-020717		TF-5D-030617		TF-5D-033017		TF-5D-041417		TF-5D-042817		TF-6B-083016	
Sample Date:		1/6/2017		2/7/2017		3/6/2017		3/30/2017		4/14/2017		4/28/2017		8/30/2016	
Lab Sample ID:		JC35069-1		JC37014-1		JC38433-1		JC40133-1		JC41331-1		JC42594-1		JC26783-4	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	32.6		57.6		34.3		10.3		13.3		0.5	U	8.45	
Aroclor 1248	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	27		0.5	U
Aroclor 1254	mg/kg	14.2		23.5		0.5	U	7.73		0.5	U	13		0.5	U
Aroclor 1260	mg/kg	9.8		14.7		16.8		5.5		0.5	U	8.68		5.3	
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	**56.56**		**95.8**		**51.1**		23.51		13.3		48.68		13.72	
		w/ Permanganate Cleanup Procedure [1]		**w/ Permanganate Cleanup Procedure [1]**		**w/ Permanganate Cleanup Procedure [1]**		**w/ Permanganate Cleanup Procedure [1]**		**w/ Permanganate Cleanup Procedure [1]**		**w/ Permanganate Cleanup Procedure [1]**		**w/ Permanganate Cleanup Procedure [1]**	

Table 3
Summary of PCB Analytical Data - Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-6D-0416		TF-6D-041316		TF-6D-042616		TF-6D-050516		TF-6D-051216		TF-6D-052716		TF-6D-053116	
Sample Date:		4/5/2016		4/13/2016		4/26/2016		5/5/2016		5/12/2016		5/27/2016		5/31/2016	
Lab Sample ID:		JC17616-1		JC18303-1		JC19129-1		JC19787-1		JC20188-1		JC21237-1		JC21329-1	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	0.5	U	0.5	U	0.5	U	23.9		22.4		0.5	U	21.4	
Aroclor 1248	mg/kg	31.4		21.6		17.9		0.5	U	0.5	U	17.9		0.5	U
Aroclor 1254	mg/kg	16		0.5	U	14.5		18.1		0.5	U	5	U	21.2	
Aroclor 1260	mg/kg	0.5	U	12.5		14.3		12.5		15.0		15.3		12.7	
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	47.4		34.1		46.7		54.5		37.4		33.2		55.3	

Table 3
Summary of PCB Analytical Data - Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-6D-053116		TF-6D-061616		TF-6D-061616		TF-6D-062216		TF-6D-063016		TF-6D-070716		TF-6D-071116	
Sample Date:		6/7/2016		6/16/2016		6/16/2016		6/22/2016		6/30/2016		7/7/2016		7/11/2016	
Lab Sample ID:		JC21329-1		JC22334-8		JC22334-8R		JC22828-1		JC23438-1		JC23724-2		JC23844-3	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	21.2		18.2		7.78		0.5	U	10.7		8.47		9.32	
Aroclor 1248	mg/kg	5	U	0.5	U	0.5	U	23.6		0.5	U	0.5	U	0.5	U
Aroclor 1254	mg/kg	13.4		21.4		8.05		25.7		9.49		9.86		11.4	
Aroclor 1260	mg/kg	11.7		100.0	U	3.9		8.2		8.0		5.6		6.3	
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	46.3		39.6		19.73		**57.5**		28.17		23.92		27.06	
						w/ Permanganate Cleanup Procedure [1]		**w/ Permanganate Cleanup Procedure [1]**		**w/ Permanganate Cleanup Procedure [1]**		**w/ Permanganate Cleanup Procedure [1]**		**w/ Permanganate Cleanup Procedure [1]**	

Table 3
Summary of PCB Analytical Data - Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-7E-061516		TF-7E-061516		TF-7E-073016		TF-7F-061516		TF-7F-061516		TF-7F-083016	
Sample Date:		6/15/2016		6/15/2016		8/30/2016		6/15/2016		6/15/2016		8/30/2016	
Lab Sample ID:		JC22334-6		JC22334-6R		JC26783-3		JC22334-7		JC22334-7R		JC26783-2	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	17.1		16		7.59		35.2		13.9		15.6	
Aroclor 1248	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1254	mg/kg	26.1		16.3		12.9		27.7		15.9		20.3	
Aroclor 1260	mg/kg	0.5	U	0.5	U	5.3		15.6		13.4		7.5	
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	43.2		32.3		25.74		78.5		43.2		43.41	
				w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]				w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]	

Table 3
Summary of PCB Analytical Data - Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Notes:

Bold = PCB Concentration > 50 mg/kg after Permanganate Cleanup

Definitions:

mg/kg = milligrams per kilogram

PCB = Polychlorinated Biphenyl

RL = Reporting Limit

Data Qualifiers:

J = Indicates an estimated value

U = Not detected at the indicated Reporting Limit

Footnotes:

(1) Samples analyzed using SW-846 EPA Test Method 3665A Sulfuric Acid/Permanganate Cleanup

Table 4
Summary of Offsite LNAPL Disposal Quantities
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

LNAPL Waste Oil Disposal Summary (<50 ppm PCBs):

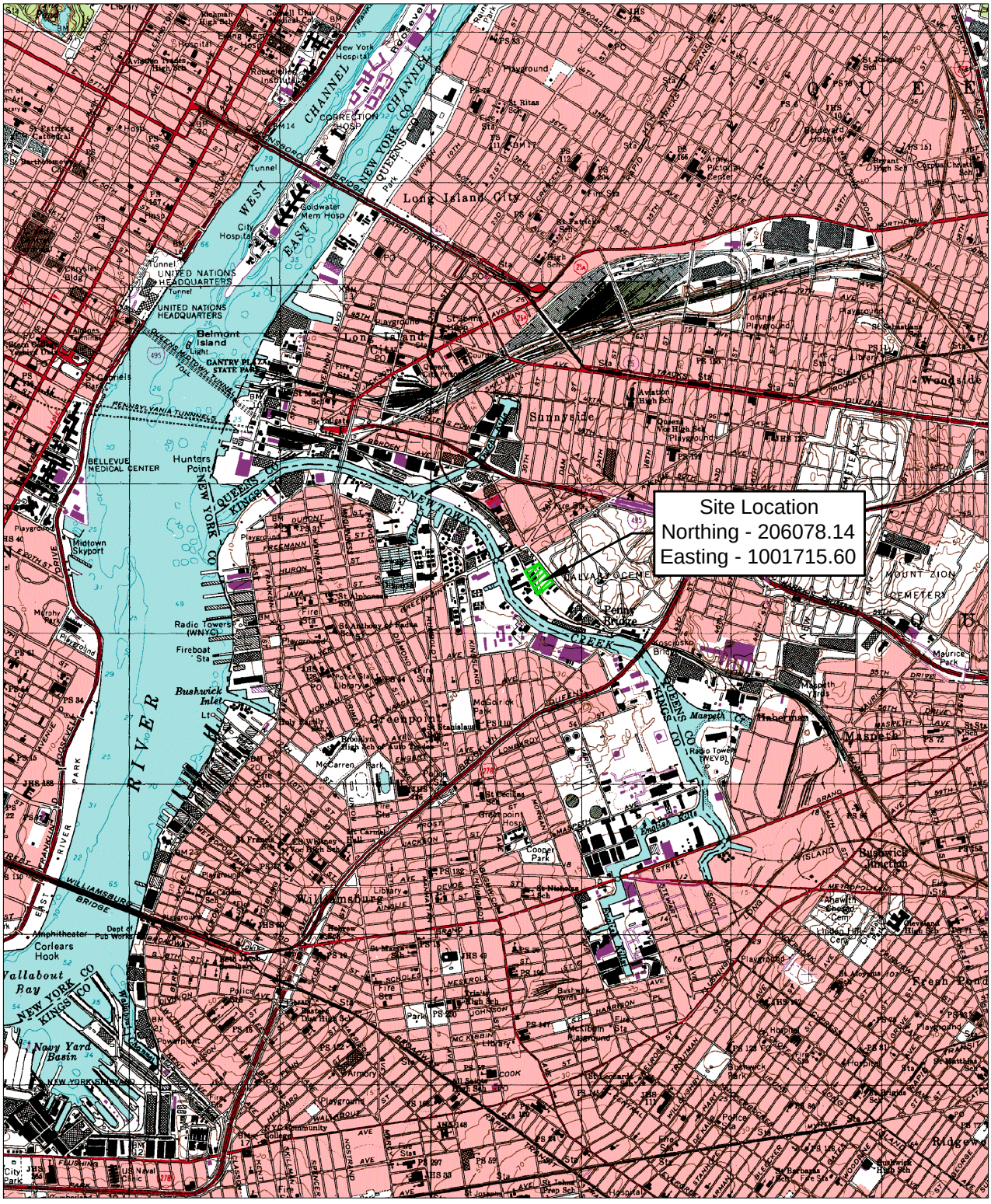
Date	BOL Number	T-801	T-1401	Total
12/18/15	0277706	5,000 gal	-	5,000 gal
01/11/16	0277790	-	4,767 gal	4,767 gal
02/02/16	0277924	5,032 gal	-	5,032 gal
02/04/16	0277942	-	4,900 gal	4,900 gal
03/02/16	278269	2,703 gal	2,592 gal	5,295 gal
03/17/16	0278392	4,613 gal	-	4,613 gal
03/31/16	278518	5,000 gal	-	5,000 gal
04/13/16	278574	5,000 gal	-	5,000 gal
04/27/16	278823	4,880 gal	-	4,880 gal
05/05/16	278889	-	5,000 gal	5,000 gal
05/12/16	278941	5,000 gal		5,000 gal
05/26/16	279054	4,998 gal		4,998 gal
05/31/16	099965	-	3,103 gal	3,103 gal
06/07/16	279111	4,810 gal		4,810 gal
07/01/16	283085	5,026 gal		5,026 gal
07/18/16	283124	4,900 gal		4,900 gal
07/26/16	283125		5,000 gal	5,000 gal
08/09/16	283446	4,800 gal		4,800 gal
08/31/16	283592	5,052 gal		5,052 gal
09/01/16	283600		4,280 gal	4,280 gal
09/22/16	283745	4,950 gal		4,950 gal
10/07/16	180754	4,964 gal		4,964 gal
10/17/16	180744		4,800 gal	4,800 gal
11/04/16	104535	5,500 gal		5,500 gal
11/29/16	104145	5,300 gal		5,300 gal
12/01/16	258577		4,565 gal	4,565 gal
12/20/16	258731	4,869 gal		4,869 gal
01/06/17	258823	4,900 gal		4,900 gal
01/16/17	258893	4,875 gal		4,875 gal
01/25/17	259005	4,850 gal		4,850 gal
02/07/17	259108	4,900 gal		4,900 gal
02/14/17	259137		4,900 gal	4,900 gal
02/16/17	259170	4,860 gal		4,860 gal
03/01/17	259226	4,960 gal		4,960 gal
03/17/17	280224	4,837 gal		4,837 gal
03/30/17	280327	4,960 gal		4,960 gal
04/10/17	280370	3,436 gal		3,436 gal
04/25/17	280486		5,000 gal	5,000 gal
04/28/17	280485	5,000 gal		5,000 gal
05/12/17	280663	4,081 gal		4,081 gal
05/30/17	280874	4,964 gal		4,964 gal
06/23/17	238017	4,936 gal		4,936 gal
07/14/17	238326		4,884 gal	4,884 gal
07/20/17	238302	4,964 gal		4,964 gal
08/25/17	179863	4,936 gal		4,936 gal
09/05/17	179864	4,195 gal		4,195 gal
09/15/17	179956		4,859 gal	4,859 gal
09/26/17	180208	4,936 gal		4,936 gal
10/12/17	284001	4,838 gal		4,838 gal
10/27/17	284113	4,892 gal		4,892 gal
11/15/17	284446	4,857 gal		4,857 gal
12/06/17	256622	4,636 gal		4,636 gal
01/03/18	256810	4,633 gal		4,633 gal
01/22/18	257014	5,032 gal		5,032 gal
02/08/18	257162	4,936 gal		4,936 gal
02/23/18	257266	4,936 gal		4,936 gal
03/09/18	257369		4,964 gal	4,964 gal
03/13/18	257409	4,857 gal		4,857 gal
03/30/18	276735	4,857 gal		4,857 gal
04/18/18	276899	4,645 gal		4,645 gal
05/10/18	ACV002088	4,810 gal		4,810 gal
05/29/18	ACV002204	4,969 gal		4,969 gal
06/08/18	ACV002257	5,068 gal		5,068 gal
06/19/18	ACV002312	4,857 gal		4,857 gal
06/25/18	ACV002336		5,068 gal	5,068 gal
07/13/18	ACV002428	4,946 gal		4,946 gal
08/14/18	ACV002699	4,998 gal		4,998 gal
08/29/18	ACV002794		4,657 gal	4,657 gal
08/31/18	ACV002809	4,857 gal		4,857 gal
09/25/18	ACV002977	4,998 gal		4,998 gal
10/12/18	ACV022156	5,000 gal		5,000 gal
11/12/18	ACV033513	5,028 gal		5,028 gal
12/07/18	ACV023259	4,964 gal		4,964 gal
01/04/19	ACV023419	4,964 gal		4,964 gal
01/10/19	ACV0234756		4,837 gal	4,837 gal
02/08/19	ACV022841	4,900 gal		4,900 gal
02/20/19	ACV022896		4,630 gal	4,630 gal
03/20/19	ACV045063	4,613 gal		4,613 gal
04/05/19	ACV045150		4,692 gal	4,692 gal
07/16/19	ACV044897	5,170 gal		5,170 gal
08/13/19	ACV045767	4,964 gal		4,964 gal
08/29/19	ACV059072		4,964 gal	4,964 gal
09/30/19	ACV059303	4,857 gal		4,857 gal
10/09/19	ACV059356		5,068 gal	5,068 gal
10/17/19	ACV059387	4,964 gal		4,964 gal
11/27/19	ACV041988	4,406 gal		4,406 gal
01/29/20	ACV058282		4,954 gal	4,954 gal
02/20/20	ACV058282	4,926 gal		4,926 gal
	TOTALS:	**324,365 gal**	**102,484 gal**	**426,849 gal**

LNAPL Waste Oil Disposal Summary (>/= 50 ppm PCBs):

Date	Manifest Number	TF-3D	TF-4D	TF-5D	TF-6D	Total
08/30/16	016113060 JJK	0 gal	0 gal	0 gal	50 gal	50 gal
08/08/17	015633471 JJK	0 gal	20 gal	35 gal	0 gal	55 gal
02/06/18	017955324 JJK	23 gal	0 gal	0 gal	0 gal	23 gal
	TOTALS:	**23 gal**	**20 gal**	**35 gal**	**50 gal**	**128 gal**

Prepared by: TCK 04/29/20
Reviewed by: VMW 04/30/20

FIGURES



Coordinate System: NAD 1983 StatePlane New York Long Island. Units: Foot US

0 1000 2000 4000

SCALE IN FEET

Amec Foster Wheeler PROJECT No. 3480160502 *DRAWING:* 3480160502-0600-SLM0-0000	
PREPARED/DATE: VMW 2/28/2017	*CHECKED/DATE:* TCK 2/28/2017

MACTEC

MACTEC Engineering and Consulting, P.C.
511 Congress Street, Suite 200
Portland, Maine 04112
(207) 775-5401

FIGURE 1
SITE LOCATION MAP
REVIEW AVENUE DEVELOPMENT SITES
RAD I AND RAD II
LONG ISLAND CITY, NEW YORK

P:\CADD\QUANTA\Review Avenue\working drawings\3480160502-0600-SLM0-0000.dwg Tue, 28 Feb 2017 - 11:21am vincent.whelan

P:\CADD\QUANTA\Review Avenue\working drawings\3480160502-0600-SP00-0000.dwg Thu, 16 Mar 2017 - 9:30am vincent.wheton Layout: SITE PLAN

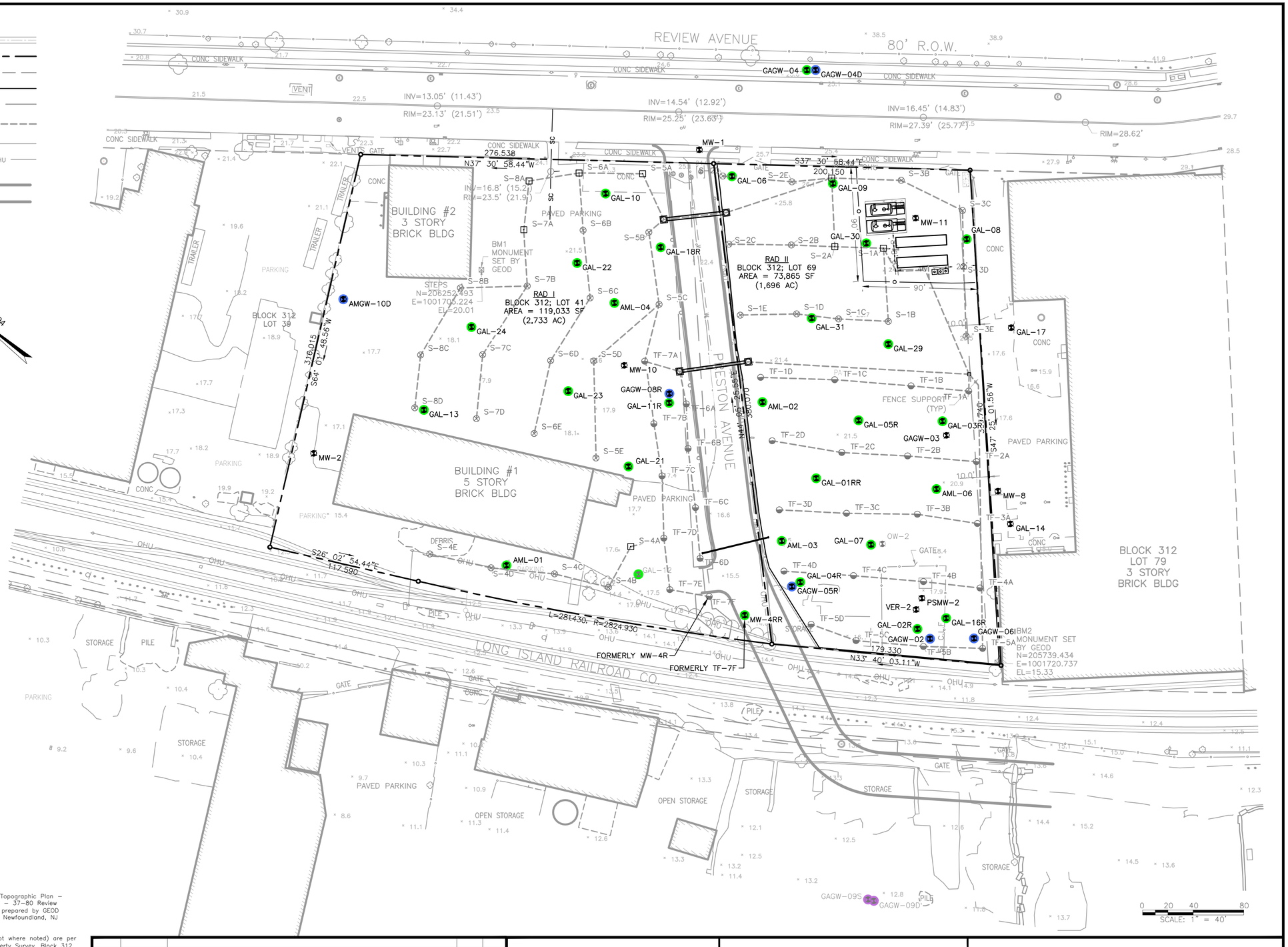
LEGEND

- FIRE HYDRANT
- UNKNOWN VALVE
- LIGHT POLE
- UTILITY POLE
- CATCHBASIN
- ROUND CATCHBASIN
- MONITORING WELL (INCLUDED IN LNAPL MONITORING PROGRAM) — AML–01
- MONITORING WELL (INCLUDED IN GROUNDWATER MONITORING PROGRAM) — GAGW–02
- MONITORING WELL (INCLUDED IN GROUNDWATER MONITORING PROGRAM IF ACCESSABLE) — GAGW–09S
- MONITORING WELL (NOT INCLUDED IN THESE LNAPL OR GROUNDWATER MONITORING PROGRAMS) — GAL–24
- EXISTING MONITORING WELL (STATUS UNKNOWN) — GAL–20
- PROTECTIVE POST
- LARGE TREE
- SMALL TREE
- GAS VALVE
- WATER VALVE
- WATER BOX
- ELECTRIC MANHOLE
- RAILROAD Elec. VAULT
- RAILROAD SIGNAL
- SANITARY MANHOLE
- WATER MANHOLE
- TELEPHONE MANHOLE
- UNKNOWN MANHOLE
- SKIMMER WELL — S–1B
- SKIMMER WELL WITH CONTROLLER — S–1A
- TOTAL FLUIDS WELL — TF–1A

LINE LEGEND

- RAIL ROAD TRACKS
- PROPERTY LINE
- ADJOINER PROPERTY LINE
- CURBING
- EASEMENT LINE
- REMEDIATION SYSTEM PROCESS PIPING
- CHAIN LINK FENCE
- OVERHEAD WIRES — OHU
- PRESTON AVE

NAD 83-96 N.Y.L.I. 3104



MONITORING WELL NOTES:

1) Suffixes:
   - Where a well is designated with the suffix "R", that well is a replacement for a previous well at that location.
   - Where a well is designated with the suffix "RR", that well is a replacement for a previous replacement well at that location.
2) MW–# are monitoring wells that were installed prior to the Remedial Investigation.
3) The designation GAGW–# indicates a groundwater monitoring well was originally located and installed by Golder Associates. The one exception is GAGW–04 which is screened across the LNAPL zone.
4) The designation GAL–# indicates a LNAPL monitoring well that was screened across the top of the water table.
5) Well GAGW–06I is a smear zone monitoring well.
6) The designation AMGW–# represents a GW monitorng well that was located and installed by AMEC.
7) The designation AML–# is a LNAPL monitoring well located and installed by Amec Foster Wheeler.
8) GAL–04R, GAL–11R, GAL–18R, GAGW–05R, AND GAGW–08R were installed by Waste Management.

NOTES:

1) This drawing references the "Topographic Plan – Block 312 Lots 41, 69 & 79 – 37–80 Review Avenue", dated 12/22/2014, prepared by GEOD Corporation, 24 Kanouse Rd., Newfoundland, NJ 07435.
2) Recovery well locations (except where noted) are per survey drawings named "Property Survey, Block 312 Lot 41, 37–80 Review Avenue" and "Property Survey, Block 312 Lot 69, 37–80 Review Avenue", by GEOD Corporation, dated January 29, 2015. Recovery Wells TF–3A and TF–7C were located via field measurement methods.
3) Horizontal datum is North American Datum of 1983 (NAD83 New York State Plane coordinates, Long Island zone 3104). Vertical datum is North American Vertical Datum of 1988 (NAVD88).

REV.	DATE	STATUS	PRPD BY	CHKD BY
1	03/15/17	PERIODIC REVIEW REPORT	VMW	TCK

MACTEC PROJECT No. 3480160502
DRAWING: 3480160502–0600–SP00–0000

PREPARED/DATE: VMW 01/22/16

CHECKED/DATE: TCK 01/22/16

MACTEC
MACTEC Engineering and Consulting, P.C.
511 Congress Street, Suite 200
Portland, Maine 04112
(207) 775–5401

FIGURE 2
SITE PLAN
REVIEW AVENUE DEVELOPMENT SITES
RAD I AND RAD II
LONG ISLAND CITY, QUEENS, NY 11101

APPENDIX A

Monthly Reports

Review Ave. LNAPL Recovery System Monthly Summary
April 2019

Work completed in April 2019:

Week of Mon 4/1 – Sat 4/6

- O&M site visits on 4/2 and 4/5
- Product load-out from T-1401 on 4/5
    - 4,692 GAL product removed (offsite) according to Bill of Lading
- Chemical delivery on 4/5
    - Two 55-gallon drums of Redux-330

Week of Sun 4/7 – Sat 4/13

- O&M site visit on 4/10

Week of Sun 4/14 – Sat 4/20

- O&M site visit on 4/17
- Product load-out from T-801 on 3/20
    - 4,613 GAL product removed (offsite) according to Bill of Lading
- Monthly LNAPL monitoring well gauging event on 3/20
- Chemical delivery on 3/20
    - Two 55-gallon drums of Redux-330

Week of Sun 4/21 – Tue 4/30

- O&M site visit on 4/24

O&M Activities:

Week of Mon 4/1 – Sat 4/6

- Operating on TF Zone 6
    - SVE active
- Changed bag filters and cleaned basket strainer on 4/2
- Water removal from T-1401 on 4/2
- Rebooted NAS on 4/2
- Cleaned strainers on 4/5
- Backwashed carbon on 4/5
- Transferred chemicals to drums on 4/5
- Water removal from T-1401 on 4/5

Week of Sun 4/7 – Sat 4/13

- Operating on TF Zone 6
    - SVE active
- Changed bag filters and cleaned strainers on 4/10
- Transferred chemicals to drums on 4/10
- Backwashed carbon on 4/10
- Water removal from T-1401 on 4/10

Week of Sun 4/14 – Sat 4/20

- Operating on TF Zone 1, switched to TF Zone 6 on 3/19
    - SVE active
- Changed bag filters and cleaned basket strainer on 3/19
- Water removal from T-801 and T-1401 on 3/19
- Well vault inspections on 3/19
- Product load-out from T-801 on 3/20
- Water removal from T-1401 on 3/20

Prepared By: VMW 5/8/19
Checked By: TCK

- Skimmer maintenance on 3/21
- Water removal from T-1401 on 3/22
- Skimmer maintenance on 3/22

Week of Sun 4/21 – Tue 4/30

- Operating on TF Zone 6
    - SVE active
- Changed bag filters and cleaned basket strainer on 3/27
- Backwash carbon on 3/27
- Water removal from T-1401 on 3/27
- Processed water from totes on 3/27
- Transferred chemicals to drums on 3/27

VER/TF System Production Results:

- TF System uptime for April was 707.47 Actual Run Hours out of 731.77 Available Hours, or 96.68%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
- Approximately 2,075 GAL Product Recovered in April from Zones 1 and 6
    - Average TF Product recovery rate for April was 66.9 GPD (calendar days), or 70.4 GPD (run days) accounting for system downtime.
- Approximately 293,226 GAL Product Recovered Total since system start-up.
- 4,613 GAL Product from T-801 disposed of offsite in April.
    - 295,078 GAL Product from T-801 disposed of Total since start-up.
- Approximately 261,253 GAL Effluent discharged in April
    - Average 8,428 GPD or 8,863 GPD considering downtime.
- 9,367,089 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 0.79%

Skimmer System Production Results:

- Skimmer System uptime for April was 248 Actual Run Hours out of 248 Available Hours, or 100%
    - Skimmer system running @ 8 hrs/day schedule (7AM – 3PM)
- Approximately 2,522 GAL Product Recovered in April.
    - Average Skimmer Product recovery rate for April was 81.3 GPD (calendar days), or 81.3 GPD (run days) accounting for system downtime.
- Approximately 88,797 GAL Product Recovered Total since start-up.
- 0 GAL Product from T-1401 disposed of offsite in April.
    - 82,806 GAL Product from T-1401 disposed of Total since start-up.

