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. C241005

Site Name Review Avenue Development II (a.k.a. Quanta Resources)

Site Address: 37-80 Review Avenue Zip Code: 11101
City/Town: Long Island City
County: Queens County
Site Acreage: 1.8

Reporting Period: November 16, 2015 to March 31, 2017

	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

SITE NO. C241005

Description of Institutional Controls

- The RAD II 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 II 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

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. C241005

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 — Date: 8/31/17

IC/EC CERTIFICATIONS

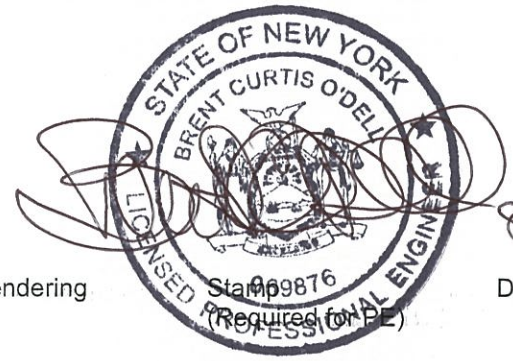
Box 7

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 St. Ste 200, Portland ME 04112
print name print business address

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



8/31/17

Signature of the Owner or Remedial Party, Rendering Certification

Stamp 069876 (Required for PE)

Date

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

PERIODIC REVIEW REPORT No. 1
(NOVEMBER 16, 2015 – MARCH 31, 2017)

NYSDEC Site Number: RAD II – BCP #C241005

Prepared by:

MACTEC Engineering and Consulting, P.C.
511 Congress Street, Suite 200
Portland, ME 04112

and

Amec Foster Wheeler Environment & Infrastructure, Inc.
200 American Metro Boulevard – Suite 113
Hamilton, New Jersey 08619

JUNE 2017

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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, 37-80 Review Railroad, LLC and Cresswood Environmental Consultants, LLC (collectively referred to as the Volunteer) entered into Brownfield Cleanup Agreement (BCA) #C241005 in October 2005 with the NYSDEC to participate in the Brownfield's Cleanup Program for the RAD II Site.

The RAD II Site is located adjacent to the RAD I Site (BCA #C241089) and have the same physical setting. The RAD Sites have been investigated/remediated concurrently since the early 1980's, but were entered into separate BCA and assigned different BCP numbers. The remedy selected by the NYSDEC for the RAD II Site is found in the Record of Decision (ROD) for the Quanta Resources Site (a.k.a. Review Avenue Development II) Long Island City, Queens, New York issued by the NYSDEC in February 2007.

The RAD II Site is identified as Block 312 and Lot 69 on the Long Island City Tax Map, refer to Figure 1. The RAD II Site is separated from the RAD I property by a right of way (located on RAD I) for Preston Street, which runs from Review Avenue to the Long Island Railroad. 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 Former Peerless Oil property. The boundaries of the RAD II Site and Site Features are shown 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 II Site and outlines the controls established to meet the ROD requirements. Section 3.0 of this report summarizes the EC and IC requirements and compliance. IC/EC Certification has been bound to the front end of this report.

1.0 SITE OVERVIEW

1.1 INTRODUCTION

The RAD II Site is being remediated in accordance with the remedy selected by the NYSDEC in the ROD for the Quanta Resources (a.k.a. RAD II) Site, dated February 9, 2007. The factors considered during the selection of the remedy for the RAD II Site are those listed in 6NYCRR 375-1.8.

In 2008, an IRM was implemented at the RAD II Site for the demolition and removal of the remaining building and fourteen (14) remaining empty and decontaminated steel aboveground storage tanks (ASTs) along with debris piles, below grade foundations, concrete pads, sumps and vaults.

The components of the remedy proposed in the ROD included work elements from the design/investigation phase through remedial action completion. The following provides a summary of the remedy selected for the RAD II Site by media:

LNAPL

The remedy for light non-aqueous phase liquid (LNAPL) beneath the RAD II Site was recovery via a combination of single-phase skimmer pumps and vacuum enhanced (VER) recovery methods at locations where higher viscosity LNAPL is present.

In addition, a long-term monitoring program to monitor the effectiveness of the LNAPL recovery system has been implemented pursuant to the approved Site Management Plan.

Soil

Restricting contact with potentially impacted soils was accomplished by installing a paving system across the entire property. The paving system is composed primarily of at least six inches of asphalt and associated subgrade materials. Other components of the cover system include the LNAPL recovery well and piping vaults which are mostly comprised of concrete with secured metal lids to prevent unauthorized access. 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 II Site as a source of potable water.

Soil Vapor

The results of soil vapor investigations on the RAD II Site did not identify a threat for soil vapor beneath the RAD II Site.

Listed below are the primary elements of the selected remedy:

- Operation of the LNAPL recovery system;
- Installation of a paving system at least 6 inches thick to be protective of human health by restricting direct contact with compounds that exceed the soil objectives for restricted use;
- Establishment of an institutional control that restricts the use of untreated groundwater beneath the RAD II 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 II 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 Periodic Review Report (PRR) is the first PRR for the RAD II Site and covers the period of performance from November 16, 2015 to March 31, 2017. It 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 II Site is approximately 1.8 acres in size and located in a highly industrialized part of Long Island City, County of Queens, New York. The RAD II Site is identified as Block 312 and Lot 69 on the Long Island City Tax Map. The address of the RAD II Site is 37–80 Review Avenue. Figure 1 presents a Site Location Map. Zoning in this area is designated as heavy manufacturing. The RAD II Site is bounded by Review Avenue to the northeast, the Southern Line of the Long Island Railroad to the southwest, the Former Phoenix Beverage property to the southeast, and the RAD I property to the northwest (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 Waste Management.

The RAD II Site was previously used for a variety of commercial and industrial purposes since at least 1898, including petroleum refining, waste oil recycling and more recently commercial vehicle and heavy equipment maintenance. Angel Aerial Corporation is currently leasing the RAD II Site for parking of equipment and vehicles. Figure 2 presents a Site Layout Map for the RAD II Site. All of the structures that previously existed on the RAD II Site were demolished since the property was abandoned in 1981. Much of the RAD II Site was reportedly covered by asphalt or concrete during its operation; large portions of the RAD II Site have since been covered with surficial urban fill and debris.

Completion of the remedy components identified in the ROD was documented in the Site Management Plan (SMP) and Final Engineering Report (FER) which were submitted to NYSDEC in December 2015. DEC provided approval of the SMP on September 2, 2016.

Note: the DEC found that the LNAPL extraction and treatment system was constructed in accordance with the approved design (RAWP) and issued approval of the O&M start beginning November 16, 2015.

1.3 PHYSICAL SETTING

The RAD I Site and the RAD II Site are adjacent to each other and have the same physical setting.

1.3.1 Geology

The stratigraphy of the RAD II 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 II 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 II Site and offsite (including the RAD I Site). The locations of the wells are depicted on Figure 2.

The depth to groundwater beneath the RAD II 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 II 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.

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) with a maximum apparent thickness in monitoring wells of about 4 feet at the time of the Remedial Investigation (RI) and RAWP.

1.4 CLEANUP GOALS AND REMEDIAL PROGRESS

The remediation goals for the RAD II Site, as stipulated by the 2011 RAWP (Golder 2011) and the February 2007 ROD (NYSDEC 2007) 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 II 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 II Site in areas of lower viscosity product is recovery using single-phase skimmer pumps installed in 15 recovery wells on the RAD II 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 20 recovery wells installed on the RAD II 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

The remedy for the soil at the RAD II Site was to cover residual contamination in soil and urban fill using materials consistent with the development of the RAD II Site. The RAD II Site was paved with asphalt to serve as a soil cover system to prevent exposure to possible near surface remaining contamination in urban fill/soil. This cover system is comprised of a minimum of 6 inches of asphalt pavement. Development beyond restricted use, as further described in the SMP, is prohibited.

Groundwater

The remedy for groundwater is the establishment of an institutional control that restricts the use of untreated groundwater beneath the RAD II 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 II Site have not identified a threat for migration of soil vapor laterally from the limits of the LNAPL beneath the RAD II 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 12 months. The LNAPL Recovery System has recovered 179,632 gallons of LNAPL as of March 31, 2017 after the first 16-1/2 months of operation (for both RAD I and RAD II).
- All areas of existing asphalt pavement disturbance due to the LNAPL recovery system installation has been restored.
- The Institutional Controls established for the RAD II 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 II Site is required by the Environmental Easement and is implemented under the SMP. These ICs are as follows:

- The RAD II 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 II 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 II Site:

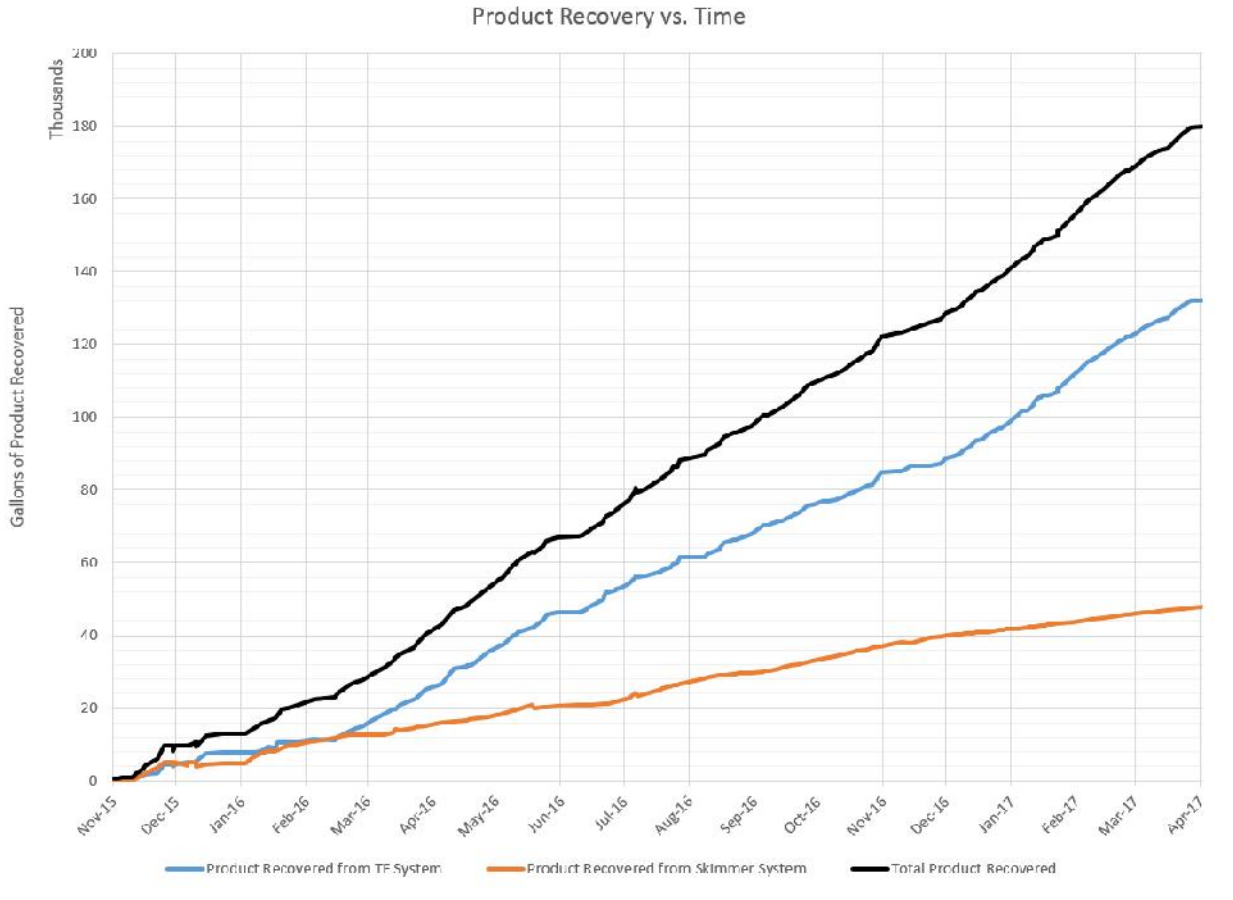
1. A cover system consisting of asphalt pavement
2. A LNAPL Recovery System – consisting of:
    a. A Vacuum Enhanced/Total Fluids (VER/TF) LNAPL recovery system
    b. A single-phase LNAPL recovery system
3. A packaged SVE, groundwater treatment, LNAPL Storage and Control system

2.3.1 Asphalt Cover System

The RAD II Site was paved with 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. Pavement maintenance will be performed in the spring, pending weather conditions, and will consist of sealing cracks with asphalt sealer as identified and described in the SMP. The engineer of record (EOR) will coordinate with the remediation project manager and current property owner to affect necessary repairs.

2.3.2 LNAPL Recovery System

LNAPL recovery on the RAD II properties 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 of the Site. The LNAPL recovery system has recovered and disposed of 179,632 gallons of LNAPL (from both RAD I and RAD II) through March 31, 2017 after the first 16-1/2 months of operation or an average of 358 gallons per day. Peak LNAPL recovery system recovery rates have exceeded 700 gallons per day. Using a representative specific gravity of 0.90, according to data provided in the RAWP, this represents a total recovered LNAPL mass of 1,348,318 pounds after the first 16-1/2 months of operation or an average of 2,687 pounds per day. Cumulative LNAPL recovery has been plotted below for the Total LNAPL Recovery System as well as the single-phase skimming and VER/TF recovery systems. Table 4, attached, provides a summary offsite LNAPL disposal shipments.



As the system has been modified and become more efficient, the energy efficiency of the operation has improved from an initial high level of over 2 kWh of electrical energy per gallon of recovered LNAPL to a best of 0.38 kWh per gallon.

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, 43,907 gallons were recovered by the single-phase skimming system. The skimming system had a monthly average peak of 168.7 gallons per day and a monthly average minimum of 30.5 gallons per day. The single-phase skimming system had a total of 9,848 run hours. Note that at times this system was programmed to operate at less than 24 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 98.59% for the year ranged from a low of 77.13% to a high of 100%.

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, 131,539 gallons were recovered by the VER/TF recovery system. The VER/TF system had a monthly average peak of 372.7 gallons per day and a monthly average minimum of 83 gallons per day. The VER/TF recovery system had a total of 6,450 run hours. Actual system uptime averaged 68.02% for the year ranged from a low of 19.59% to a high of 92.47%.

2.3.3 Groundwater Treatment System

Groundwater and LNAPL pumped from RAD II (and RAD I) 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 3,145,200 gallons of process water (extracted by the VER/TF System) or an average of 6,297 gallons per day. The peak process water treatment/discharge rate reached 21,600 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, had an average extracted oil/water ratio of 4.18% for the 16-1/2 month period

with a peak ratio of 6.2% and a minimum ratio of 3.04%. This variability is largely due to differences in extraction zones in terms of the amount of product present on the groundwater and the type 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-108 (VER/TF wells) is analyzed approximately once per month for PCB concentrations. PCB concentrations in LNAPL recovered from the single-phase skimming wells ranges between ND and just over 7 ppm, while concentrations in LNAPL recovered from the VER/TF have varied between ND and just under 20 ppm. 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 for only limited durations as recoverability has been higher than anticipated with only the TF hydraulic enhancement. As such, the need for SVE & VER enhancement has been minimal during the first year of operation. The SVE system was tested while operating TF zone TF-2 for a 2-week period in June, 2016 and also utilized on TF zones TF-2, and TF-6 for approximately 2 weeks to improve product recovery rates after prolonged duration of TF only recovery. The SVE system has operated for a total of 318 hours through November 2016. The SVE system is anticipated to be operated for more prolonged durations during the second year of operation as product recovery rates begin to fall off in TF zones with only hydraulic enhancement.

2.3.5 System Operational Challenges and Actions

- ***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. Five (5) ppm average iron concentrations were anticipated based on PDI pilot testing results. The high iron concentrations caused rapid fouling of the bag filters, LGAC treatment units and strainers which resulted in reduced system uptime. As such, a sequestering agent chemical injection system was added which mitigated this problem. Use of the sequestering agent allowed for 90% to 100% iron mass transfer to the sewer discharge while still remaining in compliance with the sewer discharge permit. Large capacity strainers were also added to the oil transfer pump suction strainer, and effluent flow meter which improved system up-time.
- ***Biological growth –*** Iron related bacteria growth is rapid during warm weather operation and is controlled adequately with the use of the planned 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.