Total Product Recovery System Results:

- 4,597 GAL Product recovered in April.
    - Average Product recovery rate for April was 148 GPD.
- 382,023 GAL Product Recovered Total since system start-up.
- 4,613 GAL Product shipped off-site for disposal in April (see attached summary table)
- 377,884 GAL Product shipped off-site for disposal since system start-up as of the end of April 2019 (see attached summary table)
- 768,286 kWh Energy Consumption Total from system start-up through April 2019

Prepared By: VMW 5/8/19
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
April 2019

- 22,988 kWh Energy Consumption for April
- 8.441 kWh/GAL Average Energy Consumed per GAL of Product Recovered for April

Prepared By: VMW 5/8/19
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
May 2019

Work completed in May 2019:

Week of Wed 5/1 – Sat 5/4

- O&M site visit on 5/2
- Installed permanent compressed air line for bag filter blowout
- Transfer pump hose line replaced

Week of Sun 5/5 – Sat 5/11

- O&M site visit on 5/8

Week of Sun 5/12 – Sat 5/18

- O&M site visits on 5/13, 5/14 and 5/15
- Carbon change-out completed by Carbon Filtration Systems, Inc. on 5/14
- Replaced two bag filter housing units (line 1) on 5/15
- OWS cleanout by ACV Environment on 5/15
    - Disposal of 1,500 GAL of Non-Haz / Non-TSCA water from cleanout
- 2Q 2019 Effluent Discharge Compliance Sampling completed 5/16

Week of Sun 5/19 – Sat 5/25

- O&M site visit on 5/20
- Monthly LNAPL monitoring well gauging event on 5/24

Week of Sun 5/26 – Fri 5/31

- O&M site visit on 5/29

O&M Activities:

Week of Wed 5/1 – Sat 5/4

- Operating on TF Zone 5
    - SVE inactive
- Changed bag filters and cleaned y-strainer on 5/2
    - Bag filter housing failure (on line 1)
- Water removal from T-801 and T-1401 on 5/2
- Backwashed carbon on 5/2
- TF Zone 5 inspections on 5/2
    - Identified leaks in TF-5A & 5C vacuum lines
- Processed water from totes on 5/2

Week of Sun 5/5 – Sat 5/11

- Operating on TF Zone 5
    - SVE active
- TF Zone 4 & 5 inspections on 5/8
    - Sealed leaks in vacuum lines
- Water removal from T-801 and T-1401 on 5/8
- Backwashed carbon on 5/8
- Repair backwash meter and product pump on 5/8
- Changed bag filters and cleaned y-strainer on 5/8
    - Bag filter housing failure (line 2)
    - Attempt to repair

Week of Sun 5/12 – Sat 5/18

- Operating on TF Zone 5
    - SVE active

Prepared By: VMW 6/20/19
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
May 2019

- Blow down carbon vessels on 5/13
- Disconnect & remove bag filter housings on 5/13 & 5/14
- Carbon changeout (both vessels) on 5/14
- Flushed TF product line to the separator on 5/14
- Sealed TF-3C & 4C riser pipes on 5/14
- Pick up four bag filter replacement housing units on 5/14
- Clean effluent flow meter on 5/14
- OWS cleanout on 5/15
- Replace bag filter housing units on 5/15
- Piping adjustments on 5/15
- Troubleshoot Magmeter issue on 5/15
- Repair hoses on 5/15

Week of Sun 5/19 – Sat 5/25

- Operating on TF Zone 5
    - SVE active
- Changed bag filters and cleaned strainers on 5/20
- Water removal from T-801 and T-1401 on 5/20
- Backwash carbon on 5/20
    - LGAC-1101 & 1102 running in parallel
- Processed water from totes on 5/20
- Disposed of two 55-gal bags of MSW (non-haz) waste on 5/20

Week of Sun 5/26 – Fri 5/31

- Operating on TF Zone 5, switched to TF Zone 4 on 5/29
    - SVE active
- Water removal from T-801 and T-1401 on 5/29
- Backwashed carbon on 5/29
    - Switch active vessel to LGAC-1101 only
- Changed bag filters and cleaned strainers on 5/29
- Processed water from totes on 5/29

VER/TF System Production Results:

- TF System uptime for May was 558.67 Actual Run Hours out of 694.12 Available Hours, or 80.49%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
    - System shut down on 5/8 due to bag filter housing unit failure; restarted on 5/15 after OWS cleanout, carbon changeout and housing unit replacement.
- Approximately 431 GAL Product Recovered in May from Zone 5 (some Zone 4)
    - Average TF Product recovery rate for May was 13.9 GPD (calendar days), or 18.5 GPD (run days) accounting for system downtime.
    - Product recovery low due to high water recovery/removal
- Approximately 294,639 GAL Product Recovered Total since system start-up.
- 0 GAL Product from T-801 disposed of offsite in May.
    - 295,078 GAL Product from T-801 disposed of Total since start-up.
- Approximately 118,990 GAL Effluent discharged in May
    - Average 3,838 GPD at a rate of 5,112 GPD considering allowable downtime.
- 9,794,656 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 0.36%

Prepared By: VMW 6/20/19
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
May 2019

Skimmer System Production Results:

- Skimmer System uptime for May was 248 Actual Run Hours out of 248 Available Hours, or 100%
    - Skimmer system running @ 8 hrs/day schedule (7AM – 3PM)
- Approximately -273 GAL Product Recovered in May.
    - Average Skimmer Product recovery rate for May was -8.8 GPD (calendar days), or -8.8 GPD (run days) accounting for system downtime.
    - Negative product recovery due to high water recovery and subsequent removal from tanks
- Approximately 90,265 GAL Product Recovered Total since start-up.
- 0 GAL Product from T-1401 disposed of offsite in May.
    - 87,498 GAL Product from T-1401 disposed of Total since start-up.

Total Product Recovery System Results:

- 158 GAL Product recovered in May.
    - Average Product recovery rate for May was 5.1 GPD.
- 384,904 GAL Product Recovered Total since system start-up.
- 0 GAL Product shipped off-site for disposal in May (see attached summary table)
- 382,576 GAL Product shipped off-site for disposal since system start-up as of the end of May 2019 (see attached summary table)
- 780,280 kWh Energy Consumption Total from system start-up through May 2019
- 11,994 kWh Energy Consumption for May
- 76.042 kWh/GAL Average Energy Consumed per GAL of Product Recovered for May

Prepared By: VMW 6/20/19
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
June 2019

Work completed in June 2019:

Week of Sat 6/1 – Sat 6/8

- O&M site visit on 6/5
- Eight 55-gal drums of spent bag filters & PPE disposed of on 6/5
- Additional LNAPL monitoring well gauging event on 6/6

Week of Sun 6/9 – Sat 6/15

- O&M site visit on 6/12

Week of Sun 6/16 – Sat 6/22

- O&M site visits on 6/17, 6/19 and 6/20
- Two bag filter housing units replaced by Aarco on 6/19 & 6/20

Week of Sun 6/23 – Sun 6/30

- O&M site visits on 6/25 and 6/27
- Monthly LNAPL monitoring well gauging event on 6/28

O&M Activities:

Week of Sat 6/1 – Sat 6/8

- Operating on TF Zone 4
    - SVE inactive
- Transferred chemicals to drums on 6/5
- Changed bag filters and cleaned y-strainer on 6/5
- Water removal from T-801 and T-1401 on 6/5
- Backwashed carbon on 6/5
- Processed water from totes on 6/5
- Refilled eyewash stations on 6/5

Week of Sun 6/9 – Sat 6/15

- Operating on TF Zone 3 & 4
    - SVE inactive
- Backwashed carbon on 6/12
- Processed water from totes on 6/12
- Belt skimmer maintenance on 6/12
- Diaphragm (product transfer) pump maintenance on 6/12
- Changed bag filters and cleaned y-strainer on 6/12

Week of Sun 6/16 – Sat 6/22

- Operating on TF Zones 3 & 4 until 6/20
- Switched to TF Zones 4 & 5 on 6/20
- Changed bag filters on 6/17
- Backwashed carbon on 6/17
- Water removal from T-801 and T-1401 on 6/19
- Replaced FIT-701 influent flow meter on 6/19
- Replaced diaphragm (product transfer) pump on 6/19
- Cleaned TF pumps 3B, 3C, 4A, 4B and 5C on 6/19
- Replaced bag filter units and lines on 6/19 and 6/20
- Setup biocide pump on 6/20
- Installed new TF pumps on 6/20

Prepared By: VMW 4/6/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
June 2019

Week of Sun 6/23 – Sun 6/30

- Operating on TF Zones 4 & 5
  - Added Zone 1 on 6/28
- Continued cleaning, installing and testing new TF pumps on 6/25
- Repair system flowmeter on 6/25
- SVE duct repair on 6/25
- Troubleshoot and repair belt skimmer on 6/25
- Repaired product transfer pump on 6/27
- Flush and repair line to product pump on 6/27
- Remove, clean and repair injection quill on 6/27

VER/TF System Production Results:

- TF System uptime for June was 576.03 Actual Run Hours out of 659.26 Available Hours, or 87.38%
  - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
  - System shut down on 6/12 due to clogged bag filters; restarted on same day after carbon backwash and bag filter changeout
  - System shut down on 6/15 due to clogged bag filters; restarted on 6/17 after carbon backwash and bag filter changeout
  - System shut down on 6/18 due to high water level in T-801. System down for extended maintenance until 6/20.
  - System shut down on 6/27 due to high water level alarm in OWS and restarted same day following product transfer pump repairs.
- Approximately 1,446 GAL Product Recovered in June from Zones 3, 4, 5 (and some Zone 1)
  - Average TF Product recovery rate for June was 48.2 GPD (calendar days), or 60.2 GPD (run days) accounting for system downtime.
- Approximately 296,085 GAL Product Recovered Total since system start-up.
- 0 GAL Product from T-801 disposed of offsite in June.
  - 295,078 GAL Product from T-801 disposed of Total since start-up.
- Approximately 246,270 GAL Effluent discharged in June
  - Average 8,209 GPD at a rate of 10,260 GPD considering allowable downtime.
- 10,040,927 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 0.59%

Skimmer System Production Results:

- Skimmer System uptime for June was 240 Actual Run Hours out of 240 Available Hours, or 100%
  - Skimmer system running @ 8 hrs/day schedule (7AM – 3PM)
- Approximately 1,246 GAL Product Recovered in June.
  - Average Skimmer Product recovery rate for June was 41.5 GPD (calendar days), or 41.5 GPD (run days) accounting for system downtime.
- Approximately 91,512 GAL Product Recovered Total since start-up.
- 0 GAL Product from T-1401 disposed of offsite in June.
  - 87,498 GAL Product from T-1401 disposed of Total since start-up.

Total Product Recovery System Results:

- 2,692 GAL Product recovered in June.

Prepared By: VMW 4/6/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
June 2019

- Average Product recovery rate for June was 89.7 GPD.

- 387,597 GAL Product Recovered Total since system start-up.
- 0 GAL Product shipped off-site for disposal in June (see attached summary table)
- 382,576 GAL Product shipped off-site for disposal since system start-up as of the end of June 2019 (see attached summary table)
- 789,331 kWh Energy Consumption Total from system start-up through June 2019
- 9,051 kWh Energy Consumption for June
- 3.362 kWh/GAL Average Energy Consumed per GAL of Product Recovered for June

Prepared By: VMW 4/6/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
July 2019

Work completed in July 2019:

Week of Mon 7/1 – Sat 7/6

- O&M site visit on 7/2
- Reinstalled belt skimmer on OWS on 7/2

Week of Sun 7/7 – Sat 7/13

- O&M site visits on 7/8 and 7/11
- Sampled T-801 and T-1401 for PCB analysis on 7/8
    - 41 mg/kg Total PCBs in T-801
    - 6.6 mg/kg Total PCBs in T-1401
- Semi-annual groundwater sampling event on 7/10
- LNAPL monitoring well gauging event on 7/11

Week of Sun 7/14 – Sat 7/20

- O&M site visits on 7/14, 7/16 and 7/17
- Product load-out from T-801 on 7/16
    - 5,170 GAL product removed (offsite) according to Bill of Landing

Week of Sun 7/21 – Sat 7/27

- O&M site visit on 7/24
- Monthly LNAPL monitoring well gauging event on 7/26

Week of Sun 7/28 – Wed 7/31

- O&M site visit on 7/31

O&M Activities:

Week of Mon 7/1 – Sat 7/6

- Operating on TF Zone 4 & 5
    - SVE inactive
- Changed bag filters and cleaned basket strainer on 7/2
- Water removal from T-801 and T-1401 on 7/2
- Backwashed carbon on 7/2
- Chemical delivery on 7/2
- Cleaned TF pumps on 7/2

Week of Sun 7/7 – Sat 7/13

- Operating on TF Zone 4 & 5
    - SVE inactive
- Sampled LNAPL tanks for PCB analysis on 7/8
- Backwashed carbon on 7/8
- Clean check valves on transfer pump on 7/8
- Processed water from totes on 7/8
- Changed bag filters and cleaned basket strainer on 7/8
- Organized control room on 7/8
- Switched active carbon vessel to LGAC-1102 on 7/9

Week of Sun 7/14 – Sat 7/20

- Operating on TF Zones 4 & 5
    - SVE inactive
- Onsite to restore communications with system on 7/14 due to blackouts previous day

Prepared By: VMW 4/7/20
Checked By: TCK

- Onsite for product load-out from T-801 on 7/16
- Cut up washed chemical drums and loaded into dumpster with other site trash on 7/16
- Changed bag filters and cleaned basket strainer on 7/17
- Backwashed carbon on 7/17
- Processed water from totes on 7/17
- Installed and testing TF pumps on 7/17

Week of Sun 7/21 – Sat 7/27

- Operating on TF Zones 4 & 5 until 7/24
- Switched to TF Zones 1 & 2 on 7/24
- Continued cleaning, installing and testing TF pumps on 7/24
- Changed bag filters and cleaned basket strainer on 7/24
- Backwashed carbon on 7/24
- Transferred chemicals to drums on 7/24

Week of Sun 7/28 – Wed 7/31

- Operating on TF Zones 1 & 2 until 7/30
- Switched to TF Zones 2 & 3 on 7/30
- Continued cleaning, installing and testing new TF pumps on 7/31
- Changed bag filters and cleaned basket strainer on 7/31
- Backwashed carbon on 7/31
- Water removal from T-1401 on 7/31

VER/TF System Production Results:

- TF System uptime for July was 679.88 Actual Run Hours out of 720.13 Available Hours, or 94.41%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
    - System shut down on 7/1 due to clogged product pump strainer; restarted on 7/2 following pump maintenance
    - System down on 7/8 for routine maintenance, on 7/16 for loadout and on 7/17 for routine maintenance
    - System shut down on 7/30 due clogged basket strainer; restarted 7/31 following maintenance.
- Approximately 3,365 GAL Product Recovered in July from Zones 4 & 5 (some from TF Zones 1, 2 & 3)
    - Average TF Product recovery rate for July was 108.6 GPD (calendar days), or 118.8 GPD (run days) accounting for system downtime.
- Approximately 299,450 GAL Product Recovered Total since system start-up.
- 5,170 GAL Product from T-801 disposed of offsite in July.
    - 300,248 GAL Product from T-801 disposed of Total since start-up.
- Approximately 254,873 GAL Effluent discharged in July
    - Average 8,222 GPD at an avg rate of 8,997 GPD considering allowable downtime.
- 10,295,800 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 1.32%

Prepared By: VMW 4/7/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
July 2019

Skimmer System Production Results:

- Skimmer System uptime for July was 248 Actual Run Hours out of 248 Available Hours, or 100%
    - Skimmer system running @ 8 hrs/day schedule (7AM – 3PM)
- Approximately 579 GAL Product Recovered in July.
    - Average Skimmer Product recovery rate for July was 18.7 GPD (calendar days), or 18.7 GPD (run days) accounting for system downtime.
    - Low product recovery due to high water recovery/removal
- Approximately 92,901 GAL Product Recovered Total since start-up.
- 0 GAL Product from T-1401 disposed of offsite in July.
    - 87,498 GAL Product from T-1401 disposed of Total since start-up.

Total Product Recovery System Results:

- 3,945 GAL Product recovered in July.
    - Average Product recovery rate for July was 127.2 GPD.
- 391,541 GAL Product Recovered Total since system start-up.
- 5,170 GAL Product shipped off-site for disposal in July (see attached summary table)
- 387,746 GAL Product shipped off-site for disposal since system start-up as of the end of July 2019 (see attached summary table)
- 798,127 kWh Energy Consumption Total from system start-up through July 2019
- 8,796 kWh Energy Consumption for July
- 2.230 kWh/GAL Average Energy Consumed per GAL of Product Recovered for July

Prepared By: VMW 4/7/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
August 2019

Work completed in August 2019:

Week of Thu 8/1 – Sat 8/3

- O&M site visit on 8/2

Week of Sun 8/4 – Sat 8/10

- O&M site visits on 8/5, 8/6 and 8/7
- Carbon change-out completed by Carbon Filtration Systems, Inc. on 8/6
- OWS cleanout by Allstate Power Vac, Inc on 8/7

Week of Sun 8/11 – Sat 8/17

- O&M site visits on 8/13, 8/14 and 8/16
- Product load-out from T-801 on 8/13
    - 4,964 GAL product removed (offsite) according to Bill of Lading
- Sampled T-801 and T-1401 for PCB analysis on 8/13
    - 9.94 mg/kg Total PCBs in T-801
    - No PCBs detected in T-1401
- 3Q 2019 Effluent Discharge Compliance Sampling completed 8/14

Week of Sun 8/18 – Sat 8/24

- O&M site visit on 8/19 and 8/21
- Monthly LNAPL monitoring well gauging event on 8/22

Week of Sun 8/25 – Sat 8/31

- O&M site visit on 8/29
- Product load-out from T-1401 on 8/29
    - 4,964 GAL product removed (offsite) according to Bill of Lading

O&M Activities:

Week of Thu 8/1 – Sat 8/3

- Operating on TF Zones 2 & 3 until 8/2
    - SVE inactive
    - Switched to TF Zones 1 & 2 on 8/2
- Cleaned basket strainer on 8/2
- Blow down carbon vessel LGAC-1101 on 8/2

Week of Sun 8/4 – Sat 8/10

- Operating on TF Zones 1 & 2
    - SVE inactive
- Processed water from totes on 8/5
- Blow down carbon vessel LGAC-1102 on 8/5
- Carbon change-out completed on 8/6
- OWS cleaning completed on 8/7
- Replaced product transfer pump on 8/7
- Cleaned effluent flow meter and replaced metering cartridge on 8/7
- Measured and reinstalled belt skimmer on 8/7
- Switched active carbon vessel to LGAC-1101 on 8/7
- Changed bag filters and cleaned strainers on 8/7

Week of Sun 8/11 – Sat 8/17

- Operating on TF Zones 1 & 2
    - SVE inactive

Prepared By: VMW 4/8/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
August 2019

- Sampled LNAPL tanks for PCBs on 8/13
- Water removal from T-801 & T-1401 on 8/13
- Product load-out from T-801 on 8/13
- Replaced failed product transfer pump with old pump on 8/13
- Changed bag filters and cleaned strainers on 8/13
- Quarterly Effluent Compliance Sampling completed on 8/14
- Cleaned and replaced TF pumps on 8/14
- Switched active carbon vessel to LGAC-1102 on 8/14
- Replaced failed product transfer pump with another old pump on 8/16

Week of Sun 8/18 – Sat 8/24

- Operating on TF Zones 1 & 2
    - SVE inactive
- Water removal from T-801 & T-1401 on 8/19
- Replaced failed product transfer pump with new pump from Grainger on 8/19
- Pump installed on 8/19 failed the same day, replaced with new pump on 8/21
- Well gauging complete on 8/22

Week of Sun 8/25 – Sat 8/31

- Operating on TF Zones 1 & 2 until 8/28
    - SVE inactive
    - Switched to TF Zones 4 & 5 on 8/28
    - Switched to TF Zones 3, then 4 & 5 on 8/31
- Water removal from T-801 & T-1401 on 8/29
- Product load-out from T-1401 on 8/29
- Changed bag filters and cleaned strainers on 8/29
- Backwashed carbon on 8/29
- Replaced NAS hard drive #2 on 8/29

VER/TF System Production Results:

- TF System uptime for August was 489.12 Actual Run Hours out of 633.11 Available Hours, or 77.26%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
    - System shut down on 8/2 due to clogged basket strainer; restarted same day following cleanout and LGAC blowdown.
    - System down from 8/5 to 8/7 for carbon changeout (8/6) and OWS cleaning (8/7)
    - System shut down on 8/11 due to high level alarm in LNAPL Tank T-801; restarted 8/13 following product loadout from T-801.
    - System shut down on 8/15 via high product level alarm in OWS due to failed product transfer pump; restarted on 8/16 after replacing the product transfer pump. System shut down again on 8/16 due to high product level alarm in OWS day tank; restarted on 8/19 after replacing product transfer pump. New pump failed on 8/19 and the system was restarted on 8/21 after replacing with another new pump.
- Approximately 5,132 GAL Product Recovered in August from Zones 1 & 2 (some from TF Zones 3, 4 & 5)
    - Average TF Product recovery rate for August was 165.6 GPD (calendar days), or 251.8 GPD (run days) accounting for system downtime.
- Approximately 304,582 GAL Product Recovered Total since system start-up.
- 4,964 GAL Product from T-801 disposed of offsite in August.
    - 305,212 GAL Product from T-801 disposed of Total since start-up.

Prepared By: VMW 4/8/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
August 2019

- Approximately 215,043 GAL Effluent discharged in August
    - Average 6,937 GPD at an avg rate of 10,552 GPD considering allowable downtime.
- 10,510,843 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 2.39%

Skimmer System Production Results:

- Skimmer System uptime for August was 248 Actual Run Hours out of 248 Available Hours, or 100%
    - Skimmer system running @ 8 hrs/day schedule (7AM – 3PM)
- Approximately 1,959 GAL Product Recovered in August.
    - Average Skimmer Product recovery rate for August was 63.2 GPD (calendar days), or 63.2 GPD (run days) accounting for system downtime.
- Approximately 94,050 GAL Product Recovered Total since start-up.
- 4,964 GAL Product from T-1401 disposed of offsite in August.
    - 92,462 GAL Product from T-1401 disposed of Total since start-up.

Total Product Recovery System Results:

- 7,091 GAL Product recovered in August.
    - Average Product recovery rate for August was 228.7 GPD.
- 398,632 GAL Product Recovered Total since system start-up.
- 9,928 GAL Product shipped off-site for disposal in August (see attached summary table)
- 397,674 GAL Product shipped off-site for disposal since system start-up as of the end of August 2019 (see attached summary table)
- 806,661 kWh Energy Consumption Total from system start-up through August 2019
- 8,534 kWh Energy Consumption for August
- 1.204 kWh/GAL Average Energy Consumed per GAL of Product Recovered for August

Prepared By: VMW 4/8/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
September 2019

Work completed in September 2019:

Week of Sun 9/1 – Sat 9/7

- O&M site visit on 9/4

Week of Sun 9/8 – Sat 9/14

- O&M site visit on 9/11

Week of Sun 9/15 – Sat 9/21

- O&M site visit on 9/18

Week of Sun 9/22 – Sat 9/28

- O&M site visits on 9/24, 9/25 and 9/27
- Monthly LNAPL monitoring well gauging event on 9/24, 9/25 and 9/27

Week of Sun 9/29 – Mon 9/30

- O&M site visit on 9/30
- Product load-out from T-801 on 9/30
    - 4,857 GAL product removed (offsite) according to Bill of Lading

O&M Activities:

Week of Sun 9/1 – Sat 9/7

- Operating on TF Zones 1 & 2, 3 & 7, and 4 & 5
    - Zones 1 & 2 for 10 hrs/day
    - Zone 3 for 3.5 hrs/day, Zone 7 for 3.5 hrs/day beginning 9/4
    - Zones 4 & 5 for 10 hrs/day
- Replaced product transfer pump on 9/4
- Reset modem and camera on 9/4
- Changed bag filters and cleaned basket strainer on 9/4
- Backwashed carbon on 9/4
- TF Zone 7 vault/pump inspections on 9/4
- Processed water from totes on 9/4
- Chemical delivery on 9/4
- Transferred chemicals to drums on 9/4

Week of Sun 9/8 – Sat 9/14

- Operating on TF Zones 1 & 2, 3 & 7, and 4 & 5
    - Zones 1 & 2 for 10 hrs/day
    - Zones 3 & 7 for 3.5 hrs/day
    - Zones 4 & 5 for 10 hrs/day
- Repaired TF-7F vault leak on 9/11
- Skimmer vault/pump inspections on 9/11
- Changed bag filters and cleaned basket strainer on 9/11
- Switched active carbon vessel to LGAC-1102 on 9/11

Week of Sun 9/15 – Sat 9/21

- Operating on TF Zones 1 & 2, 3 & 7, and 4 & 5
    - Zones 1 & 2 for 10 hrs/day
    - Zones 3 & 7 for 3.5 hrs/day
    - Zones 4 & 5 for 10 hrs/day
- Skimmer vault/pump inspections & cleaning on 9/18
- Backwashed carbon on 9/18

Prepared By: VMW 4/9/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
September 2019

- Changed bag filters and cleaned basket strainer on 9/18
- Housekeeping in office enclosure completed on 9/18
- Processed water from totes on 9/18

Week of Sun 9/22 – Sat 9/28

- Operating on TF Zones 1 & 2, 3 & 7, and 4 & 5
    - Zones 1 & 2 for 10 hrs/day
    - Zones 3 & 7 for 3.5 hrs/day, Zone 7 off after 9/25
    - Zones 4 & 5 for 10 hrs/day
- Monthly well gauging on 9/24
- Backwashed carbon on 9/24
- Labeled site equipment & storage areas on 9/24
- TF vault/pump inspections & cleaning on 9/24 and 9/25
- General site and enclosure housekeeping performed on 9/24 and 9/25
- Monthly well gauging continued on 9/25
- Skimmer vault/pump inspections & cleaning on 9/25
- Water removal from T-801 on 9/25
- Processed water from totes on 9/25
- Cleaned basket strainer on 9/25
- Patched fractured asphalt next to SVE container on 9/25
- Viscosity testing of product in OWS day tank completed on 9/25
- Monthly well gauging completed on 9/27

Week of Sun 9/29 – Mon 9/30

- Operating on TF Zones 1 & 2, 3, and 4 & 5
    - Zones 1 & 2 for 10 hrs/day
    - Zone 3 for 3.5 hrs/day
    - Zones 4 & 5 for 10 hrs/day
- Product load-out from T-801 on 9/30

VER/TF System Production Results:

- TF System uptime for September was 612.27 Actual Run Hours out of 654.91 Available Hours, or 93.49%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
    - System timers set to run 23.5 hrs/day (12:30 am to midnight)
    - System shut down on 9/23 due to low air pressure alarm; restarted on 9/24.
- Approximately 3,289 GAL Product Recovered in September from Zones 1, 2, 3, 4, 5 and 7
    - Average TF Product recovery rate for September was 109.6 GPD (calendar days), or 128.9 GPD (run days) accounting for system downtime.
- Approximately 307,871 GAL Product Recovered Total since system start-up.
- 4,857 GAL Product from T-801 disposed of offsite in September.
    - 310,069 GAL Product from T-801 disposed of Total since start-up.
- Approximately 235,569 GAL Effluent discharged in September
    - Average 7,852 GPD at an avg rate of 9,234 GPD considering downtime.
- 10,746,412 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 1.40%

Prepared By: VMW 4/9/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
September 2019

Skimmer System Production Results:

- Skimmer System uptime for September was 240 Actual Run Hours out of 240 Available Hours, or 100%
    - Skimmer system running @ 8 hrs/day schedule (7AM – 3PM)
- Approximately 3,605 GAL Product Recovered in September.
    - Average Skimmer Product recovery rate for September was 120.2 GPD (calendar days), or 120.2 GPD (run days) accounting for system downtime.
- Approximately 97,654 GAL Product Recovered Total since start-up.
- 0 GAL Product from T-1401 disposed of offsite in September.
    - 92,462 GAL Product from T-1401 disposed of Total since start-up.

Total Product Recovery System Results:

- 6,893 GAL Product recovered in September.
    - Average Product recovery rate for September was 229.8 GPD.
- 405,526 GAL Product Recovered Total since system start-up.
- 4,857 GAL Product shipped off-site for disposal in September (see attached summary table)
- 402,531 GAL Product shipped off-site for disposal since system start-up as of the end of September 2019 (see attached summary table)
- 817,120 kWh Energy Consumption Total from system start-up through September 2019
- 10,459 kWh Energy Consumption for September
- 1.517 kWh/GAL Average Energy Consumed per GAL of Product Recovered for September

Prepared By: VMW 4/9/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
October 2019

Work completed in October 2019:

Week of Tue 10/1 – Sat 10/5

- O&M site visit on 10/3
- PRP Group site visit on 10/4

Week of Sun 10/6 – Sat 10/12

- O&M site visit on 10/9
- Product load-out from T-1401 on 10/9
    - 5,068 GAL product removed (offsite) according to Bill of Lading

Week of Sun 10/13 – Sat 10/19

- O&M site visits on 10/15, 10/17 and 10/18
- Product load-out from T-801 on 10/17
    - 4,964 GAL product removed (offsite) according to Bill of Lading

Week of Sun 10/20 – Sat 10/26

- O&M site visits on 10/21, 10/23 and 10/24
- Monthly LNAPL monitoring well gauging event on 10/24
- LNAPL interface tension sampling on 10/24

Week of Sun 10/27 – Thu 10/31

- O&M site visits on 10/29 and 10/30

O&M Activities:

Week of Tue 10/1 – Sat 10/5

- Operating on TF Zones 1 & 2, 3, 4 & 5 and 7
    - Zones 1 & 2 for 10 hrs/day
    - Zone 3 for 3.5 hrs/day
    - Zones 4 & 5 for 10 hrs/day
    - Zone 7 intermittently
    - SVE active
- Changed bag filters and cleaned basket strainer on 10/3
- Replaced bag filter unit lids on 10/3
- Viscosity testing of product in OWS day tank on 10/3
- Backwashed carbon on 10/3
- Labeled site facilities, equipment and storage areas on 10/3
- Processed water from totes on 10/3
- Removed garbage from site on 10/3

Week of Sun 10/6 – Sat 10/12

- Operating on TF Zones 1 & 2, 3, 4 & 5 and 7
    - Zones 1 & 2 for 10 hrs/day
    - Zone 3 for 3.5 hrs/day
    - Zones 4 & 5 for 10 hrs/day
    - Zone 7 continuously beginning on 10/9
    - SVE active
- Product load-out from T-1401 on 10/9
- Skimmer pump maintenance on 10/9
- Changed bag filters and cleaned basket strainer on 10/9
- Backwashed carbon on 10/9

Prepared By: VMW 4/17/20
Checked By: TCK

- Processed water from totes on 10/9
- Re-set tube skimmer in OWS on 10/9
- Viscosity testing of product in OWS day tank on 10/9

Week of Sun 10/13 – Sat 10/19

- Operating on TF Zones 1 & 2, 3, 4 & 5 and 7
    - Zones 1 & 2 for 10 hrs/day
    - Zone 3 for 3.5 hrs/day
    - Zones 4 & 5 for 10 hrs/day
    - Zone 7 continuously
    - SVE active
- Changed bag filters and cleaned basket strainer on 10/15
- Replaced o-ring on LGAC influent hose on 10/15
- Skimmer pump maintenance on 10/15
- Backwashed carbon on 10/15
- Processed water from totes on 10/15
- Viscosity testing of product in OWS day tank on 10/15
- Water removal from T-801 on 10/15
- Product load-out from T-801 on 10/17
- TF pump cleaning on 10/17
- Cleaned basket strainer on 10/18
- Repaired leaking skimmer pump air release valve on 10/18

Week of Sun 10/20 – Sat 10/26

- Operating on TF Zone 5 until 10/23
    - Switched to TF Zone 3 on 10/23
    - SVE active
- Changed bag filters and cleaned basket strainer on 10/23
- Backwashed carbon on 10/23
- Processed water from totes on 10/23
- Viscosity testing of product in OWS day tank on 10/23
- Cleaned effluent tank T-703 float switch on 10/23
- TF vault inspections / maintenance on 10/23
- Monthly well gauging on 10/24

Week of Sun 10/27 – Thu 10/31

- Operating on TF Zone 3 until 10/29
    - Switched to Zones 4 & 5 on 10/30
    - Switched to Zone 3 on 10/31
- TF vault / pump inspections & maintenance on 10/29
- Changed bag filters and cleaned basket strainer on 10/30
- Drained LGAC-1101 on 10/30
- Backwashed LGAC-1102 on 10/30
- Viscosity testing of product in OWS day tank on 10/30

VER/TF System Production Results:

- TF System uptime for October was 551.25 Actual Run Hours out of 693.94 Available Hours, or 79.44%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
    - System timers set to run 23.5 hrs/day until 10/10, then 24 hrs/day

Prepared By: VMW 4/17/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
October 2019

  - System shut down on 10/13 due to high level alarm in T-801; restarted on 10/15 after water removal from T-801.
  - System shut down on 10/15 due to high level alarm in T-801; restarted on 10/17 after product load-out from T-801.
  - System shut down on 10/18 due to high level alarm in OWS, restarted same day after cleaning basket strainer.
  - System shut down on 10/19 due to high level alarm in OWS, restarted 10/21 after resolving.
- Approximately 7,273 GAL Product Recovered in October from Zones 1, 2, 3, 4, 5 and 7
  - Average TF Product recovery rate for October was 234.6 GPD (calendar days), or 316.6 GPD (run days) accounting for system downtime.
- Approximately 315,144 GAL Product Recovered Total since system start-up.
- 4,964 GAL Product from T-801 disposed of offsite in October.
  - 315,033 GAL Product from T-801 disposed of Total since start-up.
- Approximately 201,640 GAL Effluent discharged in October
  - Average 6,505 GPD at an avg rate of 8,779 GPD considering downtime.
- 10,948,052 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 3.61%

Skimmer System Production Results:

- Skimmer System uptime for October was 248 Actual Run Hours out of 248 Available Hours, or 100%
  - Skimmer system running @ 8 hrs/day schedule (7AM – 3PM)
- Approximately 2,341 GAL Product Recovered in October.
  - Average Skimmer Product recovery rate for October was 75.5 GPD (calendar days), or 75.5 GPD (run days) accounting for system downtime.
- Approximately 99,995 GAL Product Recovered Total since start-up.
- 5,068 GAL Product from T-1401 disposed of offsite in October.
  - 97,530 GAL Product from T-1401 disposed of Total since start-up.

General Skimmer System Comments:

Total Product Recovery System Results:

- 9,613 GAL Product recovered in October.
  - Average Product recovery rate for October was 310.1 GPD.
- 415,139 GAL Product Recovered Total since system start-up.
- 10,032 GAL Product shipped off-site for disposal in October (see attached summary table)
- 412,563 GAL Product shipped off-site for disposal since system start-up as of the end of October 2019 (see attached summary table)
- 833,663 kWh Energy Consumption Total from system start-up through October 2019
- 16,543 kWh Energy Consumption for October
- 1.721 kWh/GAL Average Energy Consumed per GAL of Product Recovered for October

Prepared By: VMW 4/17/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
November 2019

Work completed in November 2019:

Week of Fri 11/1 – Sat 11/9

- O&M site visit on 11/6, 11/7 and 11/8
- VGAC change-out by Carbon Filtration Systems, Inc. on 11/7
- OWS cleanout by Allstate Power Vac on 11/8

Week of Sun 11/10 – Sat 11/16

- O&M site visits on 11/11 and 11/14
- 4Q 2019 Effluent Discharge Compliance Sampling completed 11/14

Week of Sun 11/17 – Sat 11/23

- O&M site visits on 11/20 and 11/22

Week of Sun 11/24 – Sat 11/30

- O&M site visits on 11/26 and 11/27
- Monthly LNAPL monitoring well gauging event on 11/26
- Product load-out from T-801 on 11/27
    - 4,406 GAL product removed (offsite) according to Bill of Lading

O&M Activities:

Week of Fri 11/1 – Sat 11/9

- Operating on TF Zone 3 until 11/8
    - Switched to TF Zones 4 & 5 on 11/8
- ARV oil cleanup on 11/6
- Change bag filters on 11/6
- TF pump repairs on 11/6
- Blow down VGAC unit on 11/6
- Prep for OWS cleanout on 11/6
- VGAC change-out on 11/7
- Reconnect and repair hoses on 11/7
- Service blowers and filters on 11/7
- OWS cleanout on 11/8
- Cleaned basket strainer on 11/8
- Drained line from ARV connected to T-701 on 11/8
- T-801 product composition testing on 11/8
- Water removal from T-801 on 11/8

Week of Sun 11/10 – Sat 11/16

- Operating on TF Zones 4 & 5 until 11/14
    - Switched to TF Zones 2, 3 & 5 on 11/14
- Inspect & reinstall flow meter on 11/11
- 4Q 2019 Effluent Discharge Compliance Sampling on 11/14
- TF vault inspections on 11/14
- Changed bag filters on 11/14
- Backwashed carbon on 11/14
    - Active carbon vessel switched to LGAC-1102
- Processed water from totes on 11/14
- Viscosity testing of product in OWS day tank on 11/14
- T-801 product composition testing on 11/14
- Set up belt skimmer timer on 11/14

Prepared By: VMW 4/20/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
November 2019

Week of Sun 11/17 – Sat 11/23

- Operating on TF Zones 2, 3 & 5 until 11/22
    - Switched to TF Zones 3 & 5 on 11/22
- Onsite on 11/20 for O&M
- Water removal from T-801 on 11/22
- Cleaned basket strainer on 11/22

Week of Sun 11/24 – Sat 11/30

- Operating on TF Zones 3 & 5 until 11/26
    - Operating on TF Zones 3, 4 & 5 on 11/26
    - Switched to TF Zone 4 on 11/27
- Monthly well gauging on 11/26
- Changed bag filters and cleaned basket strainer on 11/26
- Backwashed carbon on 11/26
- Water removal from T-801 on 11/26
- Product load-out from T-801 on 11/27
- Replaced NAS drive #2 on 11/27

VER/TF System Production Results:

- TF System uptime for November was 610.87 Actual Run Hours out of 642.74 Available Hours, or 95.04%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
    - System shut down on 11/6 in preparation for OWS cleanout; restarted on 11/8 following OWS cleanout.
    - System shut down on 11/21 due to high level alarm in T-801; restarted on 11/22 after water removal from T-801.
    - System shut down on 11/26 (AM) due to high level alarm in T-801; restarted same day after water removal from T-801.
    - System shut down on 11/26 (PM) due to high level alarm in T-801; restarted on 11/27 after product load-out from T-801.
- Approximately 3,738 GAL Product Recovered in November from Zones 2, 3, 4, and 5
    - Average TF Product recovery rate for November was 124.6 GPD (calendar days), or 146.9 GPD (run days) accounting for system downtime.
- Approximately 318,882 GAL Product Recovered Total since system start-up.
- 4,406 GAL Product from T-801 disposed of offsite in November.
    - 319,439 GAL Product from T-801 disposed of Total since start-up.
- Approximately 123,764 GAL Effluent discharged in November
    - Average 4,126 GPD at an avg rate of 4,863 GPD considering downtime.
- 11,071,816 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 3.02%

Skimmer System Production Results:

- Skimmer System uptime for November was 240 Actual Run Hours out of 240 Available Hours, or 100%
    - Skimmer system running @ 8 hrs/day schedule (7AM – 3PM)
- Approximately 2,485 GAL Product Recovered in November.
    - Average Skimmer Product recovery rate for November was 82.8 GPD (calendar days), or 82.8 GPD (run days) accounting for system downtime.

Prepared By: VMW 4/20/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
November 2019

- Approximately 102,479 GAL Product Recovered Total since start-up.
- 0 GAL Product from T-1401 disposed of offsite in November.
    - 97,530 GAL Product from T-1401 disposed of Total since start-up.

Total Product Recovery System Results:

- 6,222 GAL Product recovered in November.
    - Average Product recovery rate for November was 207.4 GPD.
- 421,361 GAL Product Recovered Total since system start-up.
- 4,406 GAL Product shipped off-site for disposal in November (see attached summary table)
- 416,969 GAL Product shipped off-site for disposal since system start-up as of the end of November 2019 (see attached summary table)
- 843,589 kWh Energy Consumption Total from system start-up through November 2019
- 9,926 kWh Energy Consumption for November
- 1.595 kWh/GAL Average Energy Consumed per GAL of Product Recovered for November

Prepared By: VMW 4/20/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
December 2019

Work completed in December 2019:

Week of Sun 12/1 – Sat 12/7

- O&M site visit on 12/4

Week of Sun 12/8 – Sat 12/14

- O&M site visit on 12/11

Week of Sun 12/15 – Sat 12/21

- Semi-annual groundwater sampling event on 12/16 through 12/19
- O&M site visit on 12/20

Week of Sun 12/22 – Tue 12/31

- O&M site visits on 12/23 and 12/27
- Monthly LNAPL monitoring well gauging event on 12/23

O&M Activities:

Week of Sun 12/1 – Sat 12/7

- Operating on TF Zone 4 until 12/4
    - Switched to TF Zone 5 on 12/4
- Viscosity testing of product in OWS day tank on 12/4
- Water removal from T-1401 on 12/4
- Change bag filters and cleaned basket strainer on 12/4
- Backwashed carbon on 12/4
- Chemical delivery on 12/4
- Transferred chemicals to drums on 12/4

Week of Sun 12/8 – Sat 12/14

- Operating on TF Zone 5 until 12/11
    - Switched to TF Zones 3, 4 & 5 on 12/11
- Cleaned transfers pipes between T-701 and OWS-701 and flushed with water on 12/11
- Change bag filters and cleaned basket strainer on 12/11
- Backwashed carbon on 12/11
- Processed water from totes on 12/11
- Water removal from T-801 & T-1401 on 12/11

Week of Sun 12/15 – Sat 12/21

- Operating on TF Zones 3, 4 & 5 until 12/17
    - Switched to TF Zone 4 on 12/17
    - Switched to TF Zones 4 & 5 on 12/19
    - Switched to TF Zones 3 & 6 on 12/20
- Groundwater sampling 12/16 through 12/19
- O&M on 12/20

Week of Sun 12/22 – Tue 12/31

- Operating on TF Zones 3 & 6
- O&M on 12/23
- Water removal from T-1401 on 12/23
- Monthly well gauging on 12/23
- Changed bag filters and cleaned basket strainer on 12/27
- Repair belt skimmer on 12/27

Prepared By: VMW 4/20/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
December 2019

- Backwashed carbon on 12/27

VER/TF System Production Results:

- TF System uptime for December was 685.22 Actual Run Hours out of 723.63 Available Hours, or 94.69%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
    - System shut down on 12/3 due to high product alarm in OWS; restarted on 12/4 after water removal from OWS day tank.
    - System shut down on 12/17 due to high water level alarm in OWS; restarted on same day.
    - System shut down on 12/19 due to low air pressure alarm; restarted same day.
    - System shut down on 12/20 due to low air pressure alarm; restarted same day.
- Approximately 1,549 GAL Product Recovered in December from Zones 3, 4, 5 and 6.
    - Average TF Product recovery rate for December was 50 GPD (calendar days), or 54.3 GPD (run days) accounting for system downtime.
- Approximately 320,431 GAL Product Recovered Total since system start-up.
- 0 GAL Product from T-801 disposed of offsite in December.
    - 319,439 GAL Product from T-801 disposed of Total since start-up.
- Approximately 153,829 GAL Effluent discharged in December
    - Average 4,962 GPD at an avg rate of 5,388 GPD considering downtime.
- 11,225,645 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 1.01%

Skimmer System Production Results:

- Skimmer System uptime for December was 248 Actual Run Hours out of 248 Available Hours, or 100%
    - Skimmer system running @ 8 hrs/day schedule (7AM – 3PM)
- Approximately 703 GAL Product Recovered in December.
    - Average Skimmer Product recovery rate for December was 22.7 GPD (calendar days), or 22.7 GPD (run days) accounting for system downtime.
- Approximately 103,183 GAL Product Recovered Total since start-up.
- 0 GAL Product from T-1401 disposed of offsite in December.
    - 97,530 GAL Product from T-1401 disposed of Total since start-up.

Total Product Recovery System Results:

- 2,253 GAL Product recovered in December.
    - Average Product recovery rate for December was 72.7 GPD.
- 423,614 GAL Product Recovered Total since system start-up.
- 0 GAL Product shipped off-site for disposal in December (see attached summary table)
- 416,969 GAL Product shipped off-site for disposal since system start-up as of the end of December 2019 (see attached summary table)
- 856,300 kWh Energy Consumption Total from system start-up through December 2019
- 12,711 kWh Energy Consumption for December
- 5.643 kWh/GAL Average Energy Consumed per GAL of Product Recovered for December

Prepared By: VMW 4/20/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
January 2020

Work completed in January 2020:

Week of Wed 1/1 – Sat 1/4

- O&M site visit on 1/3

Week of Sun 1/5 – Sat 1/11

- O&M site visit on 1/8

Week of Sun 1/12 – Sat 1/18

- O&M site visit on 1/15

Week of Sun 1/19 – Sat 1/25

- O&M site visit on 1/22
- Air compressor refrigerated dryer inspection on 1/22 by Murlynn Air Compressor Corp.
- Monthly LNAPL monitoring well gauging event on 1/24

Week of Sun 1/26 – Fri 1/31

- O&M site visit on 1/29
- Product load-out from T-1401 on 1/29
    - 4,954 GAL product removed (offsite) according to Bill of Landing

O&M Activities:

Week of Wed 1/1 – Sat 1/4

- Operating on TF Zones 3 & 6 until 1/3
    - Switched to TF Zones 1, 2 & 3 on 1/3
- Water removal from T-1401 on 1/3
- Changed bag filters and cleaned basket strainer on 1/3
- Backwashed carbon on 1/3
- Processed water from totes on 1/3

Week of Sun 1/5 – Sat 1/11

- Operating on TF Zones 1, 2 & 3 until 1/8
    - Switched to TF Zones 1, 2 & 4 on 1/8
- Changed bag filters and cleaned basket strainer on 1/8
- Changed active carbon vessel to LGAC-1101 on 1/8
- Processed water from totes on 1/8
- TF-4 lines inspection on 1/8
- Viscosity testing of product in OWS day tank on 1/8

Week of Sun 1/12 – Sat 1/18

- Operating on TF Zones 1, 2 & 4
- Changed bag filters and cleaned basket strainer on 1/15
- Backwashed carbon on 1/15
- Viscosity testing of product in OWS day tank on 1/15
- Water removal from T-801 & T-1401 on 1/15
- Adjusted skimmer pipe in OWS tank to capture product on 1/15
- Transferred chemicals to drums on 1/15

Week of Sun 1/19 – Sat 1/25

- Operating on TF Zones 4 & 5 until 1/24
    - Switched to TF Zones 3, 4, 5 & 6 on 1/24
- Water removal from T-801 on 1/22

Prepared By: VMW 4/28/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
January 2020

- Changed bag filters and cleaned basket strainer on 1/22
- OWS 703 high float shaft cleaned on 1/22
- Viscosity testing of product in OWS day tank on 1/22
- Processed water from totes on 1/22
- Air compressor refrigerated dryer inspection on 1/22
- Monthly well gauging on 1/24

Week of Sun 1/26 – Fri 1/31

- Operating on TF Zones 3, 4, 5 & 6 until 1/29
    - Switched to TF Zones 2, 3, 4 & 5 on 1/29
- Product load-out from T-1401 on 1/29
- Water removal from T-801 on 1/29
- Changed bag filters and cleaned basket strainer on 1/29
- Viscosity testing of product in OWS day tank on 1/29
- Processed water from totes on 1/29
- Transferred chemicals to drums on 1/29

VER/TF System Production Results:

- TF System uptime for January was 567.13 Actual Run Hours out of 729.69 Available Hours, or 77.72%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
    - System shut down on 1/15 due to high water alarm in OWS; restarted on 1/22 after water removal from OWS day tank.
- Approximately 254 GAL Product Recovered in January from Zones 1 through 6.
    - Average TF Product recovery rate for January was 8.2 GPD (calendar days), or 10.8 GPD (run days) accounting for system downtime.
    - Low recovery due to high water recovery, system downtime and belt skimmer failure
- Approximately 320,685 GAL Product Recovered Total since system start-up.
- 0 GAL Product from T-801 disposed of offsite in January.
    - 319,439 GAL Product from T-801 disposed of Total since start-up.
- Approximately 225,311 GAL Effluent discharged in January.
    - Average 7,268 GPD at an avg rate of 9,535 GPD considering downtime.
- 11,450,956 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 0.11%

Skimmer System Production Results:

- Skimmer System uptime for January was 248 Actual Run Hours out of 248 Available Hours, or 100%
    - Skimmer system running @ 8 hrs/day schedule (7AM – 3PM)
- Approximately 902 GAL Product Recovered in January.
    - Average Skimmer Product recovery rate for January was 29.1 GPD (calendar days), or 29.1 GPD (run days) accounting for system downtime.
- Approximately 104,084 GAL Product Recovered Total since start-up.
- 4,954 GAL Product from T-1401 disposed of offsite in January.
    - 102,484 GAL Product from T-1401 disposed of Total since start-up.

Prepared By: VMW 4/28/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
January 2020

Total Product Recovery System Results:

- 1,156 GAL Product recovered in January.
    - Average Product recovery rate for January was 37.3 GPD.
- 424,770 GAL Product Recovered Total since system start-up.
- 4,954 GAL Product shipped off-site for disposal in January (see attached summary table)
- 421,923 GAL Product shipped off-site for disposal since system start-up as of the end of January 2020 (see attached summary table)
- 868,547 kWh Energy Consumption Total from system start-up through January 2020
- 12,247 kWh Energy Consumption for January
- 10.595 kWh/GAL Average Energy Consumed per GAL of Product Recovered for January

Prepared By: VMW 4/28/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
February 2020

Work completed in February 2020:

Week of Sat 2/1 – Sat 2/8

- O&M site visit on 2/6

Week of Sun 2/9 – Sat 2/15

- O&M site visit on 2/11, 2/12 & 2/13
- OWS cleanout by Allstate Power Vac, Inc on 2/12
- Carbon change-out completed by Carbon Filtration Systems, Inc. on 2/13
- Sampled T-801 and T-1401 for PCB analysis on 2/13
    - 7.42 mg/kg Total PCBs in T-801
    - No PCBs detected in T-1401

Week of Sun 2/16 – Sat 2/22

- O&M site visits on 2/19 & 2/20
- 1Q 2020 Effluent Discharge Compliance Sampling completed 2/20
- Monthly LNAPL monitoring well gauging event on 2/20
- Product load-out from T-801 on 2/20
    - 4,926 GAL product removed (offsite) according to Bill of Landing
- Non-hazardous drum disposal on 2/20
    - 7 drums of spent bag filters, PPE, etc. disposed

Week of Sun 2/23 – Sat 2/29

- O&M site visit on 2/26

O&M Activities:

Week of Sat 2/1 – Sat 2/8

- Operating on TF Zones 2, 3, 4 & 5
- Changed bag filters and cleaned basket strainer on 2/6
- Adjusted tube skimmer in OWS on 2/6
- Viscosity testing of product in OWS day tank on 2/6
- Backwashed carbon on 2/6
- Blow down LGAC-1102 on 2/6 in preparation for LGAC change-out
- Removed belt from belt skimmer on 2/6 in preparation for OWS cleanout
- Processed water from totes on 2/6

Week of Sun 2/9 – Sat 2/15

- Operating on TF Zones 2, 3, 4 & 5
- Blow down LGAC-1101 on 2/11
- Tested air lines on 2/11
- Prep for OWS cleanout on 2/11
- OWS cleanout on 2/12
- Processed water from totes on 2/12
- LGAC change-out on 2/13
- Changed bag filters and cleaned basket strainer on 2/13
- Backwashed carbon on 2/13
- Repaired and installed new belt on belt skimmer on 2/13
- Repaired tube skimmer mounting brackets on 2/13
- Restart HMI on 2/13
- Replaced product transfer pump P-801 on 2/13
- Collected samples from T-801 and T-1401 for PCB analysis on 2/13

Prepared By: VMW 4/28/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
February 2020

Week of Sun 2/16 – Sat 2/22

- Operating on TF Zones 2, 3, 4 & 5 until 2/20
    - Switched to TF Zones 1, 2, 3, 4 & 5 on 2/20
    - SVE active beginning on 2/20
- Changed bag filters and cleaned basket strainer on 2/19
- Backwashed carbon on 2/19
- Place LGAC-1101 and 1102 in series on 2/19
- Cleaned/washed container on 2/19
- Water removal from T-801 on 2/19
- Cleared clogged inlet line to OWS day tank on 2/20
- Chemicals delivered and transferred to drums on 2/20
- Quarterly compliance sampling completed on 2/20
    - PCB samples collected 2/13 sent to lab on 2/20
- Switch active carbon vessel to LGAC-1101 on 2/20 after collecting samples
- Product load-out from T-801 on 2/20
- Non-haz drum disposal on 2/20
- Monthly well gauging on 2/20

Week of Sun 2/23 – Sat 2/29

- Operating on TF Zones 1, 2, 3, 4 & 5
    - SVE active
- Cleaned, tested and reinstalled influent flow meter on 2/26
- Tested high level spill detection float switch on 2/26
- Replaced product transfer pump hose on 2/26
- Altered/installed influent piping vent elbow on 2/26
- Changed bag filters and cleaned basket strainer on 2/26
- Backwashed carbon on 2/26
- Viscosity testing of product in OWS day tank on 2/26
- Processed water from totes on 2/26
- General site housekeeping on 2/26
- Tested IP camera and replaced network switch on 2/26

VER/TF System Production Results:

- TF System uptime for February was 521.64 Actual Run Hours out of 563.69 Available Hours, or 92.54%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
    - System shut down on 2/5 via high product level alarm in OWS; restarted on 2/6.
    - System down from 2/11 to 2/13 for OWS cleanout and carbon changeout.
    - System shut down on 2/16 due to high product level in T-801; restarted on 2/20 following product load-out.
    - System shut down on 2/25 via high water level alarm in OWS; restarted on 2/26 after cleaning float switch.
- Approximately 2,521 GAL Product Recovered in February from Zones 1 through 5.
    - Average TF Product recovery rate for February was 86.9 GPD (calendar days), or 116 GPD (run days) accounting for system downtime.
- Approximately 323,207 GAL Product Recovered Total since system start-up.
- 4,926 GAL Product from T-801 disposed of offsite in February.
    - 324,365 GAL Product from T-801 disposed of Total since start-up.

Prepared By: VMW 4/28/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
February 2020

- Approximately 191,731 GAL Effluent discharged in February.
    - Average 6,611 GPD at an avg rate of 8,821 GPD considering downtime.
- 11,642,686 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 1.31%

Skimmer System Production Results:

- Skimmer System uptime for February was 232 Actual Run Hours out of 232 Available Hours, or 100%
    - Skimmer system running @ 8 hrs/day schedule (7AM – 3PM)
- Approximately 498 GAL Product Recovered in February.
    - Average Skimmer Product recovery rate for February was 17.2 GPD (calendar days), or 17.2 GPD (run days) accounting for system downtime.
- Approximately 104,583 GAL Product Recovered Total since start-up.
- 0 GAL Product from T-1401 disposed of offsite in February.
    - 102,484 GAL Product from T-1401 disposed of Total since start-up.

Total Product Recovery System Results:

- 3,019 GAL Product recovered in February.
    - Average Product recovery rate for February was 104.1 GPD.
- 427,789 GAL Product Recovered Total since system start-up.
- 4,926 GAL Product shipped off-site for disposal in February (see attached summary table)
- 426,849 GAL Product shipped off-site for disposal since system start-up as of the end of February 2020 (see attached summary table)
- 888,750 kWh Energy Consumption Total from system start-up through February 2020
- 20,203 kWh Energy Consumption for February
- 6.691 kWh/GAL Average Energy Consumed per GAL of Product Recovered for February

Prepared By: VMW 4/28/20
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
March 2020

Work completed in March 2020:

Week of Sun 3/1 – Sat 3/7

- O&M site visits on 3/4 & 3/5

Week of Sun 3/8 – Sat 3/14

- O&M site visits on 3/9, 3/10, 3/11 & 3/12
- Vault maintenance and pump cleaning on 3/10, 3/11 & 3/12
    - Vault maintenance by K.L Fulford Associates, Inc.
- Air compressor serviced by D&D Electric Motors and Compressors on 3/11 & 3/12

Week of Sun 3/15 – Sat 3/21

- O&M site visits on 3/18 & 3/20
- Vault maintenance and pump cleaning on 3/18
    - Vault maintenance by K.L Fulford Associates, Inc.