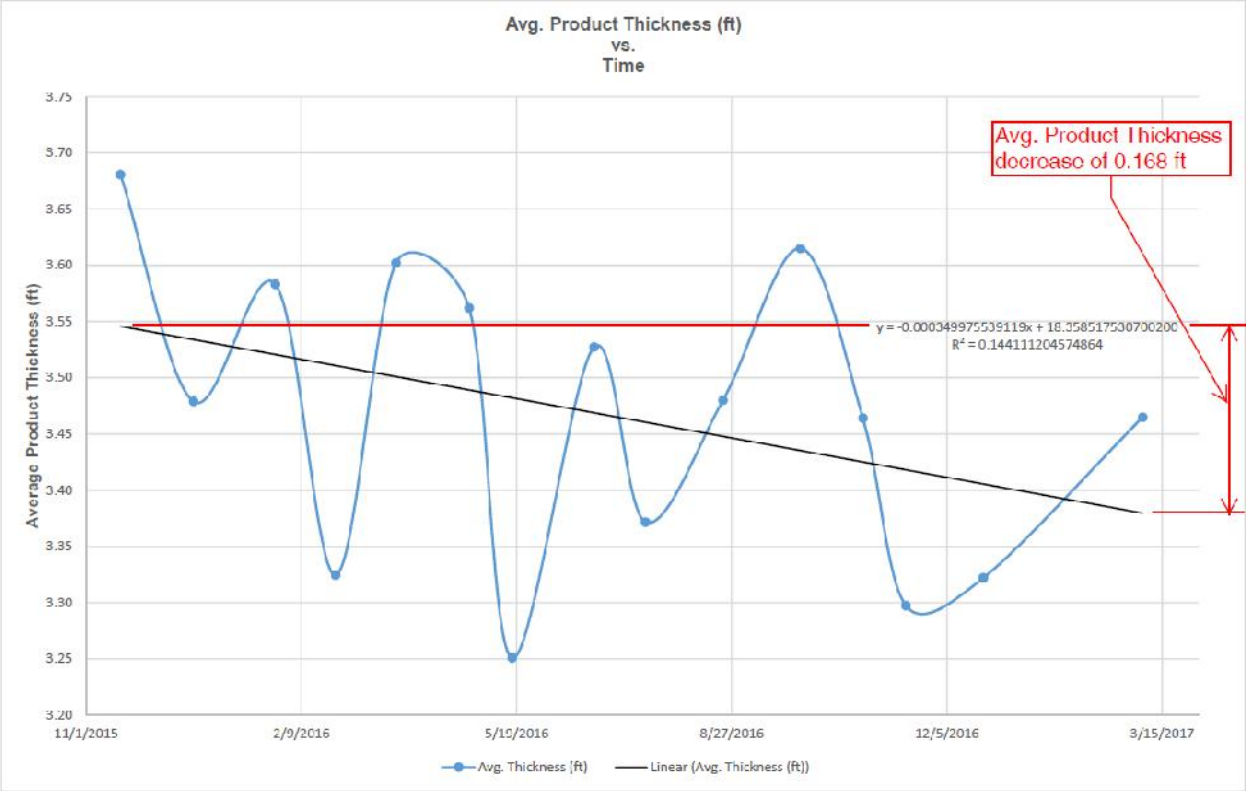
- ***Varied LNAPL characteristics*** **-** Different product characteristics and separation difficulties were resolved with the addition of a tube skimmer in the primary separation tank of the first stage oil water separator unit. The addition of the tube skimmer allowed for excellent oil/water separation at varied flow rates and LNAPL consistencies. Cold weather operational uptime of the VER/TF and groundwater treatment system has improved from approximately 55% average uptime to 95%+ uptime since installing and optimizing the tube skimmer installed on December 22, 2016.
- ***Grey Matter –*** During warm weather operation in summer and early fall of 2016, the use of three chemicals (biocide, sequestering agent and emulsion breaker) is needed to address the treatment system influent. A grey material forms and accumulates in and rapidly clogs bag filters, basket strainers, LGAC treatment vessels, flow meters, etc. and results in significantly reduced uptime. The material was analyzed and known to be largely composed of organic material not of petroleum hydrocarbon origin. A path forward involves material sampling to determine if unique chemistry in RAD I LNAPL/groundwater may be contributing to the problem.
- ***Recovery Well LNAPL PCB Sampling –*** Upon receiving Total PCB lab results from LNAPL sampled from recovery well TF-7F to determine if high Total PCB concentrations (>/=50 ppm) existed per the SMP, we became suspicious of the unusually high result (78.5 ppm) based on the prior round of base-line Total PCB sample results for this well (36.8 ppm). As such, we consulted with our validation expert as well as the lab and concluded that a permanganate clean-up procedure should have been performed in order to properly analyze the samples per the specified analytical method. The TF-7F LNAPL sample was re-analyzed using this clean-up procedure which then produced a lower Total PCB result (43.2 ppm). The well was re-sampled on 8/30/16 and produced a similar total PCB result (43.41 ppm) thus increasing confidence in the low PCB status (< 50 ppm) for LNAPL recovered by this well. This procedure is now a mandatory requirement for our laboratory when analyzing LNAPL for PCBs.

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

Monthly 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 0.17 feet (on average) as illustrated in the figure below.



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. Per the SMP, product is recovered from these wells independently from the balance of the system and the high PCB concentration LNAPL is managed and disposed of separately as TSCA regulated Waste. Product is recovered from these wells with a manually controlled single-phase skimmer pump configured to discharge into a DOT-shippable 55-gallon drum until such time that three (3) consecutive rounds of LNAPL PCB sampling indicates that concentrations have dropped below 50 ppm. TF-6D (RAD I) has followed this process after recovery and disposal of approximately

50 gallons of LNAPL. The recovery process is now focused on well TF-5D (RAD II). Refer to Figure 2 for locations and Tables 2 and 3, which summarize the results of baseline and year 1 sampling as well as results of PCB sampling from product recovered from TF-6D.

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 179,632 gallons. 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 was approximately 50 gallons. This waste stream was transported by Cycle Chem, Inc. to Veolia ES in Port Arthur, Texas for incineration.

2.4.4 Groundwater Monitoring

The first groundwater monitoring sampling event, since start of LNAPL Recovery System operations, occurred on December 20th and 21st, 2016. Results of this sampling event were found to be consistent with historic results and are provided under separate cover.

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 II - BCP #C241005, Long Island City, Queens, NY

Institutional Controls:	The property may be used for commercial use; J The RAD II Site may only be used for restricted use. J 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. J 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. J Data and information pertinent to site management must be reported at the frequency and in a manner as defined in the SMP. J All future activities that will disturb remaining contaminated material must be conducted in accordance with the SMP. J Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP. J Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in the SMP. J Access to the RAD II Site must be provided to agents, employees or other representatives of the State of New York

Site Identification: RAD II - BCP #C241005, 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). J 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. J 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 J Two 6,000 gallon LNAPL Storage Tanks J Two 8' x 40' Equipment Enclosures J 38 Skimmer well pumps and piping J 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 II	Monthly, Quarterly and Semi-Annual as indicated on Table 3 of SMP for RAD II
Groundwater Monitoring/Sampling of Monitoring Wells Identified on Table 3 of the SMP for RAD II	Semi-Annual as indicated on Table 3 of SMP for RAD II
Maintenance:	
Equipment maintenance per Table of SMP	Per Table 4 of SMP

Site Identification: RAD II - BCP #C241005, 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

- ***Asphalt cover system –*** Several potholes need repair. The engineer of record (EOR) will coordinate with the remediation project manager and current property owner to affect these repairs.
- ***CAC area –*** A new fence should be installed to enhance site security. The existing asphalt cover system must also be repaired in this area as a result of disturbance due to the installation of the new fence by the tenant.

3.1.4 Conclusions and Recommendations for Changes

- Section 4.3 outlines several identified recommended actions for the asphalt cover and LNAPL recovery system ECs in order to ensure ongoing effective protection for site occupants as well as to enhance, optimize and minimize the duration of the remedy.

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.

- Several existing asphalt cover potholes have been identified which need repair. The engineer of record (EOR) will coordinate with the remediation project manager and current property owner to affect repairs, as soon as weather permits
- CAC area fence and cap repair/completion.
- Complete the groundwater treatment system grey matter investigation and develop solution to allow for more effective and reliable warm weather operation.
- Increase the rate of VER system usage once recovery rates, without VER enhancement, diminish below the oil/water separation system maximum capacity at specific TF zones.
- Continue to optimize production by adjusting the duration and rotation of active VER/TF system zones.

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		T-801-052716	
Sample Date:		1/25/2016		1/25/2016		3/7/2016		3/7/2016		4/5/2016		4/5/2016		5/27/2016	
Lab Sample ID:		460-108101-8		460-108101-7		JC15542-1		JC15542-2		JC17676-2		JC17676-3		JC21238-1	
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	15		5.2		12.7		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	9.35		2.03		6.87	
Aroclor 1254	mg/kg	4.9		0.5	U	0.5	U	0.5	U	5.11		0.5	U	0.5	U
Aroclor 1260	mg/kg	0.5	U	3.3		0.5	U	0.5	U	5.22		0.5	U	5.99	
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		8.5		12.7		0.5	U	19.68		2.03		12.86	

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-1401-052716		T-801-071116		T-1401-071116		T-801-083016		T-1401-083016		RA-T801-102116		T-801-010617	
Sample Date:		5/27/2016		7/11/2016		7/11/2016		8/30/2016		8/30/2016		10/21/2016		1/6/2017	
Lab Sample ID:		JC21238-2		JC23844-1		JC23844-2		JC26784-1		JC26784-2		JC30289-2		JC35069-2	
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	0.5	U	0.5	U	0.5	U	4.37		1.24		0.5	U	2.86	
Aroclor 1248	mg/kg	0.5	U	4.32		0.5	U	0.5	U	0.5	U	2.85		0.5	U
Aroclor 1254	mg/kg	0.5	U	7.28		0.5	U	0.5	U	0.5	U	0.5	U	4.16	
Aroclor 1260	mg/kg	0.5	U	6.23		0.5	U	5.29		2.87		4.01		2.22	
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	0.5	U	17.83		0.5	U	9.66		4.11		6.86		9.24	
				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-1401-010617		T-801-031717	
Sample Date:		1/6/2017		3/17/2017	
Lab Sample ID:		JC35069-3		JC39231-2	
Aroclor 1016	mg/kg	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U
Aroclor 1242	mg/kg	0.976		3.37	
Aroclor 1248	mg/kg	0.5	U	0.5	U
Aroclor 1254	mg/kg	3.96		0.5	U
Aroclor 1260	mg/kg	2.08		0.5	U
Aroclor 1268	mg/kg	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U
Total PCBs	mg/kg	7.016		3.37	
		w/ Permanganate Cleanup Procedure (1)		w/ Permanganate Cleanup Procedure (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-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		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	

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-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	

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-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

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

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-4C-061516		TF-4C-061516		TF-4C-083016	
Sample Date:		8/30/2016		6/15/2016		6/15/2016		9/1/2016		6/15/2016		6/15/2016		8/30/2016	
Lab Sample ID:		JC26783-5		JC22334-1		JC22334-1R		JC26925-1		JC22334-2		JC22334-2R		JC26783-6	
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		26.4		17.6		18.6	
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	9.58		26.7		18		0.5	U	18.2		9.28		0.5	U
Aroclor 1260	mg/kg	10.0		0.5	U	14.1		3.2		0.5	U	8.0		8.1	
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		44.6		34.9		26.7	
		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)]**	