Week of Sun 3/22 – Sat 3/28

- O&M site visit on 3/24

Week of Sun 3/29 – Tue 3/31

- O&M site visit on 3/31
- Monthly LNAPL monitoring well gauging event originally scheduled for 3/30 cancelled due to COVID-19 pandemic

O&M Activities:

Week of Sun 3/1 – Sat 3/7

- Operating on TF Zones 1, 2, 3, 4 & 5 until 3/5
    - Switched to TF Zones 3, 4 & 5 on 3/5
- Changed bag filters and cleaned basket strainer on 3/4
- Backwashed carbon on 3/4
- Processed water from totes on 3/4
- Replaced influent flow meter on 3/4
- Viscosity testing of product in OWS day tank on 3/4
- Water removal from T-801 on 3/5

Week of Sun 3/8 – Sat 3/14

- Operating on TF Zones 3, 4 & 5 until 3/12
    - Switch to TF Zones 4 & 5 on 3/12, then TF Zone 5 on 3/13
    - SVE active
- Site cleanup / housekeeping on 3/9
- Water removal from T-801 on 3/9
- Troubleshoot and replace influent flow meter on 3/10
- Vault inspections/maintenance & pump cleaning on 3/10, 3/11 & 3/12
    - Serviced, cleaned and reset pumps
    - Replaced pump hoses
    - Squared off well casings
    - Adjusted/repaired/replaced well seals
    - Repaired SVE caps
    - Removed/replaced couplings
- Air compressor serviced on 3/11 & 3/12
    - Replaced oil/air separator, oil & air filters

Prepared By: VMW 4/29/20
Checked By: TCK

  - Replaced belt
  - Checked dryers
  - Changed oil
- Changed bag filters and cleaned basket strainer on 3/12
- Backwashed carbon on 3/12
- Opened SVE dilution valve completely on 3/12
- Adjusted SVE system on 3/13

Week of Sun 3/15 – Sat 3/21

- Operating on TF Zone 5 until 3/18
  - Switched to TF Zone 4 on 3/18
  - SVE active
- Continued vault maintenance and pump cleaning on 3/18
- Changed bag filters and cleaned basket strainer on 3/18
- Backwashed carbon on 3/18
- Inspected and dampened SVE filter on 3/18
- Transferred chemicals to drums on 3/18
- Adjusted chemical feed pumps on 3/18
- Adjusted SVE vacuum at well heads on TF-4 lines on 3/18
- Replaced influent flowmeter transducer on 3/18 and reset k-factor on new transducer
- Troubleshoot HMI and camera on 3/18
  - Reboot & reset IP on HMI/PLC
  - Reboot & reset camera
- Water removal from T-801 on 3/18 & 3/20

Week of Sun 3/22 – Sat 3/28

- Operating on TF Zone 4 until 3/26
  - Switch to TF Zone 5 on 3/26
- Changed bag filters and cleaned basket strainer on 3/24
- Backwashed carbon on 3/24
- Water removal from T-801 on 3/24
- Processed water from totes on 3/24

Week of Sun 3/29 – Tue 3/31

- Operating on TF Zone 5
- Removed, cleaned and replaced SVE filters on 3/31
- Took inventory of spare parts, PPE and chemicals on 3/31
- Adjusted packing on product transfer pump on 3/31
- Backup HMI & PLC then replaced HMI, network switch and power supplies on 3/31
  - Tested alarms and shutdowns on new HMI
- Replaced IP camera on 3/31
- Troubleshoot and test influent flow sensor & meter on 3/31

VER/TF System Production Results:

- TF System uptime for March was 683.20 Actual Run Hours out of 713.46 Available Hours, or 95.76%
  - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
  - System shut down on 3/3 via high water level alarm in OWS; restarted on 3/4.
  - System shut down on 3/5 via high level alarm in T-801; restarted later that night after water removal from T-801

Prepared By: VMW 4/29/20
Checked By: TCK

  - System shut down on 3/9 via high water level alarm in OWS; restarted same day.
- Approximately 1,717 GAL Product Recovered in March from Zones 1 through 5.
  - Average TF Product recovery rate for March was 55.4 GPD (calendar days), or 60.3 GPD (run days) accounting for system downtime.
- Approximately 324,924 GAL Product Recovered Total since system start-up.
- 0 GAL Product from T-801 disposed of offsite in March.
  - 324,365 GAL Product from T-801 disposed of Total since start-up.
- Approximately 193,300 GAL Effluent discharged in March.
  - Average 6,236 GPD at an avg rate of 6,790 GPD considering downtime.
- 11,835,986 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 0.89%

Skimmer System Production Results:

- Skimmer System uptime for March was 248 Actual Run Hours out of 248 Available Hours, or 100%
  - Skimmer system running @ 8 hrs/day schedule (7AM – 3PM)
- Approximately 443 GAL Product Recovered in March.
  - Average Skimmer Product recovery rate for March was 14.3 GPD (calendar days), or 14.3 GPD (run days) accounting for system downtime.
- Approximately 105,026 GAL Product Recovered Total since start-up.
- 0 GAL Product from T-1401 disposed of offsite in March.
  - 102,484 GAL Product from T-1401 disposed of Total since start-up.

Total Product Recovery System Results:

- 2,160 GAL Product recovered in March.
  - Average Product recovery rate for March was 69.7 GPD.
- 429,950 GAL Product Recovered Total since system start-up.
- 0 GAL Product shipped off-site for disposal in March (see attached summary table).
- 426,849 GAL Product shipped off-site for disposal since system start-up as of the end of March 2020 (see attached summary table).
- 913,494 kWh Energy Consumption Total from system start-up through March 2020.
- 24,744 kWh Energy Consumption for March.
- 11.453 kWh/GAL Average Energy Consumed per GAL of Product Recovered for March.

Prepared By: VMW 4/29/20
Checked By: TCK

APPENDIX B

Annual Inspection Report

Site Inspection Form – RAD I

I. Site Information		
Site Name:	Review Avenue Development Site I (RAD I)	
NYSDEC Site Number:	BCP #C241089	
Site Address:	37-30 Review Avenue, Long Island City, NY	
Block/Lot:	Block 312; Lot 41	
Date of Inspection:	12/16/19	
Type of Inspection:	Regular ☒	Emergency ☐
Inspected By:	Brent O'Dell	

II. General Information	
Current Site Use: (Warehouse, Parking Lot, Vacant, etc.):	Commercial
Summary of Previous Inspections: See Attached	
Repairs to triangular area were needed, ongoing required. Repaving or concrete patching was still required, some pavement repairs or rehabilitation was needed.	

III. Weather Conditions			
Time	**Temperature**	**Condition (Sunny, Overcast, Precipitation, etc.)**	**Wind (Light, Moderate, Heavy, etc.)**
	30s	Partly Cloudy	Light

IV. On-Site Documents & Records (Stored at RAD II)				
Description	**Readily available**	**Up to date**	**N/A**	**Remarks**
O&M Documents: on RAD II				
O&M Manual	X	yes		
As-built drawings	X	yes		
Maintenance logs	X	yes		
Site Health & Safety Plan: on RAD II				
Contingency Plan/Emergency response plan	X	yes		
O&M and OSHA Training Records: on RAD II				
O&M and OSHA Training Records	X	yes		
Permits and Service Agreements: on RAD II				
NYSDEC Air Permit Exemption	X	yes		
NYSDEC Petroleum Bulk Storage Certification	X	yes		
NYSDEC Erosion and Sediment Control Exemption		yes		
NYSDEC Tidal Wetlands Jurisdiction Determination Letter	X	yes		N/A
NYCDEP Groundwater Discharge LOA		yes		Being renewed
NYCDEP Air Permit Informational Notice	X	yes		
NYCDEP Dewatering Scheme and Indemnity Agreement		yes		Being renewed
NYCDEP Bureau of Customer Service Groundwater Discharge Permit		yes		
NYCDOB Certificates of Occupancy	X	yes		
Other:				

V. Site Conditions					
Description		**Inspected**			**Comments, Field Observations and Measurements (Dimensions and Depth of Disturbance of Cap), Reference Photo #**
		Yes	**No**	**N/A**	
Engineering Control: Pavement Cover System					
a.	Asphalt Condition (Check for cracking, spalling, and potholes)	X			Identified areas in need of repair.

b.	Differential Settlement (Check for settlement or subsidence)		X		
c.	Disturbance (Check for disturbance e.g. construction or utility repair, etc.)		X		
Engineering Control: LNAPL Recovery System					
a.	Recovery Well Vaults and Pumps (Check for leaks, operation, vault security, etc.)	X			Check list and photo's on file
Other:					
a.	Monitoring Wells (Check if secured, inspect condition of well, well cap, etc.)	X			Check list of photos on file
b.	Security (Check fence, gates, locks, etc.)	X			Fence line is fine.
c.	Site Use (Has site use changed? If so, is it still used for restricted use as specified in the SMP?)	X			Same. No.

VI. Institutional Controls

Status of Institutional Controls:

Description	Yes	No	N/A	Remarks
Site conditions imply Institutional Controls not properly implemented		X		
Site conditions imply Institutional Controls not being fully enforced		X		
Permits and records are onsite and up-to-date	X			
Violations (if any) have been reported		X		
Previous suggested correction(s) have been made	X			Being worked on. New Pavement installed. Maint.

Other problems or suggestions:

VII. Groundwater and LNAPL Elevations

Monthly LNAPL Thickness Measurements: SEE ATTACHED

Well ID Location	Date	Time	Depth from TOC to			Measured by:	Remarks: Calibration data found on Instrument Calibration Record
			Product (ft)	Water (ft)	Bottom (ft)		
AML-01							
AML-04							
GAL-10							
GAL-11R							
GAL-12							
GAL-13R							
GAL-18R							
GAL-21							
GAL-22							
GAL-23							
GAL-24							
GAL-32							
MW-2							
MW-4R							

VII. Groundwater and LNAPL Elevations (Continued)

Semi-Annual Groundwater Elevation Measurements:

Well ID Location	Date	Time	Depth from TOC to		Measured by:	Sampled? (Y/N)	Remarks: Calibration data found on Instrument Calibration Record
			Water (ft)	Bottom (ft)			
GAGW-02	7/11/19	8:30a	11.67	72.4	JL&EV	Y	YSI calibrated on 7/10 & 7/11
GAGW-02	12/19/19	1:15p	13.44	72.4	EP&EV	Y	YSI calibrated on 12/16/19
GAGW-04D	7/11/19	12:00p	20.56	69.6	JL&EV	Y	YSI calibrated on 7/10 & 7/11
GAGW-04D	12/16/19	10:50a	22.34	69.6	EP&EV	Y	YSI calibrated on 12/16/19
GAGW-05R	7/10/19	2:01p	12.66	74.5	JL&EV	Y	YSI calibrated on 7/10 & 7/11
GAGW-05R	12/18/19	2:40p	14.14	74.5	EP&EV	Y	YSI calibrated on 12/16/19
GAGW-6I	7/11/19	9:40a	11.77	38.9	JL&EV	Y	YSI calibrated on 7/10 & 7/11
GAGW-6I	12/19/19	12:00p	13.75	38.9	EP&EV	Y	YSI calibrated on 12/16/19
GAGW-08R	7/10/19	12:00p	13.55	72.4	JL&EV	Y	YSI calibrated on 7/10 & 7/11
GAGW-08R	12/18/19	11:50a	15.22	72.4	EP&EV	Y	YSI calibrated on 12/16/19
AMGW-10D	7/10/19	10:20a	12.43	71.5	JL&EV	Y	YSI calibrated on 7/10 & 7/11
AMGW-10D	12/18/19	10:30a	15.25	71.5	EP&EV	Y	YSI calibrated on 12/16/19

Semi-Annual LNAPL Thickness Measurements (12 TF LNAPL Recovery Wells from RAD I & RAD II):

Well ID Location	Date	Time	Depth from TOC to			Measured by:	Remarks: Calibration data found on Instrument Calibration Record
			Product (ft)	Water (ft)	Bottom (ft)		
TF3A	3/12/20	8:04am	15.43	15.45	26.85	PH	
TF3B	3/12/20	8:12am	17.15	17.26	25.32	PH	
TF3C	3/12/20	8:20am	17.04	17.25	27.05	PH	
TF3D	3/12/20	8:36am	16.20	17.95	26.45	PH	
TF4A	3/12/20	8:43am	14.50	14.65	24.30	PH	
TF4B	3/12/20	8:56am	14.32	17.30	23.20	PH	
TF4C	3/12/20	9:06am	14.61	14.62	25.00	PH	
TF4D	3/12/20	9:12am	13.82	15.85	26.30	PH	
TF5A	3/12/20	9:33am	12.55	12.60	20.71	PH	
TF5B	3/12/20	9:40am	12.47	12.73	21.50	PH	
TF5C	3/12/20	9:55am	12.32	12.50	20.05	PH	
TF5D	3/12/20	10:02a	12.80	12.85	21.62	PH	

IX. Overall Observations on Remedy Implementation & Site Conditions

Cap Repairs referenced in previous inspections were completed. Triangular area repairs were completed, however ongoing and continued maintenance is necessary. Cap in middle of site around concrete needs to be tied in better.

Review Avenue LNAPL Recovery System
Well Gauging Data - April 2019 Through February 2020
(March 2020 Gauging Event Cancelled Due To COVID-19)

Well ID	4/23/2019			5/24/2019			6/6/2019			7/26/2019			8/22/2019			9/26/2019		
	Depth to top of product	Depth to top of water	Product Thickness	Depth to top of product	Depth to top of water	Product Thickness	Depth to top of product	Depth to top of water	Product Thickness	Depth to top of product	Depth to top of water	Product Thickness	Depth to top of product	Depth to top of water	Product Thickness	Depth to top of product	Depth to top of water	Product Thickness
AML-01	11.14	13.59	2.45	10.12	12.97	2.85	10.54	12.71	2.17	10.65	13.20	2.55	10.96	12.60	1.64	11.28	13.14	1.86
AML-04	13.97	15.42	1.45	15.16	16.24	1.08	15.09	16.12	1.03	15.18	16.22	1.04	15.41	16.70	1.29	15.72	17.35	1.63
GAL-10	18.54	19.32	0.78	18.04	19.24	1.20	18.31	18.97	0.66	18.35	19.15	0.80	18.55	19.09	0.54	18.85	19.93	1.08
GAL-11R	13.52	15.56	2.04	13.24	15.72	2.48	13.19	15.63	2.44	13.30	15.2	1.90	13.45	15.82	2.37	13.82	16.4	2.58
GAL-13	13.32	14.57	1.25	12.52	14.33	1.81	12.87	14.02	1.15	13	14.7	1.70	13.34	14.41	1.07	13.57	15.53	1.96
GAL-18R	16.67	18.23	1.56	16.43	17.87	1.44	16.33	17.77	1.44	16.82	18.14	1.32	16.66	18.91	2.25	16.99	18.82	1.83
GAL-21	13.02	16.59	3.57	12.55	15.29	2.74	12.68	14.73	2.05	12.70	15.55	2.85	12.73	16.01	3.28	13.27	16.46	3.19
GAL-22	15.40	16.83	1.43	16.25	16.96	0.71	16.04	16.81	0.77	16.30	17.22	0.92	16.50	17.35	0.85	16.84	18.12	1.28
GAL-23	13.24	15.02	1.78	12.88	14.18	1.30	12.74	14.78	2.04	12.83	14.42	1.59	13.02	14.99	1.97	13.34	15.54	2.20
GAL-24	13.52	14.92	1.40	13.05	14.06	1.01	13.34	13.85	0.51	13.15	14.23	1.08	13.22	13.85	0.63	13.66	15.07	1.41
MW-4RR	9.62	12.95	3.33	9.22	12.12	2.90	9.15	11.88	2.73	9.85	13.90	4.05	9.56	22.09	12.53	9.81	13.24	3.43
GAGW-04	19.92	21.94	2.02	20.08	21.75	1.67	20.44	21.81	1.37	20.59	21.66	1.07	20.79	21.66	0.87	21.02	23.53	2.51
AML-02	16.90	19.28	2.38	15.79	18.29	2.50	-	-	-	-	-	-	16.05	19.71	3.66	-	-	-
AML-03	14.27	17.72	3.45	13.78	19.82	6.04	13.48	17.38	3.90	13.90	17.20	3.30	-	-	-	14.62	18.26	3.64
AML-06	16.64	19.24	2.60	15.67	20.33	4.66	16.24	18.11	1.87	16.40	19.11	2.71	16.61	20.60	3.99	16.94	20.26	3.32
GAL-01RR	16.98	20.12	3.14	16.5	19.51	3.01	16.58	17.81	1.23	16.71	21.01	4.30	16.90	21.29	4.39	17.28	20.40	3.12
GAL-02R	11.94	16.69	4.75	8.17	15.13	6.96	11.53	15.53	4.00	10.67	13.90	3.23	11.85	14.90	3.05	12.23	16.04	3.81
GAL-03R	18.48	21.19	2.71	14.96	21.27	6.31	18.04	21.74	3.70	18.25	21.55	3.30	18.46	22.29	3.83	18.77	22.21	3.44
GAL-04R	12.79	15.74	2.95	12.48	15.59	3.11	-	-	-	12.55	17.20	4.65	12.78	16.55	3.77	13.1	16.90	3.80
GAL-05R	19.06	21.49	2.43	18.67	21.14	2.47	18.69	21.23	2.54	18.25	21.55	3.30	19.06	22.10	3.04	19.42	22.32	2.90
GAL-06	Dry	Dry	Dry	20.69	22.09	1.40	20.83	-	-	20.75	21.92	1.17	20.95	21.20	0.25	21.27	21.90	0.63
GAL-07	14.86	17.06	2.20	14.49	17.05	2.56	14.49	16.67	2.18	14.76	16.63	1.87	14.91	16.90	1.99	15.28	17.84	2.56
GAL-08	15.43	18.05	2.62	14.13	15.09	0.96	14.93	16.12	1.19	14.7	15.10	0.40	15.40	16.30	0.90	16.75	15.96	-0.79
GAL-09	21.36	22.74	1.38	11.21	22.65	11.44	21.07	23.12	2.05	21.10	22.67	1.57	21.32	22.85	1.53	21.67	23.6	1.93
GAL-16R	11.93	15.67	3.74	11.62	17.78	6.16	11.67	15.53	3.86	11.67	15.73	4.06	11.91	16.26	4.35	12.24	16.81	4.57
GAL-29	21.43	23.44	2.01	19.66	23.42	3.76	21.09	23.90	2.81	21.22	22.97	1.75	21.41	23.50	2.09	-	-	-
GAL-30	21.98	24.37	2.39	21.45	24.49	3.04	21.59	23.85	2.26	21.73	24.09	2.36	21.93	24.95	3.02	22.27	24.74	2.47
GAL-31	19.53	21.88	2.35	19.04	21.47	2.43	19.11	20.81	1.70	19.21	21.63	2.42	19.45	21.7	2.25	19.84	22.46	2.62
VER-2	18.59	22.46	3.87	12.20	22.47	10.27	12.22	15.02	2.80	12.35	15.23	2.88	12.52	15.90	3.38	12.88	16.89	4.01
GAL-12																		
MW-4R										9.85	13.9	4.05						
MW-11																		
MW-2																		
PSMW-2																		

Prepared By: VMW 05/01/2020

Review Avenue LNAPL Recovery System
Well Gauging Data - April 2019 Through February 2020
(March 2020 Gauging Event Cancelled Due To COVID-19)

Well ID	10/24/2019			11/26/2019			12/23/2019			1/24/2020			2/20/2020		
	Depth to top of product	Depth to top of water	Product Thickness	Depth to top of product	Depth to top of water	Product Thickness	Depth to top of product	Depth to top of water	Product Thickness	Depth to top of product	Depth to top of water	Product Thickness	Depth to top of product	Depth to top of water	Product Thickness
AML-01	11.71	14.11	2.40	12.13	14.04	1.91	12.10	13.44	1.34	12.26	13.79	1.53	12.43	14.45	2.02
AML-04	16.15	17.85	1.70	16.52	18.36	1.84	16.61	18.15	1.54	16.64	18.21	1.57	16.44	18.90	2.46
GAL-10	19.32	20.25	0.93	19.62	20.88	1.26	19.81	20.88	1.07	19.80	20.85	1.05	19.93	21.14	1.21
GAL-11R	14.22	17.47	3.25	14.55	17.73	3.18	14.72	17.29	2.57	-	-	-	14.93	17.55	2.62
GAL-13	14.08	15.94	1.86	14.32	15.35	1.03	14.42	16.15	1.73	14.5	16.13	1.63	14.95	16.54	1.59
GAL-18R	17.43	19.54	2.11	17.74	19.83	2.09	17.87	19.57	1.70	17.93	19.72	1.79	-	-	-
GAL-21	13.75	16.00	2.25	14.12	16.93	2.81	14.17	17.27	3.10	14.53	17.21	2.68	14.41	17.23	2.82
GAL-22	17.25	18.49	1.24	17.63	18.92	1.29	17.71	19.02	1.31	17.73	19.00	1.27	17.83	19.33	1.50
GAL-23	13.69	16.24	2.55	14.11	16.32	2.21	14.24	16.46	2.22	14.34	16.71	2.37	14.54	16.92	2.38
GAL-24	14.05	15.34	1.29	14.40	15.88	1.48	14.54	15.76	1.22	14.58	15.84	1.26	14.75	16.04	1.29
MW-4RR	10.08	13.86	3.78	10.62	13.84	3.22	10.77	13.80	3.03	11.08	14.53	3.45	11.03	13.84	2.81
GAGW-04	21.45	23.44	1.99	21.72	24.03	2.31	21.92	23.95	2.03	21.89	23.61	1.72	22.1	23.40	1.30
AML-02	16.95	20.10	3.15	-	-	-	17.42	19.26	1.84	-	-	-	17.59	20.08	2.49
AML-03	Dry	Dry	Dry	15.50	18.45	2.95	-	-	-	15.43	18.18	2.75	-	-	-
AML-06	17.31	20.76	3.45	17.67	21.20	3.53	17.73	20.35	2.62	18.83	21.47	2.64	18.02	21.40	3.38
GAL-01RR	17.89	21.30	3.41	18.10	21.08	2.98	18.07	21.38	3.31	18.34	21.83	3.49	18.42	21.65	3.23
GAL-02R	12.59	16.05	3.46	12.13	14.49	2.36	13.20	15.19	1.99	13.32	16.64	3.32	13.41	16.54	3.13
GAL-03R	19.15	22.19	3.04	19.63	22.70	3.07	19.59	22.13	2.54	-	-	-	19.9	23.08	3.18
GAL-04R	13.78	16.83	3.05	13.87	17.47	3.60	13.94	17.43	3.49	14.45	16.92	2.47	14.25	17.60	3.35
GAL-05R	19.11	21.97	2.86	20.21	23.20	2.99	20.27	22.95	2.68	14.42	14.42	0.00	20.53	23.44	2.91
GAL-06	22.73	-	-	22.1	22.10	0.00	22.31	22.31	0.00	Dry	Dry	Dry	Dry	Dry	Dry
GAL-07	15.73	18.21	2.48	15.96	18.54	2.58	15.99	18.29	2.30	16.24	19.22	2.98	16.34	19.07	2.73
GAL-08	16.13	16.46	0.33	16.68	16.90	0.22	15.31	15.88	0.57	16.39	16.75	0.36	16.68	17.15	0.47
GAL-09	22.17	24.32	2.15	22.47	25.02	2.55	22.81	23.97	1.16	22.56	24.44	1.88	22.73	24.7	1.97
GAL-16R	12.68	16.52	3.84	13.06	16.95	3.89	13.08	17.20	4.12	13.10	17.04	3.94	13.32	17.21	3.89
GAL-29	Dry	Dry	Dry	22.47	25.18	2.71	-	-	-	22.54	24.96	2.42	22.82	25.30	2.48
GAL-30	22.98	25.93	2.95	23.18	25.76	2.58	23.21	24.83	1.62	23.2	25.54	2.34	23.38	25.80	2.42
GAL-31	20.53	22.47	1.94	20.64	23.32	2.68	20.63	22.71	2.08	20.68	22.85	2.17	20.90	23.18	2.28
VER-2	13.33	16.74	3.41	13.53	17.11	3.58	13.69	17.10	3.41	14.23	17.41	3.18	-	-	-
GAL-12															
MW-4R															
MW-11															
MW-2															
PSMW-2															

Prepared By: VMW 05/01/2020

APPENDIX C

Discharge Compliance Reports

de maximis, inc.

1550 Pond Road
Suite 120
Allentown, PA 18104
(610) 435-1151
(610) 435-8459 FAX

June 20, 2019

Via U.S. Mail

Mr. Sean H. Hulbert
Assistant Chemical Engineer
NYCDEP, Bureau of Wastewater Treatment
96-05 Horace Harding Expressway, 1st Floor
Corona, New York 11368

RE: Review Avenue Development Sites - 37-30 and 37-80 Review Avenue
File # C-5652
2nd Quarter 2019 Effluent Discharge Compliance Report

Dear Mr. Hulbert:

Enclosed is the 2nd Quarter 2019 - Effluent Discharge Compliance Report for the Review Avenue Development Sites. This report is being submitted on behalf of the Review Avenue System LLC administering the Review Avenue Development Site Brownfield Projects identified as RAD I and RAD II.

I would like to call to your attention the following, relative to discharge for the 2nd Quarter 2019:

- Approximately 696,640 gallons of water have been discharged to the sewer system since the last reporting period – March 2019.
- No constituents were reported above discharge criteria.

Please contact me with any questions at (610) 435-1151.

Sincerely,

de maximis, inc.

R. Craig Coslett
Project Coordinator for RADI and RAD II

Enclosures: Compliance Monitoring Report for 2nd Quarter 2019
CC: John Grathwol, NYDEC (electronic mail only)
Tim Kessler, Wood Group (electronic mail only)
Brent O'Dell, Wood Group (electronic mail only)

File: 3216 / 2nd Qrt Compliance Report 2019

June 19, 2019

Mr. Sean H. Hulbert - Assistant Chemical Engineer
NYCDEP, Bureau of Wastewater Treatment
96-05 Horace Harding Expressway, 1st Floor
Corona, NY 11368

Subject: 2nd **Quarter 2019 Effluent Discharge Compliance**
Review Avenue Development Sites
37-30 and 37-80 Review Avenue
Long Island City, Queens, New York, File # C-5652

Dear Mr. Hulbert:

Wood Environment and Infrastructure Solutions, Inc. (Wood), on behalf of Review Avenue System LLC, submits the effluent laboratory analysis data in connection with the letter of approval (LOA) for groundwater discharge to sanitary or combined sewer for the Review Avenue Development (RAD) Sites and LOA Extension dated October 12, 2018.

Wood collected the 2nd Quarter 2010 discharge compliance samples on May 16th, 2019. Analytical results indicate no exceedances of the daily discharge limits for all parameters and no exceedances of the monthly discharge limits for all parameters, and therefore the discharge is in compliance with our LOA requirements. The analytical results collected for the 2nd quarter 2019 compliance sampling are summarized on Table 1 attached. The total volume of groundwater discharged to the sanitary or combined sewer, since system start-up was 9,548,370 gallons as of the May 16th sampling event and 696,640 gallons since the last quarterly sampling event on February 19'th.

If you have any questions, please contact either of the undersigned at (609) 689-2829.

Sincerely,

Wood Environment & Infrastructure Solutions, Inc.

Brent C. O'Dell, P.E.
Principal Engineer – Civil

Timothy C. Kessler
Senior Associate Engineer/PM

Attachments: Table 1 – Summary of Groundwater Analytical Results

cc: R. Craig Coslett – Review Avenue System LLC

200 American Metro Blvd
Suite 113
Hamilton, NJ 08619
609-689-2829
woodplc.com

Table 1
Summary of Analytical Results - Groundwater Treatment System
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	NYCDEP Daily Limit	NYCDEP Monthly Limit	RA-EFF-G		RA-EFF-C	
Compliance Period:				2Q 2019		2Q 2019	
Sample Date:				5/16/2019		5/16/2019	
Lab Sample ID:				JC882558-1		JC882558-2	
Non-polar material[1]	mg/L	50	NL	5.0	U	-	
pH[2]	SUs	5 - 12	NL	7.44		-	
Temperature[2]	ºF	150	NL	62.74		-	
Flash Point[3]	ºF	> 140	NL	> 200		-	
Cadmium (Instantaneous)	mg/L	2	NL	0.003	U	-	
Cadmium (Composite)	mg/L	0.69	NL	-		0.003	U
Chromium (VI)	mg/L	5	NL	0.01	U	-	
Copper	mg/L	5	NL	0.01	U	-	
Lead	mg/L	2	NL	0.003	U	-	
Mercury	mg/L	0.05	NL	0.0002	U	-	
Nickel	mg/L	3	NL	0.018		-	
Zinc	mg/L	5	NL	0.02	U	-	
Benzene	µg/L	134	57	0.34	U	-	
Carbon Tetrachloride	µg/L	NL	NL	-		0.55	U
Chloroform	µg/L	NL	NL	-		0.50	U
1,4-Dichlorobenzene	µg/L	NL	NL	0.63	U	-	
Ethylbenzene	µg/L	380	142	0.30	U	-	
MTBE (Methyl-Tert-Butyl-Ether)	µg/L	50	NL	0.87	U	-	
Napthalene	µg/L	47	19	-		0.26	U
Phenol	µg/L	NL	NL	-		0.44	U
Tetrachloroethylene (Perc)	µg/L	20	NL	0.9	U	-	
Toluene	µg/L	74	28	0.36	U	-	
1,2,4-Trichlorobenzene	µg/L	NL	NL	-		0.28	U
1,1,1-Trichloroethane	µg/L	NL	NL	-		0.54	U
Xylenes (Total)	µg/L	74	28	0.35	U	-	
PCBs (Total)	µg/L	1	NL	-		0.037	
Total Suspended Solids (TSS)	mg/L	350	NL	4.0	U	-	
CBOD	mg/L	NL	NL	-		5.0	U
Chloride	mg/L	NL	NL	95.4		-	
Total Nitrogen	mg/L	NL	NL	-		2.2	
Total Solids	mg/L	NL	NL	957		-	

Prepared by: TK 06/19/19

Table 1
Summary of Analytical Results - Groundwater Treatment System
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Notes:
RA-EFF-G: Instantaneous (Grab) Sample
RA-EFF-C: 4-Hour Flow Weighted Composite Sample
Bold/Shaded: Concentration exceeds daily limit
Underline: Concentration exceeds monthly limit
1. Non-polar Material reported by lab as "Silica Gel Treated n-Hexane Extractable Material (SGT-HEM)"
2. pH and Temperature measured in field
3. Flash Point reported by lab as Ignitability

Definitions:
MDL: Method Detection Limit
RL: Reporting Limit
NL: No Limit

Data Qualifiers:
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U: Indicates the analyte was not detected at the indicated RL.

Prepared by: TK 6/19/19

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Wood Environment & Infrastructure Solut.

Review Avenue, Long Island City, NY

C012700305/3480160502

SGS Job Number: JC88255

Sampling Date: 05/16/19

Report to:

Wood Environment & Infrastructure Soln.
200 American Metro Boulevard Suite 113
Hamilton, NJ 08619
Timothy.Kessler@amecfw.com; Vincent.Whelan@amecfw.com

ATTN: Tim Kessler

Total number of pages in report: 26

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Brian McGuire
General Manager

Client Service contact: Kelly Ramos 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

Table of Contents

SGS North America Inc.

Sample Summary

Wood Environment & Infrastructure Solut.

Job No: JC88255

Review Avenue, Long Island City, NY
Project No: C012700305/3480160502

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
JC88255-1	05/16/19	11:55	NDF	05/16/19	AQ	Effluent	RA-EFF-G
JC88255-1R	05/16/19	11:55	NDF	05/16/19	AQ	Effluent	RA-EFF-G
JC88255-2	05/16/19	11:45	NDF	05/16/19	AQ	Effluent	RA-EFF-C
JC88255-2R	05/16/19	11:45	NDF	05/16/19	AQ	Effluent	RA-EFF-C

Summary of Hits

Job Number: JC88255
Account: Wood Environment & Infrastructure Solut.
Project: Review Avenue, Long Island City, NY
Collected: 05/16/19

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC88255-1	**RA-EFF-G**					
Nickel		18.2	10		ug/l	EPA 200.7
Chloride		95.4	2.0		mg/l	EPA 300/SW846 9056A
Ignitability (Flashpoint)		> 200			Deg. F	SW846 1010A/ASTM D93
Solids, Total		957	10		mg/l	SM2540 B-11
JC88255-1R	**RA-EFF-G**					
No hits reported in this sample.						
JC88255-2	**RA-EFF-C**					
Nitrogen, Total [a]		2.2	0.30		mg/l	SM4500 A-11
Nitrogen, Total Kjeldahl		2.2	0.20		mg/l	EPA 351.2/LACHAT
JC88255-2R	**RA-EFF-C**					
Aroclor 1248		0.037 J	0.050	0.025	ug/l	EPA 608

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC88255-1	**Date Sampled:**	05/16/19
Matrix:	AQ - Effluent	**Date Received:**	05/16/19
Method:	EPA 624.1	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T238356.D	1	05/28/19 14:15	CSF	n/a	n/a	VT9833
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.34	ug/l	
108-88-3	Toluene	ND	1.0	0.36	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	0.35	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.87	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.63	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	105%		76-122%
2037-26-5	Toluene-D8 (SUR)	89%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	95%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC88255-1	**Date Sampled:**	05/16/19
Matrix:	AQ - Effluent	**Date Received:**	05/16/19
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	05/22/19	05/22/19	ND	EPA 200.7 [2]	EPA 200.7 [4]
Copper	< 10	10	ug/l	1	05/22/19	05/22/19	ND	EPA 200.7 [2]	EPA 200.7 [4]
Lead	< 3.0	3.0	ug/l	1	05/22/19	05/22/19	ND	EPA 200.7 [2]	EPA 200.7 [4]
Mercury	< 0.20	0.20	ug/l	1	05/22/19	05/22/19	EAL	EPA 245.1 [1]	EPA 245.1 [5]
Nickel	18.2	10	ug/l	1	05/22/19	05/23/19	ND	EPA 200.7 [3]	EPA 200.7 [4]
Zinc	< 20	20	ug/l	1	05/22/19	05/22/19	ND	EPA 200.7 [2]	EPA 200.7 [4]

(1) Instrument QC Batch: MA46770
(2) Instrument QC Batch: MA46773
(3) Instrument QC Batch: MA46782
(4) Prep QC Batch: MP15225
(5) Prep QC Batch: MP15239

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC88255-1	**Date Sampled:**	05/16/19
Matrix:	AQ - Effluent	**Date Received:**	05/16/19
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	95.4	2.0	mg/l	1	05/25/19 05:32	NV	EPA 300/SW846 9056A
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	05/16/19 21:25	EB	SM3500CR B-11
Ignitability (Flashpoint)	> 200		Deg. F	1	05/30/19 18:58	EB	SW846 1010A/ASTM D93
Solids, Total	957	10	mg/l	1	05/21/19 10:55	RC	SM2540 B-11
Solids, Total Suspended	< 4.0	4.0	mg/l	1	05/21/19 11:07	RC	SM2540 D-11

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC88255-1R	**Date Sampled:**	05/16/19
Matrix:	AQ - Effluent	**Date Received:**	05/16/19
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
HEM Petroleum Hydrocarbons	< 5.0	5.0	mg/l	1	06/02/19 20:35	TM	EPA 1664A

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC88255-2	**Date Sampled:**	05/16/19
Matrix:	AQ - Effluent	**Date Received:**	05/16/19
Method:	EPA 624.1	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T238390.D	1	05/29/19 19:40	CSF	n/a	n/a	VT9834
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	104%		76-122%
2037-26-5	Toluene-D8 (SUR)	88%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	97%		80-120%
1868-53-7	Dibromofluoromethane (S)	101%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC88255-2	**Date Sampled:**	05/16/19
Matrix:	AQ - Effluent	**Date Received:**	05/16/19
Method:	EPA 625.1 EPA 625	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z137789.D	1	05/23/19 07:52	CS	05/20/19 12:45	OP20481	EZ6785
Run #2 [a]	5P60475.D	1	06/07/19 17:54	CC	06/06/19 04:00	OP20852	E5P2846
Run #3 [b]	5P60129.D	2	05/31/19 15:00	CC	05/20/19 12:45	OP20481	E5P2835

	Initial Volume	Final Volume
Run #1	900 ml	1.0 ml
Run #2	1050 ml	1.0 ml
Run #3	900 ml	1.0 ml

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-95-2	Phenol	ND	2.2	0.44	ug/l	
91-20-3	Naphthalene	ND	1.1	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.1	0.28	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Run# 3	Limits
367-12-4	2-Fluorophenol	24%	31%	12%	10-110%
4165-62-2	Phenol-d5	27%	21%	17%	10-110%
118-79-6	2,4,6-Tribromophenol	30% [c]	67%	11% [c]	35-147%
4165-60-0	Nitrobenzene-d5	84%	95%	70%	32-132%
321-60-8	2-Fluorobiphenyl	73%	71%	64%	40-117%
1718-51-0	Terphenyl-d14	61%	48%	61%	33-126%

(a) Sample extracted outside the holding time. Confirmation run.
(b) Confirmation run for surrogate recoveries.
(c) Outside in house control limits biased low. The results confirmed by re-extraction outside the holding time.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC88255-2	**Date Sampled:**	05/16/19
Matrix:	AQ - Effluent	**Date Received:**	05/16/19
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	05/22/19	05/22/19	ND	EPA 200.7 [1]	EPA 200.7 [2]

(1) Instrument QC Batch: MA46773
(2) Prep QC Batch: MP15225

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC88255-2	**Date Sampled:**	05/16/19
Matrix:	AQ - Effluent	**Date Received:**	05/16/19
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Carbonaceous Bod, 5 Day	< 5.0	5.0	mg/l	1	05/16/19 22:29	MO	SM5210 B-11
Nitrogen, Nitrate [a]	< 0.11	0.11	mg/l	1	05/30/19 16:19	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	05/30/19 16:19	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	05/16/19 21:38	MO	SM4500NO2 B-11
Nitrogen, Total [b]	2.2	0.30	mg/l	1	05/30/19 16:19	KI	SM4500 A-11
Nitrogen, Total Kjeldahl	2.2	0.20	mg/l	1	05/23/19 17:04	KI	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)
(b) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC88255-2R	**Date Sampled:**	05/16/19
Matrix:	AQ - Effluent	**Date Received:**	05/16/19
Method:	EPA 608 EPA 608	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2435715.D	1	05/29/19 12:35	TR	05/28/19 06:25	OP20656	GXX6700
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	0.037	0.050	0.025	ug/l	J
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	64%		10-156%
877-09-8	Tetrachloro-m-xylene	65%		10-156%
2051-24-3	Decachlorobiphenyl	58%		10-143%
2051-24-3	Decachlorobiphenyl	71%		10-143%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

Parameter Certification Exceptions

Job Number: JC88255
Account: HLANJPR Wood Environment & Infrastructure Solut.
Project: Review Avenue, Long Island City, NY

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Ignitability (Flashpoint)		**SW846 1010A/ASTM D93**	AQ	SGS is not certified for this parameter.[a]
Nitrogen, Total		**SM4500 A-11**	AQ	SGS is not certified for this parameter.[b]

(a) Lab cert for analyte/method not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.
(b) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

GW

E
PN
COMP

CHAIN OF CUSTODY

PAGE 1 OF 2

ACCUTEST LABORATORIES

2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking #:
Bottle Order Control #: AK-051319-28
Accutest Quote #: DK4_2016_911
Accutest Job #: JC88255

Client / Reporting Information

Company Name: Amec Foster Wheeler
Street Address: 200 American Metro BLVD #113
City / State / Zip: Hamilton, NJ 08619
Project Contact: Vincent.Whelan@amecfw.com
E-mail:
Phone #: M: 609-815-6175, D: 609-689-2832, F: 609-689-2838
Fax #:
Sampler(s) Name(s): N. DELLAFAVE
Phone #:

Project Information

Project Name: Review Ave, Long Island City, Queens
Street: 37-30 & 37-80 Review Avenue
City / State: Long Island City, Queens, NY
Project #: 3480160502
Client Purchase Order #: C012700305
Project Manager: Tim Kessler

Billing Information (if different from Report to)

Company Name:
Street Address:
City / State / Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Flashpoint (Ignitability) - SW846 1010A	Metals (Cd, Cu, Pb, Ni, Zn) - EPA 200.7; Mercury (Hg) - EPA 245.1	SGT HEM - EPA 1664A SGT	Total Solids (SM2540 B-11); Chloride (EPA 300.0 / SM4500 Cl-C)	Total Suspended Solids - SM2540 D-11	VOC (V624BTXM, VMS+PCE, VMS+14DCB) - EPA 624	Hexavalent Chromium (SM3500 Cr B)	Phenol, Naphthalene, 1,2,4-Trichlorobenzene - EPA 625	CBOD5 - SM5210 B-11	Metals (Cadmium Only) - EPA 200.7	PCBs, Low Level (P608PCBLL) - EPA 608	LAB USE ONLY
1	RA-EFF-G		5-16-19	1155	NDF	GW	11	5		1		5				X	X	H	X	X	X	X					E64
2	RA-EFF-C		5-16-19	1145	NDF	GW	11	3		1	1	6											X	X	X	H	A26
	~~RA-VOC-C1~~		~~5-16-19~~	~~0835~~	~~NDF~~	GW	~~3~~																				M9
	~~RA-VOC-C2~~					GW																					U1185
3	~~RA-VOC-C3~~					GW																					
	~~RA-VOC-C4~~					GW																					L20
																											A26

INITIAL ASESSMENT: BDL
LABEL VERIFICATION:

Turnaround Time (Business days)

Approved By (Accutest PM): / Date:

- [X] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] other

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [X] Other NYCDEP

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

COMPOSITE RA-VOC-C1 to RA-VOC-C4 IN LAB TO BE USED FOR RA-EFF-C VOC ANALYSIS. **HOLD SGT-HEM & PCB SAMPLES**

HEX CHROME TEST METHOD ONLY ALLOWS 24HR HOLD TIME

Sample Custody must be documented below each time samples change possession, including courier deli

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
	5-16-19 / 1526	1	2		2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3		3	4		4
Relinquished by:	Date Time:	Received By:	Custody Seal # 25800 25802	[ ] Intact [ ] Not intact	Preserved where applicable [ ]
5		6			On Ice [X] Cooler Temp: 2.4°C 2.7°C

ACCUTEST LABORATORIES

CHAIN OF CUSTODY

PAGE 2 OF 2

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking #:
Bottle Order Control #: AK-051319-28
Accutest Quote #: DK4_2016_911
Accutest Job #: JC88255

Client / Reporting Information

Company Name: Amec Foster Wheeler
Street Address: 200 American Metro BLVD #113
City / State / Zip: Hamilton, NJ 08619
Project Contact / E-mail: Vincent.Whelan@amecfw.com
Phone # / Fax #: M: 609-815-6175, D: 609-689-2832, F: 609-689-2838
Sampler(s) Name(s) / Phone #: N. DellaFave

Project Information

Project Name: Review Ave, Long Island City, Queens
Street: 37-30 & 37-80 Review Avenue
City / State: Long Island City, Queens, NY
Project #: 3480160502
Client Purchase Order #: C012700305
Project Manager: Tim Kessler

Billing Information (if different from Report to)

Company Name:
Street Address:
City / State / Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Total Nitrogen (TKN, NO2/NO3) - SM18 4500N	Composite VOCs (4:1 Ratio)	VOC (V624CHLFRM, VMS+CTC, VMS+TCA) - EPA 624	LAB USE ONLY
	~~RA-EFF-G~~		~~5-16-19~~	~~1155~~	~~NDF~~	~~GW~~	~~11~~												
	RA-EFF-C		5-16-19	1145	NDF	GW	11	3		1	1	6				X		X	
	RA-VOC-C1		5-16-19	0835	NDF	GW	3	3									X		
	RA-VOC-C2		5-16-19	0935	NDF	GW	3	3									X		
2	RA-VOC-C3		5-16-19	1035	NDF	GW	3	3									X		
	RA-VOC-C4		5-16-19	1135	NDF	GW	3	3									X		

Turnaround Time (Business days)

Approved By (Accutest PM): / Date:

- [X] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] other

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [X] Other NYCDEP

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

COMPOSITE RA-VOC-C1 to RA-VOC-C4 IN LAB TO BE USED FOR RA-EFF-C VOC ANALYSIS. **HOLD SGT-HEM & PCB SAMPLES**

HEX CHROME TEST METHOD ONLY ALLOWS 24HR HOLD TIME

Sample Custody must be documented below each time samples change possession, including courier deli

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	5/16/19 1526	1	2		2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3		3	4		4
Relinquished by:	Date Time:	Received By:	Custody Seal # 25800 / 25802	Intact / Not intact	Preserved where applicable	On Ice	Cooler Temp.
5		5					

SGS Sample Receipt Summary

Job Number: JC88255 **Client:** WOOD ENVIRONMENT & INFRASTRUCT **Project:** REVIEW AVENUE, LONG ISLAND CITY, NY

Date / Time Received: 5/16/2019 3:26:00 PM **Delivery Method:** Client **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (2.7); Cooler 2: (2.3);

Cooler Temps (Corrected) °C: Cooler 1: (1.7); Cooler 2: (1.3);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:	IR Gun	
3. Cooler media:	Ice (Bag)	
4. No. Coolers:	2	

Quality Control Preservation	Y	N	N/A
1. Trip Blank present / cooler:	☐	☑	☐
2. Trip Blank listed on COC:	☐	☑	☐
3. Samples preserved properly:	☑	☐	
4. VOCs headspace free:	☑	☐	☐

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Test Strip Lot #s: pH 1-12: 206717 pH 12+: 208717 Other: (Specify)

Comments: -2 Client submitted 3 HCL Vials as "RA-EFF-C" but also included Vials for Compositing of RA-VOC-C1 thru -C4 which is done in lab per history. Vials that client submitted for RA-EFF-C will be placed on hold and composite request has been sent for RA-VOC-C1 thru C4. Please verify.

SM089-02 Rev. Date 12/1/16

Responded to by: ak Response Date: 5/17

yes, the composite sample produced from samples RA-VOC-C1 through C4 should then become RA-EFF-C and analyzed for VOC's method EPA 624 as listed.

Job Change Order: JC88255

Requested Date: 5/22/2019 **Received Date:** 5/16/2019

Account Name: Wood Environment & Infrastructur **Due Date:** 5/30/2019

Project Description: Review Avenue, Long Island City, NY **Deliverable:** NYASPA

C/O Initiated By: AK **PM:** KR **TAT (Days):** 14

==========

Sample #: JC88255-1 **Change:**

Dept: Relog for PHC1664

TAT: 14

RA-EFF-G

==========

Sample #: JC88255-2 **Change:**

Dept: relog for P608PCBLL

TAT: 14

RA-EFF-C

==========

Above Changes Per: Tim Kessler **Date/Time:** 5/22/2019 8:54:45 AM

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Page 1 of 1

JC88255: Chain of Custody
Page 5 of 5

Internal Sample Tracking Chronicle

Wood Environment & Infrastructure Solut.

Job No: JC88255

Review Avenue, Long Island City, NY
Project No: C012700305/3480160502

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC88255-1 RA-EFF-G	Collected: 16-MAY-19 11:55 By: NDF		Received: 16-MAY-19 By: AS			
JC88255-1	SM3500CR B-11	16-MAY-19 21:25	EB			XCRSM
JC88255-1	SM2540 B-11	21-MAY-19 10:55	RC			TS
JC88255-1	SM2540 D-11	21-MAY-19 11:07	RC			TSS
JC88255-1	EPA 245.1	22-MAY-19 13:48	EAL	22-MAY-19	EAL	HG
JC88255-1	EPA 200.7	22-MAY-19 22:32	ND	22-MAY-19	TG	CD,CU,PB,ZN
JC88255-1	EPA 200.7	23-MAY-19 15:25	ND	22-MAY-19	TG	NI
JC88255-1	EPA 300/SW846 9056A	25-MAY-19 05:32	NV	24-MAY-19	NV	CHL
JC88255-1	EPA 624.1	28-MAY-19 14:15	CSF			V624BTXM
JC88255-1	SW846 1010A/ASTM D93	30-MAY-19 18:58	EB			IGN
JC88255-2 RA-EFF-C	Collected: 16-MAY-19 11:45 By: NDF		Received: 16-MAY-19 By: AS			
JC88255-2	SM4500NO2 B-11	16-MAY-19 21:38	MO			NO2
JC88255-2	SM5210 B-11	16-MAY-19 22:29	MO	16-MAY-19	MO	CBOD5
JC88255-2	EPA 200.7	22-MAY-19 22:37	ND	22-MAY-19	TG	CD
JC88255-2	EPA 625.1	23-MAY-19 07:52	CS	20-MAY-19	JF	AB625SL2
JC88255-2	EPA 351.2/LACHAT	23-MAY-19 17:04	KI	21-MAY-19	EB	TKN
JC88255-2	EPA 624.1	29-MAY-19 19:40	CSF			V624CHLFRM,VMS+ CTC,VMS+ TCA
JC88255-2	SM4500 A-11	30-MAY-19 16:19	KI			TNIT
JC88255-2	EPA353.2/SM4500NO2B	30-MAY-19 16:19	KI			NO3O
JC88255-2	EPA 353.2/LACHAT	30-MAY-19 16:19	KI	30-MAY-19	KI	NO32
JC88255-2	EPA 625.1	31-MAY-19 15:00	CC	20-MAY-19	JF	AB625SL2
JC88255-2	EPA 625.1	07-JUN-19 17:54	CC	06-JUN-19	BJ	AB625SL2
JC88255-1R RA-EFF-G	Collected: 16-MAY-19 11:55 By: NDF		Received: 16-MAY-19 By: AS			
JC88255-1R	EPA 1664A	02-JUN-19 20:35	TM	02-JUN-19	TM	PHC1664
JC88255-2R RA-EFF-C	Collected: 16-MAY-19 11:45 By: NDF		Received: 16-MAY-19 By: AS			
JC88255-2R	EPA 608	29-MAY-19 12:35	TR	28-MAY-19	BJ	P608PCBLL

SGS Internal Chain of Custody

Job Number: JC88255
Account: HLANJPR Wood Environment & Infrastructure Solut.
Project: Review Avenue, Long Island City, NY
Received: 05/16/19

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC88255-1.1	Secured Storage	Sahara Feliciano	06/01/19 12:18	Retrieve from Storage
JC88255-1.1	Sahara Feliciano	Secured Staging Area	06/01/19 12:18	Return to Storage
JC88255-1.1	Secured Staging Area	Tharun Murali	06/02/19 08:50	Retrieve from Storage
JC88255-1.1	Tharun Murali		06/02/19 20:43	Depleted
JC88255-1.1.1	Tharun Murali	TCLP	06/02/19 08:50	Leachate from JC88255-1.1
JC88255-1.3	Secured Storage	Matthew Robbins	05/17/19 17:30	Retrieve from Storage
JC88255-1.3	Matthew Robbins	Secured Staging Area	05/17/19 17:31	Return to Storage
JC88255-1.3	Secured Staging Area	Taylor Gorman	05/18/19 05:01	Retrieve from Storage
JC88255-1.3	Taylor Gorman	Secured Storage	05/18/19 05:49	Return to Storage
JC88255-1.3	Secured Storage	Sahara Feliciano	05/19/19 13:56	Retrieve from Storage
JC88255-1.3	Sahara Feliciano	Secured Staging Area	05/19/19 13:56	Return to Storage
JC88255-1.3	Secured Staging Area	Lindsey Lee	05/20/19 07:41	Retrieve from Storage
JC88255-1.3	Lindsey Lee	Secured Storage	05/20/19 14:06	Return to Storage
JC88255-1.3	Secured Storage	Benjamin Gaines	05/21/19 17:12	Retrieve from Storage
JC88255-1.3	Benjamin Gaines	Secured Staging Area	05/21/19 17:12	Return to Storage
JC88255-1.3	Secured Staging Area	Taylor Gorman	05/22/19 04:29	Retrieve from Storage
JC88255-1.3	Taylor Gorman	Secured Storage	05/22/19 10:18	Return to Storage
JC88255-1.3.1	Taylor Gorman	Metals Digestion	05/18/19 05:48	Digestate from JC88255-1.3
JC88255-1.3.1	Metals Digestion	Taylor Gorman	05/18/19 05:48	Digestate from JC88255-1.3
JC88255-1.3.1	Taylor Gorman	Metals Digestate Storage	05/18/19 05:48	Return to Storage
JC88255-1.3.2	Taylor Gorman	Metals Digestion	05/22/19 06:44	Digestate from JC88255-1.3
JC88255-1.3.2	Metals Digestion	Taylor Gorman	05/22/19 06:45	Digestate from JC88255-1.3
JC88255-1.3.2	Taylor Gorman	Metals Digestate Storage	05/22/19 06:45	Return to Storage
JC88255-1.5	Secured Storage	Todd Shoemaker	05/21/19 08:47	Retrieve from Storage
JC88255-1.5	Todd Shoemaker	Secured Staging Area	05/21/19 08:48	Return to Storage
JC88255-1.5	Secured Staging Area	Ruchitaben Chauhan	05/21/19 12:30	Retrieve from Storage
JC88255-1.5	Ruchitaben Chauhan	Secured Storage	05/21/19 17:04	Return to Storage
JC88255-1.6	Secured Storage	Todd Shoemaker	05/21/19 08:47	Retrieve from Storage
JC88255-1.6	Todd Shoemaker	Secured Staging Area	05/21/19 08:48	Return to Storage
JC88255-1.6	Secured Staging Area	Ruchitaben Chauhan	05/21/19 12:30	Retrieve from Storage
JC88255-1.6	Ruchitaben Chauhan	Secured Storage	05/21/19 17:04	Return to Storage
JC88255-1.7	Secured Storage	Sahara Feliciano	05/16/19 17:29	Retrieve from Storage
JC88255-1.7	Sahara Feliciano	Secured Staging Area	05/16/19 17:29	Return to Storage
JC88255-1.7	Secured Staging Area	Michael Olcott	05/16/19 17:39	Retrieve from Storage
JC88255-1.7	Michael Olcott	Secured Storage	05/16/19 22:54	Return to Storage
JC88255-1.7	Secured Storage	Sahara Feliciano	05/23/19 21:17	Retrieve from Storage
JC88255-1.7	Sahara Feliciano	Secured Staging Area	05/23/19 21:17	Return to Storage

SGS Internal Chain of Custody

Job Number: JC88255
Account: HLANJPR Wood Environment & Infrastructure Solut.
Project: Review Avenue, Long Island City, NY
Received: 05/16/19

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC88255-1.7	Secured Staging Area	Natasha Verma	05/24/19 12:33	Retrieve from Storage
JC88255-1.7	Natasha Verma	Secured Storage	05/24/19 15:18	Return to Storage
JC88255-1.8	Secured Storage	Todd Shoemaker	05/28/19 13:44	Retrieve from Storage
JC88255-1.8	Todd Shoemaker	Secured Staging Area	05/28/19 13:44	Return to Storage
JC88255-1.8	Secured Staging Area	Elaine Banting	05/29/19 01:40	Retrieve from Storage
JC88255-1.8	Elaine Banting	Secured Storage	05/29/19 02:00	Return to Storage
JC88255-1.8	Secured Staging Area	Dwayne Johnson	05/30/19 10:36	Retrieve from Storage
Analyst chain of custody update error.				
JC88255-1.8	Dwayne Johnson	Secured Staging Area	05/30/19 10:37	Return to Storage
JC88255-1.8	Secured Staging Area	Todd Shoemaker	05/30/19 14:44	Retrieve from Storage
JC88255-1.8	Todd Shoemaker	Secured Storage	05/30/19 14:45	Return to Storage
JC88255-1.9	Secured Storage	Chelsea San Filippo	05/28/19 16:53	Retrieve from Storage
JC88255-1.9	Chelsea San Filippo	GCMSN	05/28/19 16:53	Load on Instrument
JC88255-1.9	GCMSN	Chelsea San Filippo	05/29/19 13:44	Unload from Instrument
JC88255-1.9	Chelsea San Filippo	Secured Storage	05/29/19 13:44	Return to Storage
JC88255-2.1	Secured Storage	Sahara Feliciano	05/26/19 10:08	Retrieve from Storage
JC88255-2.1	Sahara Feliciano	Secured Staging Area	05/26/19 10:08	Return to Storage
JC88255-2.1	Secured Staging Area	Brian Johnson	05/28/19 05:42	Retrieve from Storage
JC88255-2.1	Brian Johnson		05/28/19 14:24	Depleted
JC88255-2.1.1	Brian Johnson	Organics Prep	05/28/19 05:43	Extract from JC88255-2.1
JC88255-2.1.1	Organics Prep	Brian Johnson	05/28/19 14:20	Extract from JC88255-2.1
JC88255-2.1.1	Brian Johnson	Extract Storage	05/28/19 14:20	Return to Storage
JC88255-2.1.1	Extract Storage	Tianwei Ruan	05/28/19 16:32	Retrieve from Storage
JC88255-2.1.1	Tianwei Ruan	GCXX	05/28/19 16:32	Load on Instrument
JC88255-2.2	Secured Storage	Dwayne Johnson	05/20/19 09:31	Retrieve from Storage
JC88255-2.2	Dwayne Johnson	Secured Staging Area	05/20/19 09:31	Return to Storage
JC88255-2.2	Secured Staging Area	Brian Johnson	05/20/19 13:24	Retrieve from Storage
JC88255-2.2	Brian Johnson		05/20/19 15:07	Depleted
JC88255-2.2.1	Brian Johnson	Organics Prep	05/20/19 13:24	Extract from JC88255-2.2
JC88255-2.2.1	Organics Prep	Jonathon Ford	05/20/19 21:20	Extract from JC88255-2.2
JC88255-2.2.1	Jonathon Ford	Extract Storage	05/20/19 21:20	Return to Storage
JC88255-2.2.1	Extract Storage	Christopher Sowa	05/23/19 03:53	Retrieve from Storage
JC88255-2.2.1	Christopher Sowa	GCMSZ	05/23/19 03:53	Load on Instrument
JC88255-2.2.1	GCMSZ	Angela Rastelli	06/03/19 12:05	Unload from Instrument
JC88255-2.2.1	Angela Rastelli	Extract Freezer	06/03/19 12:05	Return to Storage
JC88255-2.4	Secured Storage	Sahara Feliciano	06/05/19 15:13	Retrieve from Storage
JC88255-2.4	Sahara Feliciano	Secured Staging Area	06/05/19 15:13	Return to Storage

SGS Internal Chain of Custody

Job Number: JC88255
Account: HLANJPR Wood Environment & Infrastructure Solut.
Project: Review Avenue, Long Island City, NY
Received: 05/16/19