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

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-061516		TF-4D-061516		TF-5C-061516		TF-5C-061516		TF-5C-083016		TF-5D-061516		TF-5D-061516	
Sample Date:		6/15/2016		6/15/2016		6/15/2016		6/15/2016		8/30/2016		6/15/2016		6/15/2016	
Lab Sample ID:		JC22334-3		JC22334-3R		JC22334-4		JC22334-4R		JC26783-7		JC22334-5		JC22334-5R	
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	43.2		25.1		15.9		10.9		22.2		36.7		22.1	
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	50		20.9		19.6		10.9		12.9		21.1		16.9	
Aroclor 1260	mg/kg	0.5	U	18.1		0.5	U	8.4		14.2		0.5	U	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	93.2		**64.1**		35.5		30.16		49.3		57.8		**50.8**	
				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-083016		TF-5D-010617		TF-5D-020717		TF-5D-030617		TF-5D-033017		TF-6B-083016		TF-6D-0416	
Sample Date:		**8/30/2016**		**1/6/2017**		**2/7/2017**		**3/6/2017**		**3/30/2017**		**8/30/2016**		**4/5/2016**	
Lab Sample ID:		**JC26783-1**		**JC35069-1**		**JC37014-1**		**JC38433-1**		**JC40133-1**		**JC26783-4**		**JC17616-1**	
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	29.2		32.6		57.6		34.3		10.3		8.45		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	31.4	
Aroclor 1254	mg/kg	20.5		14.2		23.5		0.5	U	7.73		0.5	U	16	
Aroclor 1260	mg/kg	11.8		9.8		14.7		16.8		5.5		5.3		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	**61.5**		**56.56**		**95.8**		**51.1**		**23.51**		13.72		47.4	
		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-041316		TF-6D-042616		TF-6D-050516		TF-6D-051216		TF-6D-052716		TF-6D-053116		TF-6D-053116	
Sample Date:		4/13/2016		4/26/2016		5/5/2016		5/12/2016		5/27/2016		5/31/2016		6/7/2016	
Lab Sample ID:		JC18303-1		JC19129-1		JC19787-1		JC20188-1		JC21237-1		JC21329-1		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	23.9		22.4		0.5	U	21.4		21.2	
Aroclor 1248	mg/kg	21.6		17.9		0.5	U	0.5	U	17.9		0.5	U	5	U
Aroclor 1254	mg/kg	0.5	U	14.5		18.1		0.5	U	5	U	21.2		13.4	
Aroclor 1260	mg/kg	12.5		14.3		12.5		15.0		15.3		12.7		11.7	
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	34.1		46.7		54.5		37.4		33.2		55.3		46.3	

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-061616		TF-6D-061616		TF-6D-062216		TF-6D-063016		TF-6D-070716		TF-6D-071116		TF-7E-061516	
Sample Date:		6/16/2016		6/16/2016		6/22/2016		6/30/2016		7/7/2016		7/11/2016		6/15/2016	
Lab Sample ID:		JC22334-8		JC22334-8R		JC22828-1		JC23438-1		JC23724-2		JC23844-3		JC22334-6	
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	18.2		7.78		0.5	U	10.7		8.47		9.32		17.1	
Aroclor 1248	mg/kg	0.5	U	0.5	U	23.6		0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1254	mg/kg	21.4		8.05		25.7		9.49		9.86		11.4		26.1	
Aroclor 1260	mg/kg	100.0	U	3.9		8.2		8.0		5.6		6.3		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	39.6		19.73		57.5		28.17		23.92		27.06		43.2	
				w/ Permanganate Cleanup Procedure [1]						w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]			

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

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-073016		TF-7F-061516		TF-7F-061516		TF-7F-083016	
Sample Date:		6/15/2016		8/30/2016		6/15/2016		6/15/2016		8/30/2016	
Lab Sample ID:		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
Aroclor 1221	mg/kg	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
Aroclor 1242	mg/kg	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
Aroclor 1254	mg/kg	16.3		12.9		27.7		15.9		20.3	
Aroclor 1260	mg/kg	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
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	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 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):

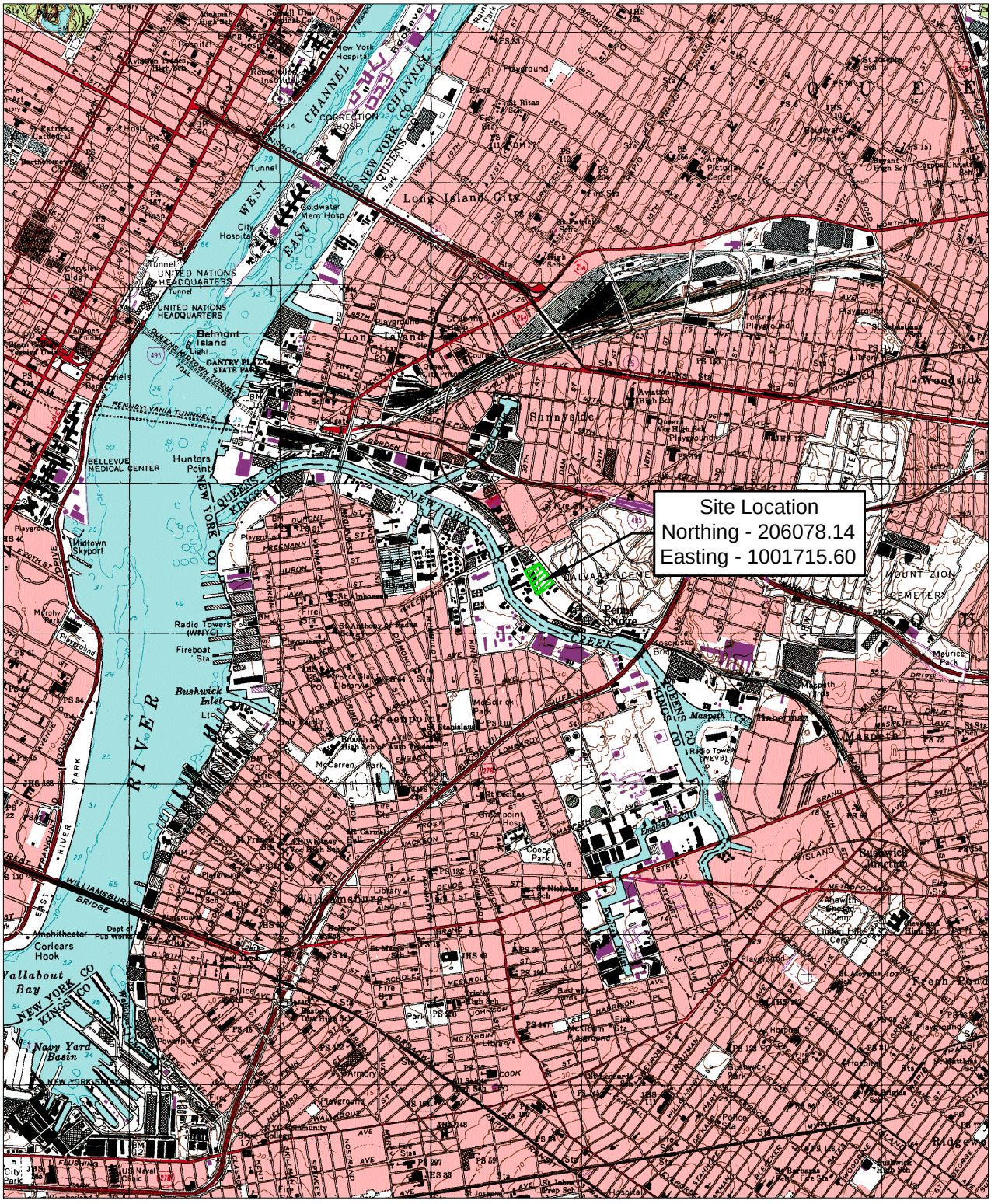
Date	BOL Number	T-801	T-1401	Total
12/18/15	0277706	5,000 gal	-	5,000 gal
01/11/16	0277790	-	4,767 gal	4,767 gal
02/02/16	0277924	5,032 gal	-	5,032 gal
02/04/16	0277942	-	4,900 gal	4,900 gal
03/02/16	278269	2,703 gal	2,592 gal	5,295 gal
03/17/16	0278392	4,613 gal	-	4,613 gal
03/31/16	278518	5,000 gal	-	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
	TOTALS:	**131,539 gal**	**43,907 gal**	**175,446 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
	TOTALS:	**0 gal**	**0 gal**	**0 gal**	**50 gal**	**50 gal**

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

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

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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