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC88255-2.4	Secured Staging Area	Brian Johnson	06/06/19 01:59	Retrieve from Storage
JC88255-2.4	Brian Johnson		06/06/19 10:57	Depleted
JC88255-2.4.1	Brian Johnson	Organics Prep	06/06/19 01:59	Extract from JC88255-2.4
JC88255-2.4.1	Organics Prep	Brian Johnson	06/06/19 10:52	Extract from JC88255-2.4
JC88255-2.4.1	Brian Johnson	Extract Storage	06/06/19 10:52	Return to Storage
JC88255-2.4.1	Extract Storage	Christine Change	06/07/19 15:25	Retrieve from Storage
JC88255-2.4.1	Christine Change	GCMS5P	06/07/19 15:25	Load on Instrument
JC88255-2.5	Secured Storage	Matthew Robbins	05/17/19 17:30	Retrieve from Storage
JC88255-2.5	Matthew Robbins	Secured Staging Area	05/17/19 17:31	Return to Storage
JC88255-2.5	Secured Staging Area	Taylor Gorman	05/18/19 05:01	Retrieve from Storage
JC88255-2.5	Taylor Gorman	Secured Storage	05/18/19 05:49	Return to Storage
JC88255-2.5	Secured Storage	Benjamin Gaines	05/21/19 17:12	Retrieve from Storage
JC88255-2.5	Benjamin Gaines	Secured Staging Area	05/21/19 17:12	Return to Storage
JC88255-2.5	Secured Staging Area	Taylor Gorman	05/22/19 04:29	Retrieve from Storage
JC88255-2.5	Taylor Gorman	Secured Storage	05/22/19 10:18	Return to Storage
JC88255-2.5.1	Taylor Gorman	Metals Digestion	05/18/19 05:48	Digestate from JC88255-2.5
JC88255-2.5.1	Metals Digestion	Taylor Gorman	05/18/19 05:48	Digestate from JC88255-2.5
JC88255-2.5.1	Taylor Gorman	Metals Digestate Storage	05/18/19 05:48	Return to Storage
JC88255-2.5.2	Taylor Gorman	Metals Digestion	05/22/19 06:44	Digestate from JC88255-2.5
JC88255-2.5.2	Metals Digestion	Taylor Gorman	05/22/19 06:45	Digestate from JC88255-2.5
JC88255-2.5.2	Taylor Gorman	Metals Digestate Storage	05/22/19 06:45	Return to Storage
JC88255-2.6	Secured Storage	Todd Shoemaker	05/21/19 16:27	Retrieve from Storage
JC88255-2.6	Todd Shoemaker	Secured Staging Area	05/21/19 16:27	Return to Storage
JC88255-2.6	Secured Staging Area	Elaine Banting	05/21/19 22:57	Retrieve from Storage
JC88255-2.6	Elaine Banting	Secured Storage	05/21/19 23:37	Return to Storage
JC88255-2.6	Secured Storage	Todd Shoemaker	05/30/19 10:25	Retrieve from Storage
JC88255-2.6	Todd Shoemaker	Secured Staging Area	05/30/19 10:25	Return to Storage
JC88255-2.6	Secured Staging Area	Kimberly Ignace	05/30/19 11:38	Retrieve from Storage
JC88255-2.6	Kimberly Ignace	Secured Storage	05/30/19 19:27	Return to Storage
JC88255-2.7	Secured Storage	Sahara Feliciano	05/16/19 17:29	Retrieve from Storage
JC88255-2.7	Sahara Feliciano	Secured Staging Area	05/16/19 17:29	Return to Storage
JC88255-2.7	Secured Staging Area	Michael Olcott	05/16/19 17:39	Retrieve from Storage
JC88255-2.7	Michael Olcott	Secured Storage	05/16/19 22:54	Return to Storage
JC88255-2.8	Secured Storage	Sahara Feliciano	05/16/19 17:29	Retrieve from Storage
JC88255-2.8	Sahara Feliciano	Secured Staging Area	05/16/19 17:29	Return to Storage
JC88255-2.8	Secured Staging Area	Michael Olcott	05/16/19 17:39	Retrieve from Storage
JC88255-2.8	Michael Olcott	Secured Storage	05/16/19 22:54	Return to Storage

SGS Internal Chain of Custody

Job Number: JC88255
Account: HLANJPR Wood Environment & Infrastructure Solut.
Project: Review Avenue, Long Island City, NY
Received: 05/16/19

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC88255-2.11	Secured Storage	Chelsea San Filippo	05/29/19 16:32	Retrieve from Storage
JC88255-2.11	Chelsea San Filippo	GCMST	05/29/19 16:32	Load on Instrument
JC88255-2.11	GCMST	Chelsea San Filippo	05/30/19 11:24	Unload from Instrument
JC88255-2.11	Chelsea San Filippo	Secured Storage	05/30/19 11:24	Return to Storage
JC88255-2.12	Secured Storage	Chelsea San Filippo	05/29/19 16:14	Retrieve from Storage
JC88255-2.12	Chelsea San Filippo		05/29/19 16:14	Depleted

de maximis, inc.
1550 Pond Road
Suite 120
Allentown, PA 18104
(610) 435-1151
FAX (610) 435-8459

September 18, 2019

Via U.S. Mail

Mr. Sean H. Hulbert
Assistant Chemical Engineer
NYCDEP, Bureau of Wastewater Treatment
96-05 Horace Harding Expressway, 1st Floor
Corona, New York 11368

RE: Review Avenue Development Sites - 37-30 and 37-80 Review Avenue
File # C-5652
3rd Quarter 2019 Effluent Discharge Compliance Report

Dear Mr. Hulbert:

Enclosed is the 3rd Quarter 2019 - Effluent Discharge Compliance Report for the Review Avenue Development Sites. This report is being submitted on behalf of the Review Avenue System LLC administering the Review Avenue Development Site Brownfield Projects identified as RAD I and RAD II.

I would like to call to your attention the following, relative to discharge for the 3rd Quarter 2019:

- Approximately 670,930 gallons of water have been discharged to the sewer system since the last reporting period – May 2019.
- No constituents were reported above discharge criteria.

Please contact me with any questions at (610) 435-1151.

Sincerely,

de maximis, inc.

R. Craig Coslett
Project Coordinator for RADI and RAD II

Enclosures: Compliance Monitoring Report for 3rd Quarter 2019
CC: John Grathwol, NYDEC (Electronic Mail Only)
Tim Kessler, Wood Group (Electronic Mail Only)
Brent O'Dell, Wood Group (Electronic Mail Only)

File: 3216 / 3rd Q Compliance Report 2019

wood.

September 23, 2019

Mr. Sean H. Hulbert - Assistant Chemical Engineer
NYCDEP, Bureau of Wastewater Treatment
96-05 Horace Harding Expressway, 1st Floor
Corona, NY 11368

Subject: **3rd Quarter 2019 Effluent Discharge Compliance**
Review Avenue Development Sites
37-30 and 37-80 Review Avenue
Long Island City, Queens, New York, File # C-5652

Dear Mr. Hulbert:

Wood Environment and Infrastructure Solutions, Inc. (Wood), on behalf of Review Avenue System LLC, submits the effluent laboratory analysis data in connection with the letter of approval (LOA) for groundwater discharge to sanitary or combined sewer for the Review Avenue Development (RAD) Sites and LOA Extension dated October 12, 2018.

Wood collected the 3rd Quarter 2019 discharge compliance samples on August 14, 2019. Analytical results indicate no exceedances of the daily discharge limits for all parameters and no exceedances of the monthly discharge limits for all parameters, and therefore the discharge is in compliance with our LOA requirements. The analytical results collected for the 3rd quarter 2019 compliance sampling are summarized on Table 1 attached. The total volume of groundwater discharged to the sanitary or combined sewer, since system start-up was 10,219,300 gallons as of the August 14th sampling event and 670,930 gallons since the last quarterly sampling event on May 16th.

If you have any questions, please contact either of the undersigned at (609) 689-2829.

Sincerely,

Wood Environment & Infrastructure Solutions, Inc.

Brent C. O'Dell, P.E.
Principal Engineer – Civil

Timothy C. Kessler
Senior Associate Engineer/PM

Attachments: Table 1 – Summary of Groundwater Analytical Results

cc: R. Craig Coslett – Review Avenue System LLC

200 American Metro Blvd
Suite 113
Hamilton, NJ 08619
609-689-2829
woodplc.com

Table 1
Summary of Analytical Results - Groundwater Treatment System
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	NYCDEP Daily Limit	NYCDEP Monthly Limit	RA-EFF-G		RA-EFF-C	
Compliance Period:				3Q 2019		3Q 2019	
Sample Date:				8/14/2019		8/14/2019	
Lab Sample ID:				JC93215-1		JC93215-2	
Non-polar material[1]	mg/L	50	NL	5.6		-	
pH[2]	SUs	5 - 12	NL	7.36		-	
Temperature[2]	ºF	150	NL	65.00		-	
Flash Point[3]	ºF	> 140	NL	> 200		-	
Cadmium (Instantaneous)	mg/L	2	NL	<0.003	U	-	
Cadmium (Composite)	mg/L	0.69	NL	-		<0.003	U
Chromium (VI)	mg/L	5	NL	<0.010	U	-	
Copper	mg/L	5	NL	<0.010	U	-	
Lead	mg/L	2	NL	<0.003	U	-	
Mercury	mg/L	0.05	NL	<0.0002	U	-	
Nickel	mg/L	3	NL	<0.01	U	-	
Zinc	mg/L	5	NL	0.085		-	
Benzene	µg/L	134	57	0.34	U	-	
Carbon Tetrachloride	µg/L	NL	NL	-		0.55	U
Chloroform	µg/L	NL	NL	-		0.50	U
1,4-Dichlorobenzene	µg/L	NL	NL	0.63	U	-	
Ethylbenzene	µg/L	380	142	0.30	U	-	
MTBE (Methyl-Tert-Butyl-Ether)	µg/L	50	NL	0.87	U	-	
Napthalene	µg/L	47	19	-		0.23	U
Phenol	µg/L	NL	NL	-		0.38	U
Tetrachloroethylene (Perc)	µg/L	20	NL	0.9	U	-	
Toluene	µg/L	74	28	0.36	U	-	
1,2,4-Trichlorobenzene	µg/L	NL	NL	-		0.25	U
1,1,1-Trichloroethane	µg/L	NL	NL	-		0.54	U
Xylenes (Total)	µg/L	74	28	0.35	U	-	
PCBs (Total)	µg/L	1	NL	-		0.034	U
Total Suspended Solids (TSS)	mg/L	350	NL	16.6		-	
CBOD	mg/L	NL	NL	-		<10	U
Chloride	mg/L	NL	NL	109		-	
Total Nitrogen	mg/L	NL	NL	-		2.0	
Total Solids	mg/L	NL	NL	973		-	

Prepared by: TK 09/18/19

Table 1
Summary of Analytical Results - Groundwater Treatment System
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Notes:
RA-EFF-G: Instantaneous (Grab) Sample
RA-EFF-C: 4-Hour Flow Weighted Composite Sample
Bold/Shaded: Concentration exceeds daily limit
Underline: Concentration exceeds monthly limit
1. Non-polar Material reported by lab as "Silica Gel Treated n-Hexane Extractable Material (SGT-HEM)"
2. pH and Temperature measured in field
3. Flash Point reported by lab as Ignitability
4. Temperature was estimated

Definitions:
MDL: Method Detection Limit
RL: Reporting Limit
NL: No Limit

Data Qualifiers:
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U: Indicates the analyte was not detected at the indicated MDL.

Prepared by: TK 09/18/19

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Wood Environment & Infrastructure Solut.

Review Avenue, Long Island City, NY

3480160502 PO#C01270035

SGS Job Number: JC93215

Sampling Date: 08/14/19

Report to:

Wood Environment & Infrastructure Solut.

bianca.abrera@woodplc.com

ATTN: Bianca Abrera

Total number of pages in report: 24

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp
General Manager

Client Service contact: Kelly Ramos 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

Sections: 1 2 3 4 5

Table of Contents

Sample Summary

Wood Environment & Infrastructure Solut.

Job No: JC93215

Review Avenue, Long Island City, NY
Project No: 3480160502 PO#C01270035

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
JC93215-1	08/14/19	11:00	JL	08/14/19	AQ	Effluent	RA-EFF-G
JC93215-1R	08/14/19	11:00	JL	08/14/19	AQ	Effluent	RA-EFF-G
JC93215-2	08/14/19	10:45	JL	08/14/19	AQ	Effluent	RA-EFF-C
JC93215-2R	08/14/19	10:45	JL	08/14/19	AQ	Effluent	RA-EFF-C

This report contains results reported as ND = Not detected. The following applies:
Organics ND = Not detected above the MDL

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Wood Environment & Infrastructure Solut.	**Job No**	JC93215
Site:	Review Avenue, Long Island City, NY	**Report Date**	8/30/2019 12:04:44 P

On 08/14/2019, 2 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 3.5 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JC93215 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Please refer to certification exceptions summary for additional certification information.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Volatiles By Method EPA 624.1

Matrix: AQ **Batch ID:** V2E6907

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC93807-1MS, JC93807-1MSD were used as the QC samples indicated.

MS Semi-volatiles By Method EPA 625.1

Matrix: AQ **Batch ID:** OP22123

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

GC/LC Semi-volatiles By Method EPA 608

Matrix: AQ **Batch ID:** OP22271

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Metals Analysis By Method EPA 200.7

Matrix: AQ **Batch ID:** MP16849

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC93153-1MS, JC93153-1MSD, JC93153-1SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Copper, Nickel are outside control limits. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP16849-SD1 for Zinc: Serial dilution indicates possible matrix interference. Results confirmed with analysis of second dilution.

Metals Analysis By Method EPA 245.1

Matrix: AQ **Batch ID:** MP16910

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC93195-3MS, JC93195-3MSD were used as the QC samples for metals.

General Chemistry By Method EPA 1664A

Matrix: AQ **Batch ID:** GP23342

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC93426-1DUP, JC93426-1MS were used as the QC samples for HEM Petroleum Hydrocarbons.

General Chemistry By Method EPA 300/SW846 9056A

Matrix: AQ **Batch ID:** GP23067

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC93233-1DUP, JC93233-1MS were used as the QC samples for Chloride.
- Matrix Spike Recovery(s) for Chloride are outside control limits. Probable cause due to matrix interference.

General Chemistry By Method EPA 351.2/LACHAT

Matrix: AQ **Batch ID:** GP23072

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC93357-1DUP, JC93357-1MS were used as the QC samples for Nitrogen, Total Kjeldahl.
- Matrix Spike Recovery(s) for Nitrogen, Total Kjeldahl are outside control limits. Spike recovery indicates possible matrix interference.

General Chemistry By Method EPA 353.2/LACHAT

Matrix: AQ **Batch ID:** GP23262

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC93177-2DUP, JC93215-2MS were used as the QC samples for Nitrogen, Nitrate + Nitrite.

General Chemistry By Method EPA353.2/SM4500NO2B

Matrix: AQ **Batch ID:** R180547

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC93215-2 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

General Chemistry By Method SM2540 B-11

Matrix: AQ **Batch ID:** GN98700

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC93215-1DUP were used as the QC samples for Solids, Total.

General Chemistry By Method SM2540 D-11

Matrix: AQ **Batch ID:** GN98760

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC93213-1DUP were used as the QC samples for Solids, Total Suspended.

General Chemistry By Method SM3500CR B-11

Matrix: AQ	Batch ID: GN98711

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC93215-1DUP, JC93215-1MS were used as the QC samples for Chromium, Hexavalent.

General Chemistry By Method SM4500 A-11

Matrix: AQ	Batch ID: R180546

- The data for SM4500 A-11 meets quality control requirements.
- JC93215-2 for Nitrogen, Total: Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

General Chemistry By Method SM4500NO2 B-11

Matrix: AQ	Batch ID: GN98687

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC93179-3DUP, JC93179-3MS were used as the QC samples for Nitrogen, Nitrite.

General Chemistry By Method SM5210 B-11

Matrix: AQ	Batch ID: GP23011

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC93178-1ADUP were used as the QC samples for Carbonaceous Bod, 5 Day.

General Chemistry By Method SW846 1010A/ASTM D93

Matrix: AQ	Batch ID: GN99104

- Sample(s) JC93215-1DUP were used as the QC samples for Ignitability (Flashpoint).

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Summary of Hits

Job Number: JC93215
Account: Wood Environment & Infrastructure Solut.
Project: Review Avenue, Long Island City, NY
Collected: 08/14/19

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC93215-1	**RA-EFF-G**					
Zinc		85.0	20		ug/l	EPA 200.7
Chloride		109	2.0		mg/l	EPA 300/SW846 9056A
Ignitability (Flashpoint)		> 200			Deg. F	SW846 1010A/ASTM D93
Solids, Total		973	10		mg/l	SM2540 B-11
Solids, Total Suspended		16.6	4.0		mg/l	SM2540 D-11
JC93215-1R	**RA-EFF-G**					
HEM Petroleum Hydrocarbons		5.6	5.0		mg/l	EPA 1664A
JC93215-2	**RA-EFF-C**					
Nitrogen, Total [a]		2.0	0.30		mg/l	SM4500 A-11
Nitrogen, Total Kjeldahl		2.0	0.20		mg/l	EPA 351.2/LACHAT
JC93215-2R	**RA-EFF-C**					

No hits reported in this sample.

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC93215-1	**Date Sampled:**	08/14/19
Matrix:	AQ - Effluent	**Date Received:**	08/14/19
Method:	EPA 624.1	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E155406.D	1	08/27/19 18:28	CSF	n/a	n/a	V2E6907
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.34	ug/l	
108-88-3	Toluene	ND	1.0	0.36	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	0.35	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.87	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.63	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	102%		76-122%
2037-26-5	Toluene-D8 (SUR)	105%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	101%		80-120%
1868-53-7	Dibromofluoromethane (S)	104%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RA-EFF-G
Lab Sample ID: JC93215-1
Matrix: AQ - Effluent
Project: Review Avenue, Long Island City, NY

Date Sampled: 08/14/19
Date Received: 08/14/19
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/15/19	08/16/19	ND	EPA 200.7 [1]	EPA 200.7 [3]
Copper	< 10	10	ug/l	1	08/15/19	08/16/19	ND	EPA 200.7 [1]	EPA 200.7 [3]
Lead	< 3.0	3.0	ug/l	1	08/15/19	08/16/19	ND	EPA 200.7 [1]	EPA 200.7 [3]
Mercury	< 0.20	0.20	ug/l	1	08/20/19	08/21/19	LL	EPA 245.1 [2]	EPA 245.1 [4]
Nickel	< 10	10	ug/l	1	08/15/19	08/16/19	ND	EPA 200.7 [1]	EPA 200.7 [3]
Zinc	85.0	20	ug/l	1	08/15/19	08/16/19	ND	EPA 200.7 [1]	EPA 200.7 [3]

(1) Instrument QC Batch: MA47297
(2) Instrument QC Batch: MA47314
(3) Prep QC Batch: MP16849
(4) Prep QC Batch: MP16910

RL = Reporting Limit

Report of Analysis

Client Sample ID: RA-EFF-G
Lab Sample ID: JC93215-1
Matrix: AQ - Effluent
Project: Review Avenue, Long Island City, NY

Date Sampled: 08/14/19
Date Received: 08/14/19
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	109	2.0	mg/l	1	08/16/19 17:20	NV	EPA 300/SW846 9056A
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	08/15/19 09:55	JOO	SM3500CR B-11
Ignitability (Flashpoint)	> 200		Deg. F	1	08/24/19 17:39	JOO	SW846 1010A/ASTM D93
Solids, Total	973	10	mg/l	1	08/16/19 13:10	RC	SM2540 B-11
Solids, Total Suspended	16.6	4.0	mg/l	1	08/16/19 09:40	RC	SM2540 D-11

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC93215-1R	**Date Sampled:**	08/14/19
Matrix:	AQ - Effluent	**Date Received:**	08/14/19
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
HEM Petroleum Hydrocarbons	5.6	5.0	mg/l	1	08/29/19 13:00	JOO	EPA 1664A

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC93215-2	**Date Sampled:**	08/14/19
Matrix:	AQ - Effluent	**Date Received:**	08/14/19
Method:	EPA 624.1	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E155407.D	1	08/27/19 18:58	CSF	n/a	n/a	V2E6907
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	101%		76-122%
2037-26-5	Toluene-D8 (SUR)	105%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	101%		80-120%
1868-53-7	Dibromofluoromethane (S)	103%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC93215-2	**Date Sampled:**	08/14/19
Matrix:	AQ - Effluent	**Date Received:**	08/14/19
Method:	EPA 625.1 EPA 625	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F186631.D	1	08/17/19 02:29	CB	08/15/19 07:00	OP22123	EF8034
Run #2							

	Initial Volume	Final Volume
Run #1	1020 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-95-2	Phenol	ND	2.0	0.38	ug/l	
91-20-3	Naphthalene	ND	0.98	0.23	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.98	0.25	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	26%		10-110%
4165-62-2	Phenol-d5	19%		10-110%
118-79-6	2,4,6-Tribromophenol	92%		35-147%
4165-60-0	Nitrobenzene-d5	78%		32-132%
321-60-8	2-Fluorobiphenyl	72%		40-117%
1718-51-0	Terphenyl-d14	80%		33-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC93215-2	**Date Sampled:**	08/14/19
Matrix:	AQ - Effluent	**Date Received:**	08/14/19
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	08/15/19	08/16/19	ND	EPA 200.7 [1]	EPA 200.7 [2]

(1) Instrument QC Batch: MA47297
(2) Prep QC Batch: MP16849

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC93215-2	**Date Sampled:**	08/14/19
Matrix:	AQ - Effluent	**Date Received:**	08/14/19
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Carbonaceous Bod, 5 Day	< 10	10	mg/l	1	08/14/19 22:10	EB	SM5210 B-11
Nitrogen, Nitrate [a]	< 0.11	0.11	mg/l	1	08/26/19 16:17	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	08/26/19 16:17	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	08/15/19 00:25	CM	SM4500NO2 B-11
Nitrogen, Total [b]	2.0	0.30	mg/l	1	08/26/19 16:17	KI	SM4500 A-11
Nitrogen, Total Kjeldahl	2.0	0.20	mg/l	1	08/20/19 09:51	KI	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)
(b) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC93215-2R	**Date Sampled:**	08/14/19
Matrix:	AQ - Effluent	**Date Received:**	08/14/19
Method:	EPA 608 EPA 608	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2439019.D	1	08/24/19 13:41	RK	08/23/19 07:00	OP22271	GXX6785
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	ND	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	103%		10-156%
877-09-8	Tetrachloro-m-xylene	109%		10-156%
2051-24-3	Decachlorobiphenyl	96%		10-143%
2051-24-3	Decachlorobiphenyl	128%		10-143%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

Job Number: JC93215
Account: HLANJPR Wood Environment & Infrastructure Solut.
Project: Review Avenue, Long Island City, NY

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Ignitability (Flashpoint)		**SW846 1010A/ASTM D93**	AQ	SGS is not certified for this parameter.[a]
Nitrogen, Total		**SM4500 A-11**	AQ	SGS is not certified for this parameter.[b]

(a) Lab cert for analyte/method not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.
(b) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

C,W

SGS

CHAIN OF CUSTODY

Page 1 of 2

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

E / PN / COMP

FED-EX Tracking #	Bottle Order Control # KR-08519-66
SGS Quote #	SGS Job # JC93215

Client / Reporting Information

- Company Name: Wood E&IS
- Street Address: 200 American Metro Blvd #113
- City: Hamilton, State: NJ, Zip: 8619
- Project Contact / E-mail: vincent.whelan@woodplc.com
- Phone #: 609-689-2832
- Sampler(s) Name(s) / Phone #: Jazmin Logan (347) 836-4445

Project Information

- Project Name: Review Avenue GWM
- Street: Review Avenue
- City: Long Island City, State: NY
- Project #: 3480160502
- Client Purchase Order #: C01270035
- Project Manager: Tim Kessler

Billing Information (If different from Report to): Company Name / Street Address / City / State / Zip / Attention:

Requested Analysis: Flashpoint (Ignitability) - SW846 1010A; Metals (Cd, Cu, Pb, Ni, Zn) - EPA 200.7 Mercury (Hg) - EPA 245.1; SGT HEM - EPA 1664A SGT; Total Solids, (SM 2540 B-11), Chloride (EPA 300.0 / SM4500 Cl-C); Total Suspended Solids - SM 2540 D-11; VOC (V624BTXM, VMS+PCE, VMS+14DCB) - EPA 624; Hexavalent Chromium (SM3500 Cr B); Phenol, Naphthalene, 1,2,4-Trichlorobenzene - EPA 625; CBOD5 - SM5210 B-11; Metals (Cadmium Only) - EPA 200.7; PCBs, Low Level (P608PCBLL) - EPA 608

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Grab (G) Comp (C)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	Flashpoint	Metals (Cd, Cu, Pb, Ni, Zn) / Hg	SGT HEM	Total Solids, Chloride	TSS	VOC	Hex Chrome	Phenol, Naphthalene, 1,2,4-TCB	CBOD5	Metals (Cd Only)	PCBs LL	LAB USE ONLY
1	RA-EFF-G		8/14/19	1100	JL	G	GW	11	5		1		5				X	X	H	X	X	X	X					E9
2	RA-EFF-C		8/14/19	1045	JL	C	GW	11 10	3		1	1	6											X	X	X	H	A30
	RA-VOC-C1		8/14/19	0745	JL	G	GW	3	3																			C18
	RA-VOC-C2		8/14/19	0845	JL	G	GW	3	3																			U718
	RA-VOC-C3		8/14/19	0945	JL	G	GW	3	3																			COMP
	RA-VOC-C4		8/14/19	1045	JL	G	GW	3	3																			L22
																												A30

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED - Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB - Equipment Blank; RB - Rinse Blank; TB - Trip Blank

Turn Around Time (Business Days)

Approved By (SGS PM): / Date: 2BAC

- ☐ 10 Business Days
- ☐ 5 Business Days
- ☐ 3 Business Days*
- ☐ 2 Business Days*
- ☐ 1 Business Day*
- ☒ Other Standard

INITIAL ASSESSMENT
LABEL VERIFICATION

All data available via Lablink
* Approval needed for 1-3 Business Day TAT

Deliverable

- ☐ Commercial "A" (Level 1)
- ☐ Commercial "B" (Level 2)
- ☐ NJ Reduced (Level 3)
- ☐ Full Tier I (Level 4)
- ☐ Commercial "C"
- ☐ NJ DKQP
- ☐ NYASP Category A
- ☒ NYASP Category B
- ☐ MA MCP Criteria
- ☐ CT RCP Criteria
- ☐ State Forms
- ☒ EDD Format NYSDEC
- ☐ DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Composite RA-VOC-C1 to RA-VOC-C4 in lab to be used for RA-EFF-C VOC analysis.

Hold SGT-HEM + PCB Samples.

Hex Chrome Test Method Only Allows 24HR Hold Time

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1 Jazmin Logan	8/14/19 1150	1	2	8/14/19 1705	2
3		3	4		4
5		5	Custody Seal # 22276	☐ Intact ☐ Not intact	Preserved where applicable: Absent; On Ice; Cooler Temp. °C 3.6 IR; Therm. ID:

Standard COC.xlsx

JC93215: Chain of Custody
Page 1 of 5

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

Page 2 of 2

FED-EX Tracking # | Bottle Order Control #
SGS Quote # | SGS Job # JC93215

Client / Reporting Information

Company Name: Wood E&IS
Street Address: 200 American Metro Blvd #113
City: Hamilton, NJ State: Zip: 8619
Project Contact: E-mail: vincent.whelan@woodplc.com
Phone #: 609-689-2832
Sampler(s) Name(s): Jazmin Logan (347) 836-4445 Phone #:

Project Information

Project Name: Review Avenue GWM
Street: Review Avenue
City: Long Island City State: NY
Project #: 3480160502
Client Purchase Order #: C01270035
Project Manager: Tim Kessler

Billing Information (if different from Report to)

Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analysis

Total Nitrogen (TKN, NO2/NO3) - SM18 4500N
Composite VOCs (4:1 Ratio)
VOC (V624CHLFRM, VMS+CTC, VMS+TCA) - EPA 624

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	EnCore	Total Nitrogen (TKN, NO2/NO3) - SM18 4500N	Composite VOCs (4:1 Ratio)	VOC (V624CHLFRM, VMS+CTC, VMS+TCA) - EPA 624	LAB USE ONLY
	RA-EFF-G		8/14/19	1100	JL	G	GW	11	5		1		5							
	RA-EFF-C		8/14/19	1045	JL	C	GW	8			1	1	6				X		X	
	RA-VOC-C1		8/14/19	0745	JL	G	GW	3	3									X		
2	RA-VOC-C2		8/14/19	0815	JL	G	GW	3	3									X		
	RA-VOC-C3		8/14/19	0945	JL	G	GW	3	3									X		
	RA-VOC-C4		8/14/19	1015	JL	G	GW	3	3									X		

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [ ] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [x] Other Standard

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [x] NYASP Category B
- [ ] MA MCP Criteria____
- [ ] CT RCP Criteria____
- [ ] State Forms
- [x] EDD Format ___NYSDEC___
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Composite RA-VOC-C1 to RA-VOC-C4 in lab to be used for RA-EFF-C VOC analysis.