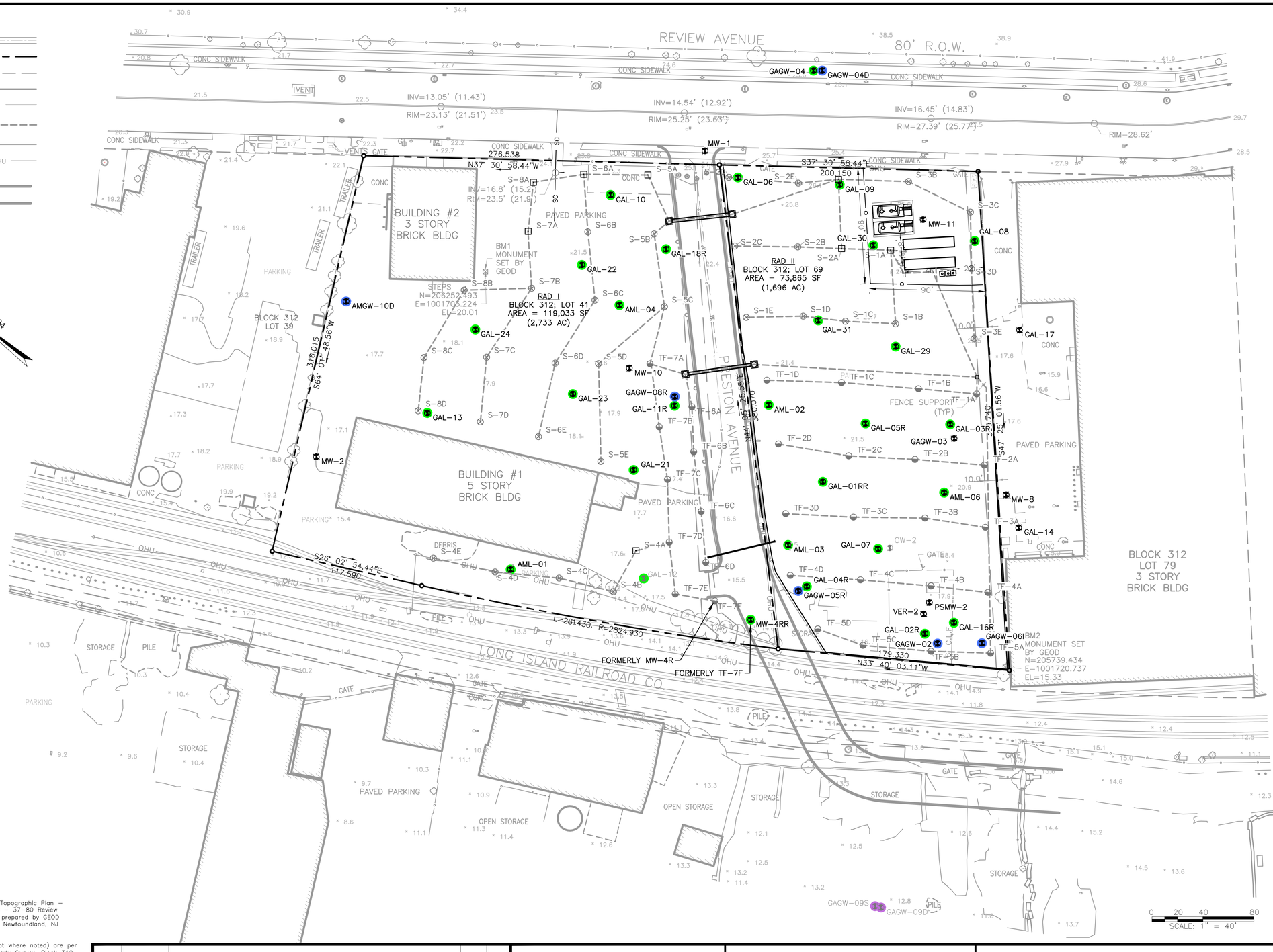
LEGEND

- FIRE HYDRANT
- UNKNOWN VALVE
- LIGHT POLE
- UTILITY POLE
- CATCHBASIN
- ROUND CATCHBASIN
- MONITORING WELL (INCLUDED IN LNAPL MONITORING PROGRAM)
- MONITORING WELL (INCLUDED IN GROUNDWATER MONITORING PROGRAM)
- MONITORING WELL (INCLUDED IN GROUNDWATER MONITORING PROGRAM IF ACCESSABLE)
- MONITORING WELL (NOT INCLUDED IN THESE LNAPL OR GROUNDWATER MONITORING PROGRAMS)
- EXISTING MONITORING WELL (STATUS UNKNOWN)
- 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
- SKIMMER WELL WITH CONTROLLER
- TOTAL FLUIDS WELL

LINE LEGEND

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

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

APPENDIX A

Monthly Reports

Review Ave. LNAPL Recovery System Monthly Summary
December 2015

Work completed in December 2015:

- Final Electrical Inspection was performed and passed on 12/17.
- Cast-in-Place Concrete Inspection was completed on 12/18.
    - No record received from the inspection company to date.
- Product Load Out on 12/18 from T-801
    - Approximately 5,250 GAL taken offsite by Cyclo Chem.
- LTMP Monitoring Well Gauging round was completed on 12/21.
- Air Compressor condensate drain line was routed to SVE KO Tank instead of 5 GAL bucket.
- Housekeeping

O&M Activities:

- O&M data collected on 12/7, 12/14, 12/18, and 12/23.
- Biocide injection stopped for winter on 12/1.
- T-801 and T-1401 sampled for PCBs on 12/3 by American Analytical Laboratories.
- Gary Richards (Redux Technology) onsite on 12/3, 12/9, and 12/21 to measure Total Iron through TF System. Additional Total Iron readings were taken on 12/23 by Amec Foster Wheeler.
- Redux 910 Chemical Feed Pump Stroke increased from 35% to 45% on 12/8, and from 45% to 65% on 12/9.
- Bag Filters changed on 12/7.
- LGAC influent and midfluent sampled for EPH, HEM (Oil and Grease) and SGT-HEM (Non-Polar Material) on 12/14.
- Approximately 3,162 GAL water removed from T-1401 on 12/8, 12/14, 12/18, and 12/23.
- Product Transfer Pump suction strainer cleaned on 12/17.

TF System Production Results

- TF System uptime for December was 215.68 Actual Run Hours out of 500.05 Available Hours, or 43.13%
    - Available Hours = Scheduled Daily Operating Hours (23/7 due to DST error on HMI) – scheduled maintenance time – product removal time – force majeure time (power outage, etc.)
- 8,090 GAL Product Recovered Total since system start-up.
- 5,795 GAL Product Recovered in December.
    - Average TF Product recovery rate for December was 186.9 GPD, or 618 GPD considering downtime.
- 223,830 GAL Effluent discharged Total since start-up.
- 147,530 GAL Effluent discharged in December.
    - Average 4,759 GPD, or 15,733 GPD considering downtime
- Oil/Water Ratio = 3.93% (Zones TF-3 & 4)
- TF system down as of 2:06 a.m. on 12/24 on 12/24 due to Level Alarm HH in the OWS Effluent tank caused by excessive backpressure in the LGAC units. LGAC needs to be changed out before the TF system can be restarted

Review Ave. LNAPL Recovery System Monthly Summary
December 2015

Total Iron through Total Fluids System

Date	12/3/2015	12/9/2015	12/21/2015	12/23/2015
OWS Influent	20 ppm	22 ppm	-	20 ppm
OWS Effluent	16 ppm	19.7 ppm	5 ppm	20 ppm
Bag Filter Effluent	-	19.7 ppm	-	20 ppm
LGAC Midfluent	-	6 ppm	-	7 ppm
LGAC Effluent	-	1 ppm	-	5 ppm

Skimmer System Production Results:

- Skimmer System uptime for December was 497.76 Actual Run Hours out of 645.37 Available Hours, or 77.13%.
- 4,966 GAL Product Recovered Total since start-up.
- 1,218 GAL Product Recovered in December.
    - Average Skimmer Product recovery rate for December was 39.3 GPD, or 56.3 GPD considering downtime and water removal.
- Skimmer system down as of 11:15 a.m. on 12/29 due to Level Alarm HH in T-1401. This indicates that the T-1401 is 95% full and is ready for Product load out. Excess water will need to be removed from the tank (approximately 775 GAL) but cannot be done until TF System is restarted.

Total Product Recovery System Results:

- Total system uptime (TF System AND/OR Skimmer System running) for December was 527.42 Actual Run Hours out of 645.37 Available Hours, or 81.72%.
- 13,056 GAL Product Recovered Total since system start-up.
- 7,013 GAL Product recovered in December.
    - Average Product recovery rate for December was 226 GPD, or 306 GPD considering system downtime.
- 11,258 kWh Energy Consumption Total (as of 1/1/16) since system start-up.
- 4,874 kWh Energy Consumption for December.
- 0.695 kWh/GAL Average Energy Consumed per GAL of Product Recovered for December.