Hold SGT-HEM + PCB Samples.

Hex Chrome Test Method Only Allows 24HR Hold Time

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date / Time:	Received By:
1	Jazmin Logan	8/14/19 1150	1
2			2
3			3
4			4
5			5

Relinquished by: 2 — Date / Time: 8/14/19 1700 — Received By: 2
Relinquished by: 4 — Date / Time: — Received By: 4

Custody Seal # 22276 — [ ] Intact [ ] Not Intact — Preserved where applicable [ ] Absent — Therm. ID: — On Ice [ ] — Cooler Temp. °C: 3.6 - IP

Standard COC.xlsx

SGS Sample Receipt Summary

Job Number: JC93215 **Client:** WOOD ENVIRONMENT & INFRASTRUCT **Project:** REVIEW AVENUE, LONG ISLAND CITY, NY

Date / Time Received: 8/14/2019 5:02:00 PM **Delivery Method:** Accutest Courier **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (3.6);

Cooler Temps (Corrected) °C: Cooler 1: (3.5);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 229517 pH 12+: 208717 Other: (Specify)

Comments: -2 Client submitted 3 HCL Vials as "RA-EFF-C" but also included Vials for Compositing of RA-VOC-C1 thru -C4 which is done in lab per history. Vials that client submitted for RA-EFF-C will be placed on hold and composite request has been sent for RA-VOC-C1 thru C4. Please verify.

SM089-02 Rev. Date 12/1/16

Responded to by: Kelly Ramos Response Date: 8/16/19

Should only use the vials for C1 through C4 for VOA composite. Keep RA-EFF-C on hold.

December 30, 2019

Mr. Sean H. Hulbert - Assistant Chemical Engineer
NYCDEP, Bureau of Wastewater Treatment
96-05 Horace Harding Expressway, 1st Floor
Corona, NY 11368

Subject: **4th Quarter 2019 Effluent Discharge Compliance**
Review Avenue Development Sites
37-30 and 37-80 Review Avenue
Long Island City, Queens, New York, File # C-5652

Dear Mr. Hulbert:

Wood Environment and Infrastructure Solutions, Inc. (Wood), on behalf of Review Avenue System LLC, submits the effluent laboratory analysis data in connection with the letter of approval (LOA) for groundwater discharge to sanitary or combined sewer for the Review Avenue Development (RAD) Sites and LOA Extension dated October 12, 2018.

Wood collected the 4th Quarter 2019 discharge compliance samples on November 14, 2019. Analytical results indicate no exceedances of the daily discharge limits for all parameters and no exceedances of the monthly discharge limits for all parameters, and therefore the discharge is in compliance with our LOA requirements. The analytical results collected for the 4th quarter 2019 compliance sampling are summarized on Table 1 attached. The total volume of groundwater discharged to the sanitary or combined sewer, since system start-up was 10,847,450 gallons as of the November 14th sampling event and 628,150 gallons since the last quarterly sampling event on August 14th.

If you have any questions, please contact either of the undersigned at (609) 689-2829.

Sincerely,

Wood Environment & Infrastructure Solutions, Inc.

Brent C. O'Dell, P.E.
Principal Engineer – Civil

Timothy C. Kessler
Senior Associate Engineer/PM

Attachments: Table 1 – Summary of Groundwater Analytical Results

cc: R. Craig Coslett – Review Avenue System LLC

200 American Metro Blvd
Suite 113
Hamilton, NJ 08619
609-689-2829
woodplc.com

Table 1
Summary of Analytical Results - Groundwater Treatment System
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	NYCDEP Daily Limit	NYCDEP Monthly Limit	RA-EFF-G		RA-EFF-C	
Compliance Period:				4Q 2019		4Q 2019	
Sample Date:				11/14/2019		11/14/2019	
Lab Sample ID:				JC98570-1		JC98570-2	
Non-polar material[1]	mg/L	50	NL	5.0	U	-	
pH[2]	SUs	5 - 12	NL	7.06		-	
Temperature[2]	ºF	150	NL	65.00		-	
Flash Point[3]	ºF	> 140	NL	> 200		-	
Cadmium (Instantaneous)	mg/L	2	NL	0.003	U	-	
Cadmium (Composite)	mg/L	0.69	NL	-		<0.003	U
Chromium (VI)	mg/L	5	NL	0.01	U	-	
Copper	mg/L	5	NL	0.01	U	-	
Lead	mg/L	2	NL	0.003	U	-	
Mercury	mg/L	0.05	NL	0.0002	U	-	
Nickel	mg/L	3	NL	0.01	U	-	
Zinc	mg/L	5	NL	0.02	U	-	
Benzene	µg/L	134	57	0.34	U	-	
Carbon Tetrachloride	µg/L	NL	NL	-		0.55	U
Chloroform	µg/L	NL	NL	-		0.50	U
1,4-Dichlorobenzene	µg/L	NL	NL	0.63	U	-	
Ethylbenzene	µg/L	380	142	0.30	U	-	
MTBE (Methyl-Tert-Butyl-Ether)	µg/L	50	NL	0.87	U	-	
Napthalene	µg/L	47	19	-		0.22	U
Phenol	µg/L	NL	NL	-		0.37	U
Tetrachloroethylene (Perc)	µg/L	20	NL	0.9	U	-	
Toluene	µg/L	74	28	0.36	U	-	
1,2,4-Trichlorobenzene	µg/L	NL	NL	-		0.24	U
1,1,1-Trichloroethane	µg/L	NL	NL	-		0.54	U
Xylenes (Total)	µg/L	74	28	0.35	U	-	
PCBs (Total)	µg/L	1	NL	-		0.034	U
Total Suspended Solids (TSS)	mg/L	350	NL	4.0	U	-	
CBOD	mg/L	NL	NL	-		1.6	
Chloride	mg/L	NL	NL	50.3		-	
Total Nitrogen	mg/L	NL	NL	-		9.5	
Total Solids	mg/L	NL	NL	727		-	

Prepared by: TK 12/12/19

Table 1
Summary of Analytical Results - Groundwater Treatment System
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Notes:
RA-EFF-G: Instantaneous (Grab) Sample
RA-EFF-C: 4-Hour Flow Weighted Composite Sample
Bold/Shaded: Concentration exceeds daily limit
Underline: Concentration exceeds monthly limit
1. Non-polar Material reported by lab as "Silica Gel Treated n-Hexane Extractable Material (SGT-HEM)"
2. pH and Temperature measured in field
3. Flash Point reported by lab as Ignitability
4. Temperature was estimated

Definitions:
MDL: Method Detection Limit
RL: Reporting Limit
NL: No Limit

Data Qualifiers:
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U: Indicates the analyte was not detected at the indicated MDL.

Prepared by: TK 12/12/19

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Wood Environment & Infrastructure Solut.

Review Avenue, Long Island City, NY

3480160502 PO#C01270035

SGS Job Number: JC98570

Sampling Date: 11/14/19

Report to:

Wood Environment & Infrastructure Soln.
200 American Metro Boulevard Suite 113
Hamilton, NJ 08619
Timothy.Kessler@woodplc.com; Vincent.Whelan@woodplc.com

ATTN: Tim Kessler

Total number of pages in report: 22

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Laura Degenhardt
General Manager

Client Service contact: Kelly Ramos 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

Sections: 1 2 3 4

Table of Contents

Sample Summary

Wood Environment & Infrastructure Solut.

Job No: JC98570

Review Avenue, Long Island City, NY
Project No: 3480160502 PO#C01270035

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
This report contains results reported as ND = Not detected. The following applies:							
Organics ND = Not detected above the MDL							
JC98570-1	11/14/19	11:00	JL	11/14/19	AQ	Effluent	RA-EFF-G
JC98570-1R	11/14/19	11:00	JL	11/14/19	AQ	Effluent	RA-EFF-G
JC98570-2	11/14/19	10:45	JL	11/14/19	AQ	Effluent	RA-EFF-C
JC98570-2R	11/14/19	10:45	JL	11/14/19	AQ	Effluent	RA-EFF-C

Summary of Hits

Job Number: JC98570
Account: Wood Environment & Infrastructure Solut.
Project: Review Avenue, Long Island City, NY
Collected: 11/14/19

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC98570-1	**RA-EFF-G**					
Chloride		50.3	2.0		mg/l	EPA 300/SW846 9056A
Ignitability (Flashpoint)		> 200			Deg. F	SW846 1010A/ASTM D93
Solids, Total		727	10		mg/l	SM2540 B-11
JC98570-1R	**RA-EFF-G**					
No hits reported in this sample.						
JC98570-2	**RA-EFF-C**					
Carbonaceous Bod, 5 Day [a]		1.6	1.0		mg/l	SM5210 B-11
Nitrogen, Total [b]		9.5	0.70		mg/l	SM4500 A-11
Nitrogen, Total Kjeldahl		9.5	0.60		mg/l	EPA 351.2/LACHAT
JC98570-2R	**RA-EFF-C**					
No hits reported in this sample.						

(a) Sample set up with 3 separate dilutions, but DO difference is less than 2 on all of the dilutions. Results reported are from the lowest dilution.
(b) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC98570-1	**Date Sampled:**	11/14/19
Matrix:	AQ - Effluent	**Date Received:**	11/14/19
Method:	EPA 624.1	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T241803.D	1	11/26/19 16:02	CSF	n/a	n/a	VT9986
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.34	ug/l	
108-88-3	Toluene	ND	1.0	0.36	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	0.35	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.87	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.63	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	100%		76-122%
2037-26-5	Toluene-D8 (SUR)	97%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	102%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC98570-1	**Date Sampled:**	11/14/19
Matrix:	AQ - Effluent	**Date Received:**	11/14/19
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	11/22/19	11/22/19	ND	EPA 200.7 [2]	EPA 200.7 [4]
Copper	< 10	10	ug/l	1	11/22/19	11/22/19	ND	EPA 200.7 [2]	EPA 200.7 [4]
Lead	< 3.0	3.0	ug/l	1	11/22/19	11/22/19	ND	EPA 200.7 [2]	EPA 200.7 [4]
Mercury	< 0.20	0.20	ug/l	1	11/18/19	11/18/19	LL	EPA 245.1 [1]	EPA 245.1 [3]
Nickel	< 10	10	ug/l	1	11/22/19	11/22/19	ND	EPA 200.7 [2]	EPA 200.7 [4]
Zinc	< 20	20	ug/l	1	11/22/19	11/22/19	ND	EPA 200.7 [2]	EPA 200.7 [4]

(1) Instrument QC Batch: MA47824
(2) Instrument QC Batch: MA47858
(3) Prep QC Batch: MP18464
(4) Prep QC Batch: MP18525

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC98570-1	**Date Sampled:**	11/14/19
Matrix:	AQ - Effluent	**Date Received:**	11/14/19
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	50.3	2.0	mg/l	1	11/16/19 09:16	NV	EPA 300/SW846 9056A
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	11/14/19 22:18	EB	SM3500CR B-11
Ignitability (Flashpoint)	> 200		Deg. F	1	11/30/19 14:00	JOO	SW846 1010A/ASTM D93
Solids, Total	727	10	mg/l	1	11/18/19 11:53	RC	SM2540 B-11
Solids, Total Suspended	< 4.0	4.0	mg/l	1	11/18/19 10:08	RC	SM2540 D-11

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC98570-1R	**Date Sampled:**	11/14/19
Matrix:	AQ - Effluent	**Date Received:**	11/14/19
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
HEM Petroleum Hydrocarbons	< 5.0	5.0	mg/l	1	12/01/19 14:30	TM	EPA 1664A

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC98570-2	**Date Sampled:**	11/14/19
Matrix:	AQ - Effluent	**Date Received:**	11/14/19
Method:	EPA 624.1	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T241804.D	1	11/26/19 16:32	CSF	n/a	n/a	VT9986
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	100%		76-122%
2037-26-5	Toluene-D8 (SUR)	96%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	102%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC98570-2	**Date Sampled:**	11/14/19
Matrix:	AQ - Effluent	**Date Received:**	11/14/19
Method:	EPA 625.1 EPA 625	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P91446.D	1	11/20/19 04:48	CS	11/19/19 04:00	OP24064	E2P4045
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-95-2	Phenol	ND	1.9	0.37	ug/l	
91-20-3	Naphthalene	ND	0.95	0.22	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.95	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	35%		10-110%
4165-62-2	Phenol-d5	22%		10-110%
118-79-6	2,4,6-Tribromophenol	93%		35-147%
4165-60-0	Nitrobenzene-d5	74%		32-132%
321-60-8	2-Fluorobiphenyl	71%		40-117%
1718-51-0	Terphenyl-d14	94%		33-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC98570-2	**Date Sampled:**	11/14/19
Matrix:	AQ - Effluent	**Date Received:**	11/14/19
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	11/22/19	11/22/19	ND	EPA 200.7 [1]	EPA 200.7 [2]

(1) Instrument QC Batch: MA47858
(2) Prep QC Batch: MP18525

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC98570-2	**Date Sampled:**	11/14/19
Matrix:	AQ - Effluent	**Date Received:**	11/14/19
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Carbonaceous Bod, 5 Day [a]	1.6	1.0	mg/l	1	11/14/19 21:50	EB	SM5210 B-11
Nitrogen, Nitrate [b]	< 0.11	0.11	mg/l	1	11/25/19 16:15	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	11/25/19 16:15	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	11/14/19 21:53	EB	SM4500NO2 B-11
Nitrogen, Total [c]	9.5	0.70	mg/l	1	11/25/19 16:15	KI	SM4500 A-11
Nitrogen, Total Kjeldahl	9.5	0.60	mg/l	3	11/20/19 12:08	BM	EPA 351.2/LACHAT

(a) Sample set up with 3 separate dilutions, but DO difference is less than 2 on all of the dilutions. Results reported are from the lowest dilution.
(b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)
(c) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC98570-2R	**Date Sampled:**	11/14/19
Matrix:	AQ - Effluent	**Date Received:**	11/14/19
Method:	EPA 608 EPA 608	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G187504.D	1	11/27/19 13:19	TR	11/27/19 06:40	OP24258	G2G4835
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	ND	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	121%		10-156%
877-09-8	Tetrachloro-m-xylene	97%		10-156%
2051-24-3	Decachlorobiphenyl	130%		10-143%
2051-24-3	Decachlorobiphenyl	81%		10-143%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

Parameter Certification Exceptions

Job Number: JC98570
Account: HLANJPR Wood Environment & Infrastructure Solut.
Project: Review Avenue, Long Island City, NY

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Ignitability (Flashpoint)		**SW846 1010A/ASTM D93**	AQ	SGS is not certified for this parameter.[a]
Nitrogen, Total		**SM4500 A-11**	AQ	SGS is not certified for this parameter.[b]

(a) Lab cert for analyte/method not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.
(b) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

FED-EX Tracking #: | Bottle Order Control #:
SGS Quote #: | SGS Job #: JC98570

Client / Reporting Information

Company Name: Wood E&IS
Street Address: 200 American Metro Blvd #113
City: Hamilton, NJ State: | Zip: 8619
Project Contact: | E-mail: vincent.whelan@woodplc.com
Phone #: 609-689-2832
Sampler(s) Name(s): Jillian Ogan | Phone #:
Emili Puccio (347) 836-4445

Project Information

Project Name: Review Avenue GWM
Street: Review Avenue
City: Long Island City State: NY
Project #: 3480160502
Client Purchase Order #: C01270035
Project Manager: Tim Kessler

Billing Information (if different from Report to)

Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analysis

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	Total Nitrogen (TKN, NO2/NO3) - SM18 4500N	Composite VOCs (4:1 Ratio)	VOC (V624CHLFRM, VMS+CTC, VMS+TCA) - EPA 624	LAB USE ONLY
1	RA-EFF-G		11/4/19	1100	JL	G	GW	11	5		1		5							
	RA-EFF-C		11/4/19	1045	DL	C	GW	8			1	1	6				X		X	
	RA-VOC-C1		11/4/19	0745	JL	G	GW	3	3									X		
2	RA-VOC-C2		11/4/19	0845	DL	G	GW	3	3									X		
	RA-VOC-C3		11/4/19	0945	DL	G	GW	3	3									X		
	RA-VOC-C4		11/4/19	1045	DL	G	GW	3	3									X		

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [ ] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [X] Other Standard

All data available via Lablink
* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [X] NYASP Category B
- [ ] MA MCP Criteria____
- [ ] CT RCP Criteria____
- [ ] State Forms
- [X] EDD Format ___NYSDEC___
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Composite RA-VOC-C1 to RA-VOC-C4 in lab to be used for RA-EFF-C VOC analysis.

Hold SGT-HEM + PCB Samples.

Hex Chrome Test Method Only Allows 24HR Hold Time

Field pH = 7.06

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished By:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1	11/4/19 1240	1	2	11/4/19 1732	2
3		3	4		4
5		5	Custody Seal #	Intact / Not intact	Preserved where applicable / Absent

Therm. ID: | On Ice | Cooler Temp. °C

Standard COC.xlsx

SGS Sample Receipt Summary

Job Number: JC98570 **Client:** WOOD ENVIRONMENT & INFRASTRUCT **Project:** REVIEW AVENUE, LONG ISLAND CITY, NY

Date / Time Received: 11/14/2019 5:30:00 PM **Delivery Method:** **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (2.2); Cooler 2: (2.6);

Cooler Temps (Corrected) °C: Cooler 1: (2.0); Cooler 2: (2.4);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:	IR Gun	
3. Cooler media:	Ice (Bag)	
4. No. Coolers:	2	

Quality Control Preservation	Y	N	N/A
1. Trip Blank present / cooler:	☐	☑	☐
2. Trip Blank listed on COC:	☐	☑	☐
3. Samples preserved properly:	☑	☐	
4. VOCs headspace free:	☑	☐	☐

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Test Strip Lot #s: pH 1-12: 229517 pH 12+: 208717 Other: (Specify)

Comments

SM089-03
Rev. Date 12/7/17

JC98570: Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

Wood Environment & Infrastructure Solut.

Job No: JC98570

Review Avenue, Long Island City, NY
Project No: 3480160502 PO#C01270035

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC98570-1 RA-EFF-G	Collected: 14-NOV-19 11:00 By: JL		Received: 14-NOV-19 By: AS			
JC98570-1	SM3500CR B-11	14-NOV-19 22:18	EB			XCRSM
JC98570-1	EPA 300/SW846 9056A	16-NOV-19 09:16	NV	15-NOV-19	NV	CHL
JC98570-1	SM2540 D-11	18-NOV-19 10:08	RC			TSS
JC98570-1	SM2540 B-11	18-NOV-19 11:53	RC			TS
JC98570-1	EPA 245.1	18-NOV-19 13:40	LL	18-NOV-19	LL	HG
JC98570-1	EPA 200.7	22-NOV-19 17:18	ND	22-NOV-19	TG	CD,CU,NI,PB,ZN
JC98570-1	EPA 624.1	26-NOV-19 16:02	CSF			V624BTXM
JC98570-1	SW846 1010A/ASTM D93	30-NOV-19 14:00	JOO			IGN
JC98570-2 RA-EFF-C	Collected: 14-NOV-19 10:45 By: JL		Received: 14-NOV-19 By: AS			
JC98570-2	SM5210 B-11	14-NOV-19 21:50	EB	14-NOV-19	EB	CBOD5
JC98570-2	SM4500NO2 B-11	14-NOV-19 21:53	EB			NO2
JC98570-2	EPA 625.1	20-NOV-19 04:48	CS	19-NOV-19	BJ	AB625SL2
JC98570-2	EPA 351.2/LACHAT	20-NOV-19 12:08	BM	19-NOV-19	MP	TKN
JC98570-2	EPA 200.7	22-NOV-19 17:28	ND	22-NOV-19	TG	CD
JC98570-2	SM4500 A-11	25-NOV-19 16:15	KI			TNIT
JC98570-2	EPA353.2/SM4500NO2B	25-NOV-19 16:15	KI			NO3O
JC98570-2	EPA 353.2/LACHAT	25-NOV-19 16:15	KI	25-NOV-19	KI	NO32
JC98570-2	EPA 624.1	26-NOV-19 16:32	CSF			V624CHLFRM,VMS+ CTC,VMS+ TCA
JC98570-1R RA-EFF-G	Collected: 14-NOV-19 11:00 By: JL		Received: 14-NOV-19 By: AS			
JC98570-1R	EPA 1664A	01-DEC-19 14:30	TM	29-NOV-19	JOO	PHC1664
JC98570-2R RA-EFF-C	Collected: 14-NOV-19 10:45 By: JL		Received: 14-NOV-19 By: AS			
JC98570-2R	EPA 608	27-NOV-19 13:19	TR	27-NOV-19	BJ	P608PCBLL

SGS Internal Chain of Custody

Job Number: JC98570
Account: HLANJPR Wood Environment & Infrastructure Solut.
Project: Review Avenue, Long Island City, NY
Received: 11/14/19

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC98570-1.1	Secured Storage	Jared O. Onindo	11/29/19 17:33	Retrieve from Storage
JC98570-1.1	Jared O. Onindo		11/29/19 17:47	Depleted
JC98570-1.3	Secured Storage	Benjamin Gaines	11/17/19 16:24	Retrieve from Storage
JC98570-1.3	Benjamin Gaines	Secured Staging Area	11/17/19 16:24	Return to Storage
JC98570-1.3	Secured Staging Area	Lindsey Lee	11/18/19 09:40	Retrieve from Storage
JC98570-1.3	Lindsey Lee	Secured Storage	11/18/19 10:54	Return to Storage
JC98570-1.3	Secured Storage	Taylor Gorman	11/21/19 14:30	Retrieve from Storage
JC98570-1.3	Taylor Gorman	Secured Storage	11/21/19 16:45	Return to Storage
JC98570-1.3	Secured Storage	Matthew Robbins	11/21/19 18:04	Retrieve from Storage
JC98570-1.3	Matthew Robbins	Secured Staging Area	11/21/19 18:04	Return to Storage
JC98570-1.3	Secured Staging Area	Taylor Gorman	11/22/19 07:55	Retrieve from Storage
JC98570-1.3	Taylor Gorman	Secured Storage	11/22/19 13:14	Return to Storage
JC98570-1.3.1	Taylor Gorman	Metals Digestion	11/22/19 12:13	Digestate from JC98570-1.3
JC98570-1.3.1	Metals Digestion	Taylor Gorman	11/22/19 12:13	Digestate from JC98570-1.3
JC98570-1.3.1	Taylor Gorman	Metals Digestate Storage	11/22/19 12:13	Return to Storage
JC98570-1.4	Secured Storage	Benjamin Gaines	11/18/19 08:40	Retrieve from Storage
JC98570-1.4	Benjamin Gaines	Secured Staging Area	11/18/19 08:40	Return to Storage
JC98570-1.4	Secured Staging Area	Ruchitaben Chauhan	11/18/19 08:59	Retrieve from Storage
JC98570-1.4	Ruchitaben Chauhan		11/18/19 14:29	Depleted
JC98570-1.6	Secured Storage	Todd Shoemaker	11/15/19 15:05	Retrieve from Storage
JC98570-1.6	Todd Shoemaker	Secured Staging Area	11/15/19 15:05	Return to Storage
JC98570-1.6	Secured Staging Area	Natasha Verma	11/15/19 16:32	Retrieve from Storage
JC98570-1.6	Natasha Verma	Secured Storage	11/15/19 16:54	Return to Storage
JC98570-1.6	Secured Storage	Benjamin Gaines	11/18/19 08:40	Retrieve from Storage
JC98570-1.6	Benjamin Gaines	Secured Staging Area	11/18/19 08:40	Return to Storage
JC98570-1.6	Secured Staging Area	Ruchitaben Chauhan	11/18/19 08:59	Retrieve from Storage
JC98570-1.6	Ruchitaben Chauhan	Secured Storage	11/18/19 17:00	Return to Storage
JC98570-1.8	Secured Storage	Dave Hunkele	11/27/19 13:15	Retrieve from Storage
JC98570-1.8	Dave Hunkele	Secured Staging Area	11/27/19 13:15	Return to Storage
JC98570-1.8	Secured Staging Area	Jared O. Onindo	11/30/19 14:25	Retrieve from Storage
JC98570-1.8	Jared O. Onindo	Secured Storage	12/01/19 14:59	Return to Storage
JC98570-1.9	Secured Storage	Chelsea San Filippo	11/25/19 17:25	Retrieve from Storage
JC98570-1.9	Chelsea San Filippo	GCMST	11/25/19 17:25	Load on Instrument
JC98570-1.9	GCMST	Chelsea San Filippo	11/26/19 10:19	Unload from Instrument
JC98570-1.9	Chelsea San Filippo	Secured Storage	11/26/19 10:19	Return to Storage
JC98570-1.9	Secured Storage	Chelsea San Filippo	11/26/19 15:30	Retrieve from Storage
JC98570-1.9	Chelsea San Filippo	GCMST	11/26/19 15:30	Load on Instrument
JC98570-1.9	GCMST	Chelsea San Filippo	11/27/19 15:29	Unload from Instrument

SGS Internal Chain of Custody

Job Number: JC98570
Account: HLANJPR Wood Environment & Infrastructure Solut.
Project: Review Avenue, Long Island City, NY
Received: 11/14/19

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC98570-1.9	Chelsea San Filippo	Secured Storage	11/27/19 15:29	Return to Storage
JC98570-2.1	Secured Storage	Matthew Robbins	11/25/19 18:43	Retrieve from Storage
JC98570-2.1	Matthew Robbins	Secured Staging Area	11/25/19 18:43	Return to Storage
JC98570-2.2	Secured Storage	Brian Johnson	11/27/19 04:37	Retrieve from Storage
JC98570-2.2	Brian Johnson		11/27/19 10:18	Depleted
JC98570-2.2.1	Brian Johnson	Organics Prep	11/27/19 04:37	Extract from JC98570-2.2
JC98570-2.2.1	Organics Prep	Brian Johnson	11/27/19 11:32	Extract from JC98570-2.2
JC98570-2.2.1	Brian Johnson	Extract Storage	11/27/19 11:32	Return to Storage
JC98570-2.2.1	Extract Storage	Tianwei Ruan	11/27/19 12:18	Retrieve from Storage
JC98570-2.2.1	Tianwei Ruan	GC2G	11/27/19 12:18	Load on Instrument
JC98570-2.3	Secured Storage	Benjamin Gaines	11/20/19 16:31	Retrieve from Storage
JC98570-2.3	Benjamin Gaines	Secured Staging Area	11/20/19 16:31	Return to Storage
JC98570-2.3	Secured Staging Area	Vikas Parikh	11/21/19 07:21	Retrieve from Storage
JC98570-2.3	Vikas Parikh		11/22/19 10:30	Depleted
JC98570-2.3.1	Vikas Parikh	Organics Prep	11/21/19 07:21	Extract from JC98570-2.3
JC98570-2.3.1	Organics Prep	Vikas Parikh	11/21/19 10:18	Extract from JC98570-2.3
JC98570-2.3.1	Vikas Parikh	Extract Storage	11/21/19 10:18	Return to Storage
JC98570-2.3.1	Extract Storage	Tianwei Ruan	11/22/19 17:45	Retrieve from Storage
JC98570-2.3.1	Tianwei Ruan	GCXX	11/22/19 17:45	Load on Instrument
JC98570-2.4	Secured Storage	Matthew Robbins	11/18/19 18:51	Retrieve from Storage
JC98570-2.4	Matthew Robbins	Secured Staging Area	11/18/19 18:51	Return to Storage
JC98570-2.4	Secured Staging Area	Lionel (Tiger) Thomas	11/19/19 03:55	Retrieve from Storage
JC98570-2.4	Lionel (Tiger) Thomas		11/19/19 11:08	Depleted
JC98570-2.4.1	Lionel (Tiger) Thomas	Organics Prep	11/19/19 03:56	Extract from JC98570-2.4
JC98570-2.4.1	Brian Johnson	Extract Storage	11/19/19 09:51	Return to Storage
JC98570-2.4.1	Organics Prep	Brian Johnson	11/19/19 09:51	Extract from JC98570-2.4
JC98570-2.4.1	Extract Storage	Christopher Sowa	11/20/19 04:22	Retrieve from Storage
JC98570-2.4.1	Christopher Sowa	GCMS2P	11/20/19 04:23	Load on Instrument
JC98570-2.4.1	GCMS2P	James Canas	11/22/19 10:00	Unload from Instrument
JC98570-2.4.1	James Canas	Extract Freezer	11/22/19 10:00	Return to Storage
JC98570-2.5	Secured Storage	Matthew Robbins	11/21/19 18:04	Retrieve from Storage
JC98570-2.5	Matthew Robbins	Secured Staging Area	11/21/19 18:04	Return to Storage
JC98570-2.5	Secured Staging Area	Taylor Gorman	11/22/19 07:55	Retrieve from Storage
JC98570-2.5	Taylor Gorman	Secured Storage	11/22/19 13:14	Return to Storage
JC98570-2.5.1	Taylor Gorman	Metals Digestion	11/22/19 12:13	Digestate from JC98570-2.5

SGS Internal Chain of Custody

Job Number: JC98570
Account: HLANJPR Wood Environment & Infrastructure Solut.
Project: Review Avenue, Long Island City, NY
Received: 11/14/19

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC98570-2.5.1	Metals Digestion	Taylor Gorman	11/22/19 12:13	Digestate from JC98570-2.5
JC98570-2.5.1	Taylor Gorman	Metals Digestate Storage	11/22/19 12:13	Return to Storage
JC98570-2.6	Secured Storage	Matthew Robbins	11/18/19 21:29	Retrieve from Storage
JC98570-2.6	Matthew Robbins	Secured Staging Area	11/18/19 21:31	Return to Storage
JC98570-2.6	Secured Staging Area	Mahendra Patel	11/19/19 08:23	Retrieve from Storage
JC98570-2.6	Mahendra Patel	Secured Storage	11/19/19 17:32	Return to Storage
JC98570-2.6	Secured Storage	Dwayne Johnson	11/21/19 11:56	Retrieve from Storage
JC98570-2.6	Dwayne Johnson	Secured Staging Area	11/21/19 11:56	Return to Storage
JC98570-2.6	Secured Staging Area	Kimberly Ignace	11/22/19 10:28	Retrieve from Storage
JC98570-2.6	Kimberly Ignace	Secured Storage	11/22/19 16:53	Return to Storage
JC98570-2.6	Secured Storage	Benjamin Gaines	11/25/19 11:42	Retrieve from Storage
JC98570-2.6	Benjamin Gaines	Secured Staging Area	11/25/19 11:42	Return to Storage
JC98570-2.6	Secured Staging Area	Kimberly Ignace	11/25/19 11:54	Retrieve from Storage
JC98570-2.6	Kimberly Ignace	Secured Storage	11/25/19 17:36	Return to Storage
JC98570-2.7	Secured Storage	Elaine Banting	11/16/19 00:32	Retrieve from Storage
JC98570-2.7	Elaine Banting		11/16/19 00:33	Depleted
JC98570-2.9	Secured Storage	Chelsea San Filippo	11/25/19 17:25	Retrieve from Storage
JC98570-2.9	Chelsea San Filippo	GCMST	11/25/19 17:25	Load on Instrument
JC98570-2.9	GCMST	Chelsea San Filippo	11/26/19 10:19	Unload from Instrument
JC98570-2.9	Chelsea San Filippo	Secured Storage	11/26/19 10:19	Return to Storage
JC98570-2.9	Secured Storage	Chelsea San Filippo	11/26/19 15:30	Retrieve from Storage
JC98570-2.9	Chelsea San Filippo	GCMST	11/26/19 15:30	Load on Instrument
JC98570-2.9	GCMST	Chelsea San Filippo	11/27/19 15:29	Unload from Instrument
JC98570-2.9	Chelsea San Filippo	Secured Storage	11/27/19 15:29	Return to Storage
JC98570-2.12	Secured Storage	Chelsea San Filippo	11/25/19 17:33	Retrieve from Storage
JC98570-2.12	Chelsea San Filippo	GCMST	11/25/19 17:33	Load on Instrument
JC98570-2.12	GCMST	Chelsea San Filippo	11/25/19 17:34	Unload from Instrument
JC98570-2.12	Chelsea San Filippo		11/25/19 17:34	Depleted

wood.

March 24, 2020

Mr. Sean H. Hulbert - Assistant Chemical Engineer
NYCDEP, Bureau of Wastewater Treatment
96-05 Horace Harding Expressway, 1st Floor
Corona, NY 11368

Subject: **1st Quarter 2020 Effluent Discharge Compliance**
Review Avenue Development Sites
37-30 and 37-80 Review Avenue
Long Island City, Queens, New York, File # C-5652

Dear Mr. Hulbert:

Wood Environment and Infrastructure Solutions, Inc. (Wood), on behalf of Review Avenue System LLC, submits the effluent laboratory analysis data in connection with the letter of approval (LOA) for groundwater discharge to sanitary or combined sewer for the Review Avenue Development (RAD) Sites and LOA Extension dated September 30, 2019.

Wood collected the 1st Quarter 2020 discharge compliance samples on February 20, 2020. Analytical results indicate no exceedances of the daily discharge limits for all parameters and no exceedances of the monthly discharge limits for all parameters, and therefore the discharge is in compliance with our LOA requirements. The analytical results collected for the 1st quarter 2020 compliance sampling are summarized on Table 1 attached. The total volume of groundwater discharged to the sanitary or combined sewer, since system start-up was 11,379,930 gallons as of the February 20th sampling event and 532,480 gallons since the last quarterly sampling event on November 14th.

If you have any questions, please contact either of the undersigned at (609) 689-2829.

Sincerely,

Wood Environment & Infrastructure Solutions, Inc.

Brent C. O'Dell, P.E.
Principal Engineer – Civil

Timothy C. Kessler
Senior Associate Engineer/PM

Attachments: Table 1 – Summary of Groundwater Analytical Results

cc: R. Craig Coslett – Review Avenue System LLC

200 American Metro Blvd
Suite 113
Hamilton, NJ 08619
609-689-2829
woodplc.com

Table 1
Summary of Analytical Results - Groundwater Treatment System
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	NYCDEP Daily Limit	NYCDEP Monthly Limit	RA-EFF-G		RA-EFF-C	
Compliance Period:				1Q 2020		1Q 2020	
Sample Date:				2/20/2020		2/20/2020	
Lab Sample ID:				JD3466-1		JD3466-2	
Non-polar material[1]	mg/L	50	NL	5.0	U	-	
pH[2]	SUs	5 - 12	NL	7.21		-	
Temperature[2]	ºF	150	NL	48.74		-	
Flash Point[3]	ºF	> 140	NL	> 200		-	
Cadmium (Instantaneous)	mg/L	2	NL	0.003	U	-	
Cadmium (Composite)	mg/L	0.69	NL	-		<0.003	U
Chromium (VI)	mg/L	5	NL	0.01	U	-	
Copper	mg/L	5	NL	0.0164		-	
Lead	mg/L	2	NL	0.003	U	-	
Mercury	mg/L	0.05	NL	0.0002	U	-	
Nickel	mg/L	3	NL	0.01	U	-	
Zinc	mg/L	5	NL	0.02	U	-	
Benzene	µg/L	134	57	0.34	U	-	
Carbon Tetrachloride	µg/L	NL	NL	-		0.55	U
Chloroform	µg/L	NL	NL	-		0.50	U
1,4-Dichlorobenzene	µg/L	NL	NL	0.63	U	-	
Ethylbenzene	µg/L	380	142	0.30	U	-	
MTBE (Methyl-Tert-Butyl-Ether)	µg/L	50	NL	0.87	U	-	
Napthalene	µg/L	47	19	-		0.22	U
Phenol	µg/L	NL	NL	-		0.37	U
Tetrachloroethylene (Perc)	µg/L	20	NL	0.9	U	-	
Toluene	µg/L	74	28	0.36	U	-	
1,2,4-Trichlorobenzene	µg/L	NL	NL	-		0.24	U
1,1,1-Trichloroethane	µg/L	NL	NL	-		0.54	U
Xylenes (Total)	µg/L	74	28	0.35	U	-	
PCBs (Total)	µg/L	1	NL	-		0.033	U
Total Suspended Solids (TSS)	mg/L	350	NL	5.0		-	
CBOD	mg/L	NL	NL	-		2.0	U
Chloride	mg/L	NL	NL	90.7		-	
Total Nitrogen	mg/L	NL	NL	-		2.5	
Total Solids	mg/L	NL	NL	802		-	

Prepared by: TK 03/09/20

Table 1
Summary of Analytical Results - Groundwater Treatment System
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Notes:
RA-EFF-G: Instantaneous (Grab) Sample
RA-EFF-C: 4-Hour Flow Weighted Composite Sample
Bold/Shaded: Concentration exceeds daily limit
Underline: Concentration exceeds monthly limit
1. Non-polar Material reported by lab as "Silica Gel Treated n-Hexane Extractable Material (SGT-HEM)"
2. pH and Temperature measured in field
3. Flash Point reported by lab as Ignitability
4. Temperature was estimated

Definitions:
MDL: Method Detection Limit
RL: Reporting Limit
NL: No Limit

Data Qualifiers:
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U: Indicates the analyte was not detected at the indicated MDL.

Prepared by: TK 12/12/19

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Wood Environment & Infrastructure Solut.

Review Avenue, Long Island City, NY

3480160502

SGS Job Number: JD3466

Sampling Date: 02/20/20

Report to:

Wood Environment & Infrastructure Solut.

vincent.whelan@amecfw.com

ATTN: Vincent Whelan

Total number of pages in report: 24

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Laura Degenhardt
General Manager

Client Service contact: Kelly Ramos 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

Sections: 1 2 3 4 5

Table of Contents

Sample Summary

Wood Environment & Infrastructure Solut.

Job No: JD3466

Review Avenue, Long Island City, NY
Project No: 3480160502

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
This report contains results reported as ND = Not detected. The following applies:							
Organics ND = Not detected above the MDL							
JD3466-1	02/20/20	10:00	EP	02/20/20	AQ	Effluent	RA-EFF-G
JD3466-1R	02/20/20	10:00	EP	02/20/20	AQ	Effluent	RA-EFF-G
JD3466-2	02/20/20	13:00	EP	02/20/20	AQ	Effluent	RA-EFF-C
JD3466-2R	02/20/20	13:00	EP	02/20/20	AQ	Effluent	RA-EFF-C

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Wood Environment & Infrastructure Solut.	**Job No**	JD3466
Site:	Review Avenue, Long Island City, NY	**Report Date**	3/6/2020 11:13:13 AM

On 02/20/2020, 2 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 3 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JD3466 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Volatiles By Method EPA 624.1

Matrix: AQ **Batch ID:** VT10062

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD3493-1MS, JD3493-1MSD were used as the QC samples indicated.
- Matrix Spike / Matrix Spike Duplicate Recovery(s) for Benzene, Ethylbenzene, Toluene, Xylenes (total) are outside control limits. Outside control limits due to high level in sample relative to spike amount.

MS Semi-volatiles By Method EPA 625.1

Matrix: AQ **Batch ID:** OP26000

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

GC/LC Semi-volatiles By Method EPA 608.3

Matrix: AQ **Batch ID:** OP26102

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- OP26102-MB1 for Decachlorobiphenyl: High percent recoveries and no positive found in the QC batch.
- OP26102-BSD for Aroclor 1260: Reported from the 2nd signal. The %D of the CCV on the 1st signal exceeds the method criteria of 20%, so it being used for confirmation only.
- OP26102-MB1 for Tetrachloro-m-xylene: High percent recoveries and no positive found in the QC batch.
- OP26102-BS1 for Aroclor 1260: Reported from the 2nd signal. The %D of the CCV on the 1st signal exceeds the method criteria of 20%, so it being used for confirmation only.

Metals Analysis By Method EPA 200.7

Matrix: AQ	Batch ID: MP19919

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD3466-1MS, JD3466-1MSD, JD3466-1SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Cadmium, Lead, Zinc are outside control limits for sample MP19919-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP19919-MB2 for Copper: Lab filtered.
- MP19919-MB2 for Nickel: Lab filtered.
- MP19919-MB2 for Lead: Lab filtered.
- MP19919-MB2 for Cadmium: Lab filtered.
- MP19919-MB2 for Zinc: Lab filtered.

Metals Analysis By Method EPA 245.1

Matrix: AQ	Batch ID: MP19954

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD3528-1MS, JD3528-1MSD were used as the QC samples for metals.

General Chemistry By Method EPA 1664A

Matrix: AQ	Batch ID: GP26986

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD3685-1MS, JD3940-2DUP were used as the QC samples for HEM Petroleum Hydrocarbons.

General Chemistry By Method EPA 300/SW846 9056A

Matrix: AQ	Batch ID: GP26955

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD3612-1DUP, JD3612-1MS were used as the QC samples for Chloride.

General Chemistry By Method EPA 351.2/LACHAT

Matrix: AQ	Batch ID: GP26775

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD3466-2DUP, JD3466-2MS were used as the QC samples for Nitrogen, Total Kjeldahl.
- Matrix Spike Recovery(s) for Nitrogen, Total Kjeldahl are outside control limits. Spike recovery indicates possible matrix interference.

General Chemistry By Method EPA 353.2/LACHAT

Matrix: AQ	Batch ID: GP26930

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD3463-2DUP, JD3463-2MS were used as the QC samples for Nitrogen, Nitrate + Nitrite.

General Chemistry By Method EPA353.2/SM4500NO2B

Matrix: AQ **Batch ID:** R184110

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JD3466-2 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

General Chemistry By Method SM2540 B-11

Matrix: AQ **Batch ID:** GN5652

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD3466-1DUP were used as the QC samples for Solids, Total.

General Chemistry By Method SM2540 D-11

Matrix: AQ **Batch ID:** GN5632

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD3463-2DUP were used as the QC samples for Solids, Total Suspended.

General Chemistry By Method SM3500CR B-11

Matrix: AQ **Batch ID:** GN5518

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD3466-1DUP, JD3466-1MS were used as the QC samples for Chromium, Hexavalent.

General Chemistry By Method SM4500 A-11

Matrix: AQ **Batch ID:** R184111

- The data for SM4500 A-11 meets quality control requirements.
- JD3466-2 for Nitrogen, Total: Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

General Chemistry By Method SM4500NO2 B-11

Matrix: AQ **Batch ID:** GN5530

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD3463-2MS, JD3463-2MSD were used as the QC samples for Nitrogen, Nitrite.

General Chemistry By Method SM5210 B-11

Matrix: AQ **Batch ID:** GP26752

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD3435-1ADUP were used as the QC samples for Carbonaceous Bod, 5 Day.

General Chemistry By Method SW846 1010A/ASTM D93

Matrix: AQ **Batch ID:** GN5963

- Sample(s) JD3466-1DUP were used as the QC samples for Ignitability (Flashpoint).

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Summary of Hits

Job Number: JD3466
Account: Wood Environment & Infrastructure Solut.
Project: Review Avenue, Long Island City, NY
Collected: 02/20/20

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD3466-1	**RA-EFF-G**					
Copper		16.4	10		ug/l	EPA 200.7
Chloride		90.7	2.0		mg/l	EPA 300/SW846 9056A
Ignitability (Flashpoint)		> 200			Deg. F	SW846 1010A/ASTM D93
Solids, Total		802	10		mg/l	SM2540 B-11
Solids, Total Suspended		5.0	4.0		mg/l	SM2540 D-11
JD3466-1R	**RA-EFF-G**					
No hits reported in this sample.						
JD3466-2	**RA-EFF-C**					
Nitrogen, Nitrate [a]		0.21	0.11		mg/l	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite		0.21	0.10		mg/l	EPA 353.2/LACHAT
Nitrogen, Total [b]		2.5	0.30		mg/l	SM4500 A-11
Nitrogen, Total Kjeldahl		2.3	0.20		mg/l	EPA 351.2/LACHAT
JD3466-2R	**RA-EFF-C**					
No hits reported in this sample.						

(a) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)
(b) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JD3466-1	**Date Sampled:**	02/20/20
Matrix:	AQ - Effluent	**Date Received:**	02/20/20
Method:	EPA 624.1	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T243436.D	1	02/26/20 18:42	CSF	n/a	n/a	VT10062
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.34	ug/l	
108-88-3	Toluene	ND	1.0	0.36	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	0.35	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.87	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.63	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	101%		76-122%
2037-26-5	Toluene-D8 (SUR)	92%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%		80-120%
1868-53-7	Dibromofluoromethane (S)	97%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RA-EFF-G
Lab Sample ID: JD3466-1
Matrix: AQ - Effluent
Project: Review Avenue, Long Island City, NY

Date Sampled: 02/20/20
Date Received: 02/20/20
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	02/24/20	02/25/20	ND	EPA 200.7 [1]	EPA 200.7 [3]
Copper	16.4	10	ug/l	1	02/24/20	02/25/20	ND	EPA 200.7 [1]	EPA 200.7 [3]
Lead	< 3.0	3.0	ug/l	1	02/24/20	02/25/20	ND	EPA 200.7 [1]	EPA 200.7 [3]
Mercury	< 0.20	0.20	ug/l	1	02/25/20	02/25/20	LL	EPA 245.1 [2]	EPA 245.1 [4]
Nickel	< 10	10	ug/l	1	02/24/20	02/25/20	ND	EPA 200.7 [1]	EPA 200.7 [3]
Zinc	< 20	20	ug/l	1	02/24/20	02/25/20	ND	EPA 200.7 [1]	EPA 200.7 [3]

(1) Instrument QC Batch: MA48300
(2) Instrument QC Batch: MA48305
(3) Prep QC Batch: MP19919
(4) Prep QC Batch: MP19954

RL = Reporting Limit

Report of Analysis

Client Sample ID: RA-EFF-G
Lab Sample ID: JD3466-1
Matrix: AQ - Effluent
Project: Review Avenue, Long Island City, NY

Date Sampled: 02/20/20
Date Received: 02/20/20
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	90.7	2.0	mg/l	1	03/05/20 10:27	JW	EPA 300/SW846 9056A
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	02/20/20 17:09	HP	SM3500CR B-11
Ignitability (Flashpoint)	> 200		Deg. F	1	03/05/20	TM	SW846 1010A/ASTM D93
Solids, Total	802	10	mg/l	1	02/25/20 16:13	BM	SM2540 B-11
Solids, Total Suspended	5.0	4.0	mg/l	1	02/25/20 14:44	BM	SM2540 D-11

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JD3466-1R	**Date Sampled:**	02/20/20
Matrix:	AQ - Effluent	**Date Received:**	02/20/20
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
HEM Petroleum Hydrocarbons	< 5.0	5.0	mg/l	1	03/05/20 15:00	LX	EPA 1664A

RL = Reporting Limit

Report of Analysis

Client Sample ID: RA-EFF-C
Lab Sample ID: JD3466-2
Matrix: AQ - Effluent
Method: EPA 624.1
Project: Review Avenue, Long Island City, NY

Date Sampled: 02/20/20
Date Received: 02/20/20
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T243437.D	1	02/26/20 19:13	CSF	n/a	n/a	VT10062
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	98%		76-122%
2037-26-5	Toluene-D8 (SUR)	92%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	101%		80-120%
1868-53-7	Dibromofluoromethane (S)	98%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JD3466-2	**Date Sampled:**	02/20/20
Matrix:	AQ - Effluent	**Date Received:**	02/20/20
Method:	EPA 625.1 EPA 625	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P134976.D	1	02/25/20 05:54	CS	02/24/20 07:10	OP26000	EP6132
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-95-2	Phenol	ND	1.9	0.37	ug/l	
91-20-3	Naphthalene	ND	0.95	0.22	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.95	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	30%		10-110%
4165-62-2	Phenol-d5	20%		10-110%
118-79-6	2,4,6-Tribromophenol	91%		35-147%
4165-60-0	Nitrobenzene-d5	74%		32-132%
321-60-8	2-Fluorobiphenyl	82%		40-117%
1718-51-0	Terphenyl-d14	75%		33-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JD3466-2	**Date Sampled:**	02/20/20
Matrix:	AQ - Effluent	**Date Received:**	02/20/20
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	02/24/20	02/25/20	ND	EPA 200.7 [1]	EPA 200.7 [2]

(1) Instrument QC Batch: MA48300
(2) Prep QC Batch: MP19919

RL = Reporting Limit

Report of Analysis

Client Sample ID: RA-EFF-C
Lab Sample ID: JD3466-2
Matrix: AQ - Effluent
Project: Review Avenue, Long Island City, NY

Date Sampled: 02/20/20
Date Received: 02/20/20
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Carbonaceous Bod, 5 Day	< 2.0	2.0	mg/l	1	02/20/20 21:20	EB	SM5210 B-11
Nitrogen, Nitrate [a]	0.21	0.11	mg/l	1	03/03/20 10:49	KI	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	0.21	0.10	mg/l	1	03/03/20 10:49	KI	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	02/20/20 22:50	EB	SM4500NO2 B-11
Nitrogen, Total [b]	2.5	0.30	mg/l	1	03/03/20 10:49	KI	SM4500 A-11
Nitrogen, Total Kjeldahl	2.3	0.20	mg/l	1	02/24/20 11:32	KI	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)
(b) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JD3466-2R	**Date Sampled:**	02/20/20
Matrix:	AQ - Effluent	**Date Received:**	02/20/20
Method:	EPA 608.3 EPA 608	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2446821.D	1	02/27/20 10:44	TR	02/26/20 12:30	OP26102	GXX6944
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.048	0.033	ug/l	
11104-28-2	Aroclor 1221	ND	0.048	0.028	ug/l	
11141-16-5	Aroclor 1232	ND	0.048	0.019	ug/l	
53469-21-9	Aroclor 1242	ND	0.048	0.026	ug/l	
12672-29-6	Aroclor 1248	ND	0.048	0.024	ug/l	
11097-69-1	Aroclor 1254	ND	0.048	0.033	ug/l	
11096-82-5	Aroclor 1260	ND	0.048	0.026	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	72%		10-156%
877-09-8	Tetrachloro-m-xylene	89%		10-156%
2051-24-3	Decachlorobiphenyl	74%		10-143%
2051-24-3	Decachlorobiphenyl	94%		10-143%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

Job Number: JD3466
Account: HLANJPR Wood Environment & Infrastructure Solut.
Project: Review Avenue, Long Island City, NY

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Ignitability (Flashpoint)		**SW846 1010A/ASTM D93**	AQ	SGS is not certified for this parameter.[a]
Nitrogen, Total		**SM4500 A-11**	AQ	SGS is not certified for this parameter.[b]

(a) Lab cert for analyte/method not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.
(b) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

GW

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

Page 1 of 2

E COMP

FED-EX Tracking #: | Bottle Order Control #: KR-021320-168
SGS Quote #: | SGS Job #: JD3466

Client / Reporting Information

Company Name: Wood E&IS
Street Address: 200 American Metro Blvd #113
City: Hamilton, NJ State: | Zip: 08619
Project Contact: vincent.whelan@woodplc.com E-mail:
Phone #: 609-689-2832
Sampler(s) Name(s): Emili Puccio (347) 836-4445 Phone #:

Project Information

Project Name: Review Avenue GWM
Street: Review Avenue
City: Long Island City State: NY
Project #: 3480160502
Client Purchase Order #: C01270035
Project Manager: Tim Kessler

Billing Information (If different from Report to)
Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analysis

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB-Equipment Blank; RB - Rinse Blank; TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	Flashpoint (Ignitability) - SW846 1010A	Metals (Cd, Cu, Pb, Ni, Zn) - EPA 200.7 Mercury (Hg) - EPA 245.1	SGT-HEM - EPA 1664A SGT	Total Solids, (SM 2540 B-11); Chloride (EPA 300.0 / SM4500 Cl-C)	Total Suspended Solids - SM 2540 D-11	VOC (V624BTXM, VMS+PCE, VMS+14DCB) - EPA 624	Hexavalent Chromium (SM3500 Cr B)	Phenol, Naphthalene, 1,2,4-Trichlorobenzene - EPA 625	CBOD5 - SM5210 B-11	Metals (Cadmium Only) - EPA 200.7	PCBs, Low Level (P608PCBLL) - EPA 608	LAB USE ONLY
1	RA-EFF-G		2/20/2020	1000	EP	G	GW	11	5		1		5				X	X	H	X	X	X	X					ESS
2	RA-EFF-C		2/20/2020	1300	EP	C	GW	11	3		1	1	6											X	X	X	H	A18
	RA-VOC-C1		2/20/2020	1000	EP	G	GW	3	3																			G32
	RA-VOC-C2		2/20/2020	1000	EP	G	GW	3	3																			V1064
	RA-VOC-C3		2/20/2020	1200	EP	G	GW	3	3																			B15
	RA-VOC-C4		2/20/2020	1300	EP	G	GW	3	3																			

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [ ] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [X] Other Standard

All data available via Lablink

INITIAL ASSESSMENT 2/21
LABEL VERIFICATION

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [X] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [X] NYASP Category B
- [ ] MA MCP Criteria_____
- [ ] CT RCP Criteria_____
- [ ] State Forms
- [X] EDD Format ___NYSDEC___
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Composite RA-VOC-C1 to RA-VOC-C4 in lab to be used for RA-EFF-C VOC analysis.

Hold SGT-HEM + PCB Samples.

Hex Chrome Test Method Only Allows 24HR Hold Time

Field pH reading = 7.21 at 9.3°C

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1 Emili Puccio	2/20/20 1400	1 P. Shah	2 P Shah	2/20/20 15:54	2
3		3	4		4
5		5	Custody Seal #	Intact / Not Intact	Preserved where applicable / Absent / Therm. ID: / On Ice: A / Cooler Temp. °C: 3.2C-P ~~3.0C-P~~ 3.3C-P

2/20/20

COCs

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

Page 2 of 2

E COMP

FED-EX Tracking # | Bottle Order Control #
SGS Quote # | SGS Job # JD3466

Client / Reporting Information

Company Name: Wood E&IS
Street Address: 200 American Metro Blvd #113
City: Hamilton, NJ State: Zip: 08619
Project Contact: vincent.whelan@woodplc.com E-mail:
Phone #: 609-689-2832
Sampler(s) Name(s): Emili Puccio (347) 836-4445 Phone #:

Project Information

Project Name: Review Avenue GWM
Street: Review Avenue
City: Long Island City State: NY
Project #: 3480160502
Client Purchase Order #: C01270035
Project Manager: Tim Kessler

Billing information (if different from Report to)
Company Name:
Street Address:
City State Zip:
Attention:

Requested Analysis

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB-Equipment Blank; RB - Rinse Blank; TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	EnCore	Total Nitrogen (TKN, NO2/NO3) - SM18 4500N	Composite VOCs (4:1 Ratio)	VOC (V624CHLFRM, VMS+CTC, VMS+TCA) - EPA 624	LAB USE ONLY
1	RA-EFF-G		2/20/2020	1000	EP	G	GW	11	5		1		5							
2	RA-EFF-C		2/20/2020	1300	EP	G	GW	11	3		1	1	6				X		X	
	RA-VOC-C1		2/20/2020	1000	EP	G	GW	3	3									X		
	RA-VOC-C2		2/20/2020	1100	EP	G	GW	3	3									X		
2	RA-VOC-C3		2/20/2020	1200	EP	G	GW	3	3									X		
	RA-VOC-C4		2/20/2020	1300	EP	G	GW	3	3									X		

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [ ] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [X] Other Standard

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [X] NYASP Category B
- [ ] MA MCP Criteria_____
- [ ] CT RCP Criteria_____
- [ ] State Forms
- [X] EDD Format ___NYSDEC___
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Composite RA-VOC-C1 to RA-VOC-C4 in lab to be used for RA-EFF-C VOC analysis.

Hold SGT-HEM + PCB Samples.

Hex Chrome Test Method Only Allows 24HR Hold Time

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1 Emili Puccio	2/20/20 1400	1 P Shah	2 P Shah	2/20/20 15:54	2
3		3	4		4
5		5	Custody Seal #	Intact / Not Intact	Preserved where applicable: Absent / Therm. ID: / On Ice: / Cooler Temp. °C

COCs

SGS Sample Receipt Summary

Job Number: JD3466 **Client:** WOOD ENVIRONMENT & INFRASTRUCT **Project:** REVIEW AVENUE, LONG ISLAND CITY, NY

Date / Time Received: 2/20/2020 3:54:00 PM **Delivery Method:** **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (3.3);

Cooler Temps (Corrected) °C: Cooler 1: (3.0);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 229517 pH 12+: 208717 Other: (Specify)

Comments

SM089-03
Rev. Date 12/7/17

JD3466: Chain of Custody
Page 3 of 4

Job Change Order: JD3466

Requested Date: 2/25/2020 **Received Date:** 2/20/2020

Account Name: Wood Environment & Infrastructur **Due Date:** 3/5/2020

Project Description: Review Avenue, Long Island City, NY **Deliverable:** NYASPB

C/O Initiated By: MICHELLD **PM:** KR **TAT (Days):** 14

==========

Sample #: JD3466-1 **Change:**

Dept: Relog for PHC1664

TAT: 14

RA-EFF-G

==========

Sample #: JD3466-2 **Change:**

Dept: Relog for P608PCBLL

TAT: 14

RA-EFF-C

==========

Above Changes Per: Timothy Kessler **Date/Time:** 2/25/2020 1:26:28 PM

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Page 1 of 1

JD3466: Chain of Custody
Page 4 of 4