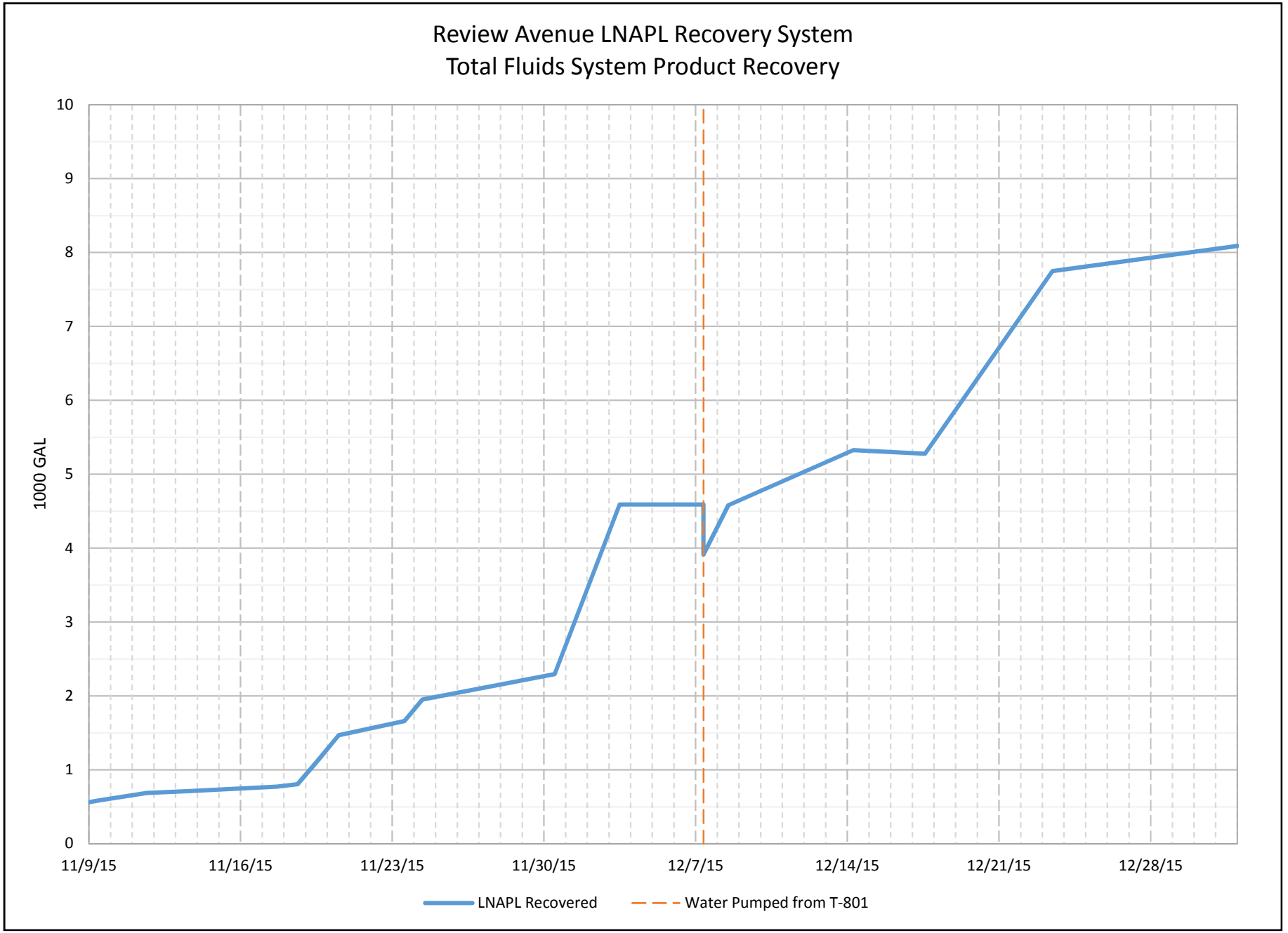
Upcoming Activities:

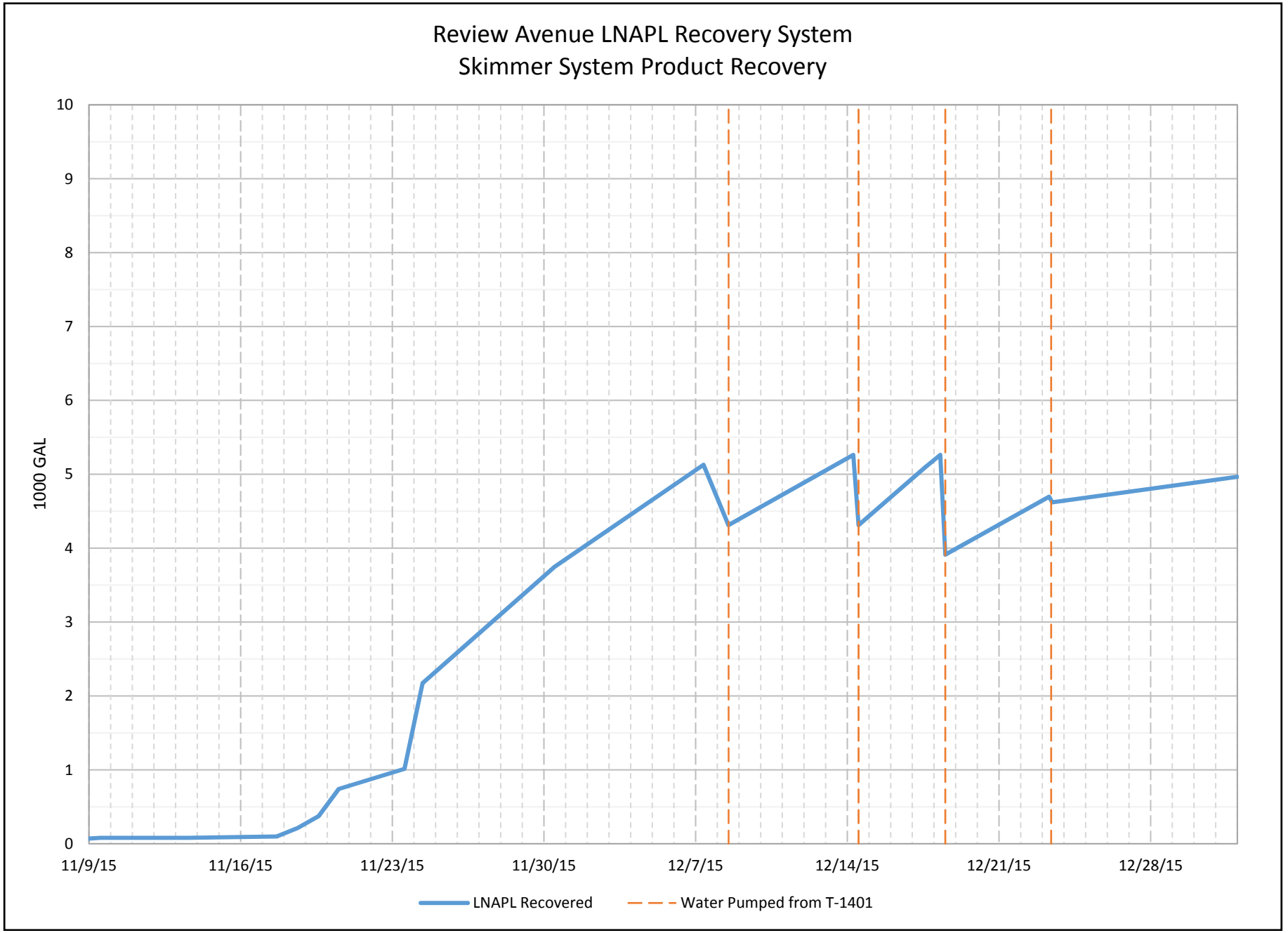
- Product load out from T-1401 – Monday 1/11/16
- LGAC change-out – next week if possible
- Quarterly Effluent Compliance Sampling – within the next 2 weeks
- Next O&M Visit – Scheduled for Monday 1/11/16
- Next monthly round of monitoring well gauging – within next 2 to 3 weeks
- Add basket strainers to Product flow meters, reinstall flow meters, and add larger basket strainer on suction side of Product Transfer Pump – within next 2 weeks

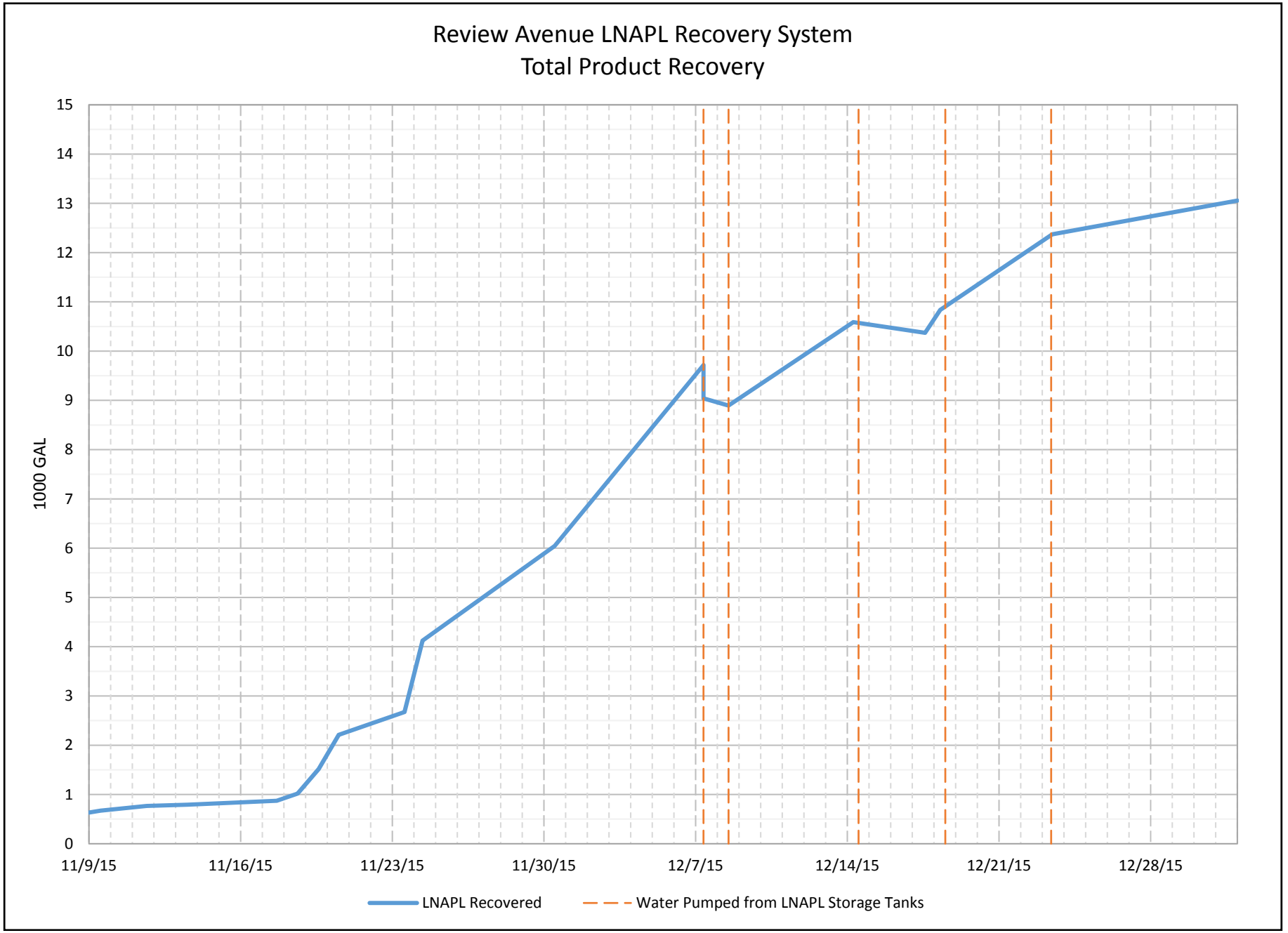
Attachments:

- Cumulative LNAPL Recovery Graphs

Prepared By: VMW 1/8/16


Review Avenue LNAPL Recovery System
Total Fluids System Product Recovery
1000 GAL
10
9
8
7
6
5
4
3
2
1
0
11/9/15
11/16/15
11/23/15
11/30/15
12/7/15
12/14/15
12/21/15
12/28/15
LNAPL Recovered
Water Pumped from T-801


Review Avenue LNAPL Recovery System
Skimmer System Product Recovery
1000 GAL
10
9
8
7
6
5
4
3
2
1
0
11/9/15
11/16/15
11/23/15
11/30/15
12/7/15
12/14/15
12/21/15
12/28/15
LNAPL Recovered
Water Pumped from T-1401


Review Avenue LNAPL Recovery System
Total Product Recovery
1000 GAL
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
11/9/15
11/16/15
11/23/15
11/30/15
12/7/15
12/14/15
12/21/15
12/28/15
LNAPL Recovered
Water Pumped from LNAPL Storage Tanks

Review Ave. LNAPL Recovery System Monthly Summary
January 2016

Work completed in January 2016:

- Product Load Out on Monday 1/11 from T-1401. Approximately 4,800 GAL Product removed. Skimmer system restarted after Load Out.
- Skimmer pumps adjusted to minimize water intake.
- LGAC vessels changed out with Reactivated Carbon (2,000 LB total) from General Carbon on Friday 1/15. LGAC vessels filled with water and allowed to de-aerate over weekend. TF system restarted (TF Zones 3 & 4 running) on Monday 1/18.
- Quarterly Compliance Effluent Sampling (Q1 2016) on 1/25.
- Monthly Internal LGAC Performance Monitoring Sampling on 1/25.
- Total & Dissolved Iron Sampling on 1/25.
- LNAPL Tank T-801 & T-1401 PCB Sampling on 1/25.
- Monthly monitoring well gauging on 1/28.
- Housekeeping

O&M Activities:

- O&M data collected on 1/4, 1/11, 1/14, 1/15, 1/18, 1/21, 1/25.
- Wood blocks placed under vapor phase treatment cubes on 1/11.
- LGAC vessels drained on 1/4, carbon change-out on 1/15.
- Total Iron field test readings taken on 1/18.
- Bag filters changed on 1/21 and 1/25. Secondary bag filters upgraded to 50 micron oil-absorbing bag filters.
- Switched to second drum of emulsification breaker (Redux 910).
- Transit Corp. onsite 1/21 and 1/25 to continue to investigate TF-7 SVE line vacuum leak. Clearly labeled TF SVE lines in trailer.
- OWS Product pump y-strainer cleaned out on 1/21.
- Total & Dissolved Iron field test readings taken on 1/18 and 1/21 by Amec Foster Wheeler and 1/27 by Gary Richards (Redux Technologies).
- Redux Technologies onsite 1/25 and 1/27 performing jar tests and dosing with Redux 910; no decrease in Dissolved Iron observed by increasing Redux 910 dose.

TF System Production Results

- TF System uptime for December was 130.95 Actual Run Hours out of 530.40 Available Hours, or 24.69%
    - Available Hours = Scheduled Daily Operating Hours (23/7 due to DST error on HMI) – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
    - System shut down from 12/24/15 to 1/18/16 due to plugged LGAC units.
    - System shut down (scheduled) from 1/22 to 1/24 due to inclement weather.
    - System shut down on 1/26 due to high level in T-801.
- Approximately 10,606 GAL Product Recovered Total since system start-up.
- Approximately 2,610 GAL Product Recovered in January.
    - Average TF Product recovery rate for January was 84.2 GPD, or 458 GPD accounting for downtime.
- 282,380 GAL Effluent discharged Total since start-up.
- 81,110 GAL Effluent discharged in December.
    - Average 4,759 GPD, or 14,246 GPD considering downtime
- Oil/Water Ratio = 3.22% (Zones TF-3 & 4)

Review Ave. LNAPL Recovery System Monthly Summary
January 2016

Total Iron [Dissolved Iron] through Total Fluids System (ppm)

Date	1/18/16	1/21/16	1/25/16 (Lab)	1/27/16
OWS Influent	20	45 [15.75]	23.2 [0.193]	20 [12.6-13]
OWS Effluent	20	31.5 [11.25]	17.5 [0.288]	16 [10.6-11]
Bag Filter Midfluent	-	-	18.1 [ND]	-
Bag Filter Effluent	20	18 [9]	17.2 [ND]	16 [9.5-10]
LGAC Midfluent	0.6	4 [3.5]	-	-
LGAC Effluent	0.3	1 [0.25]	0.391 [ND]	-

Skimmer System Production Results:

- Skimmer System uptime for January was 415.60 Actual Run Hours out of 415.60 Available Hours, or 100%.
    - Available Hours = Scheduled Daily Operating Hours (23/7 due to DST error on HMI) – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
    - Although the system was shut down until 1/11, the downtime was due to Product Load Out requirements and was not factored into the Available Hours calculation.
    - System shut down (scheduled) from 1/22 to 1/24 due to inclement weather.
- 9,452 GAL Product Recovered Total since start-up.
- Approximately 4,486 GAL Product Recovered in January
    - Average Skimmer Product recovery rate for January was 145 GPD, or 248 GPD considering downtime and water removal.

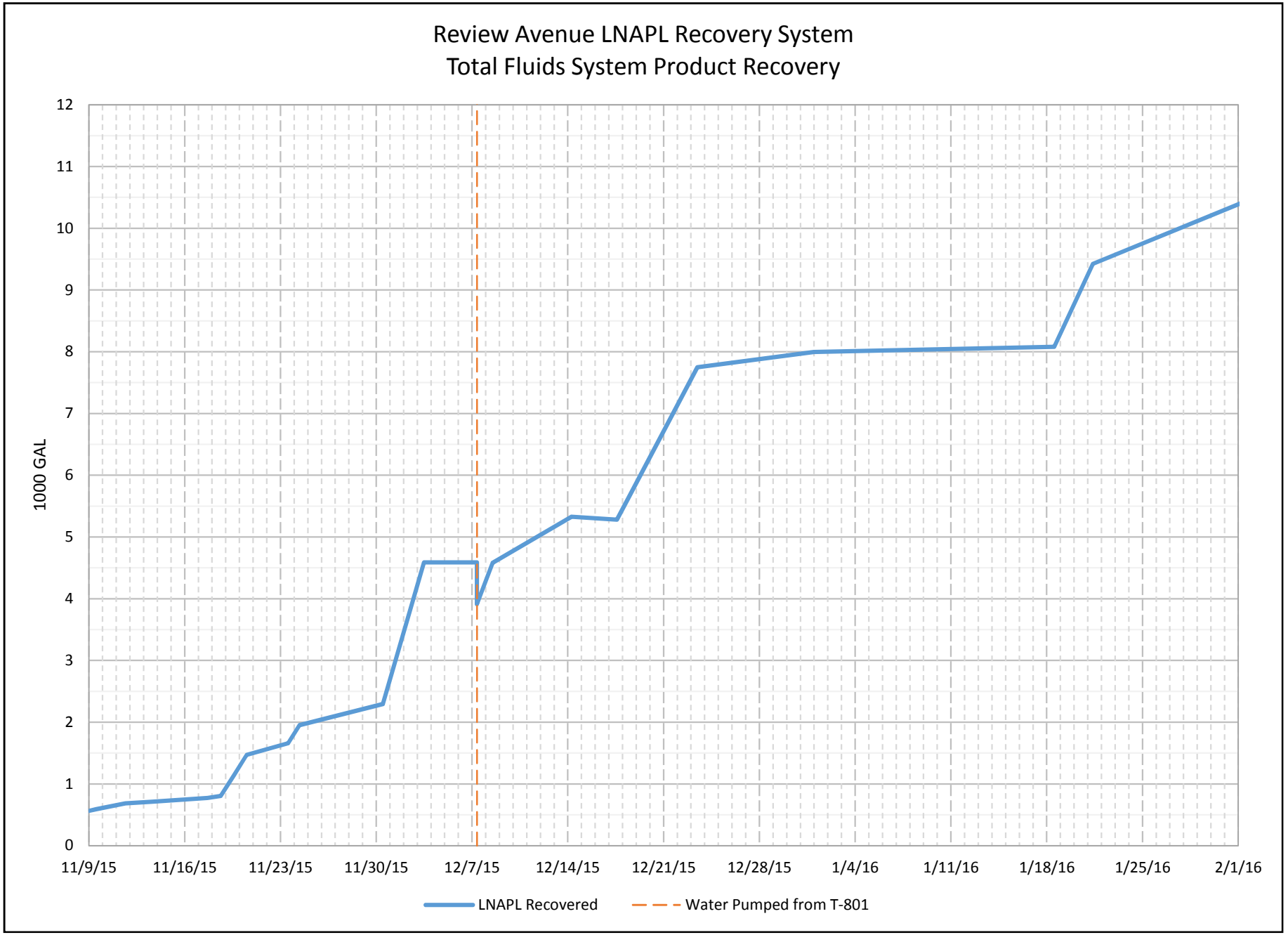
Total Product Recovery System Results:

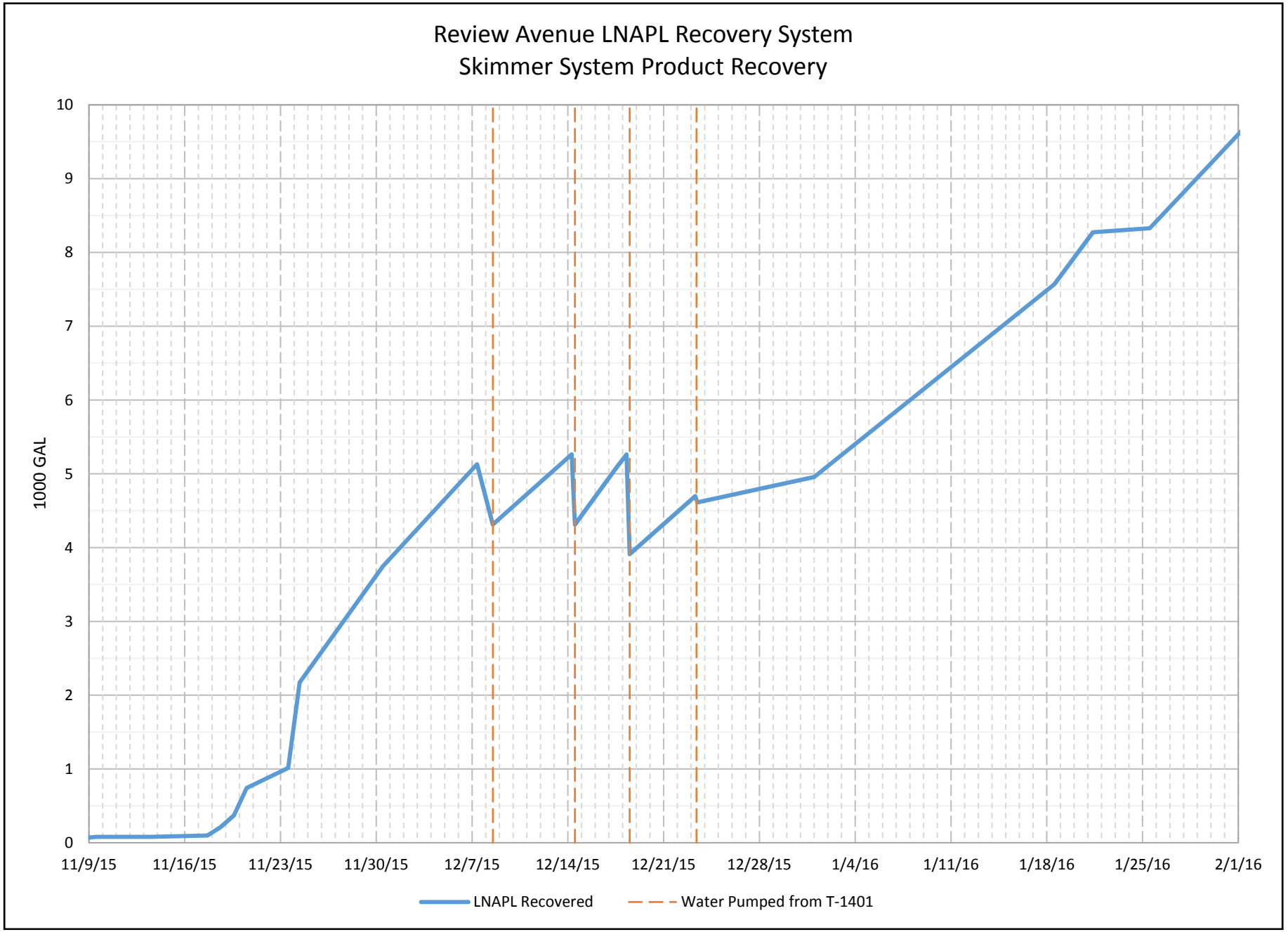
- 20,152 GAL Product Recovered Total since system start-up.
- 7,096 GAL Product recovered in December.
    - Average Product recovery rate for January was 229 GPD
- 16,230 kWh Energy Consumption Total (as of 2/1/16) since system start-up.
- 4,973 kWh Energy Consumption for January.
- 0.70 kWh/GAL Average Energy Consumed per GAL of Product Recovered for January.

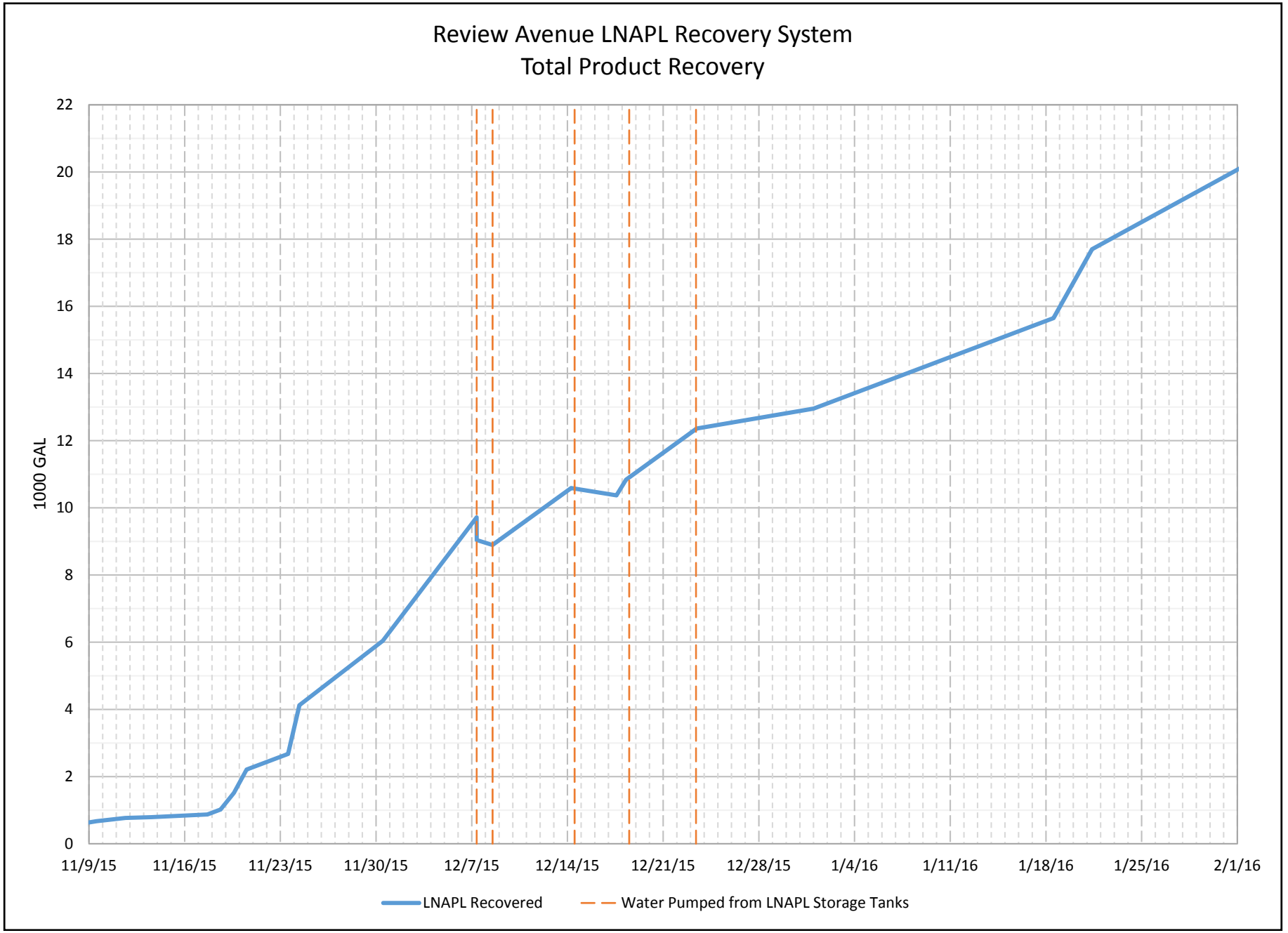
Attachments:

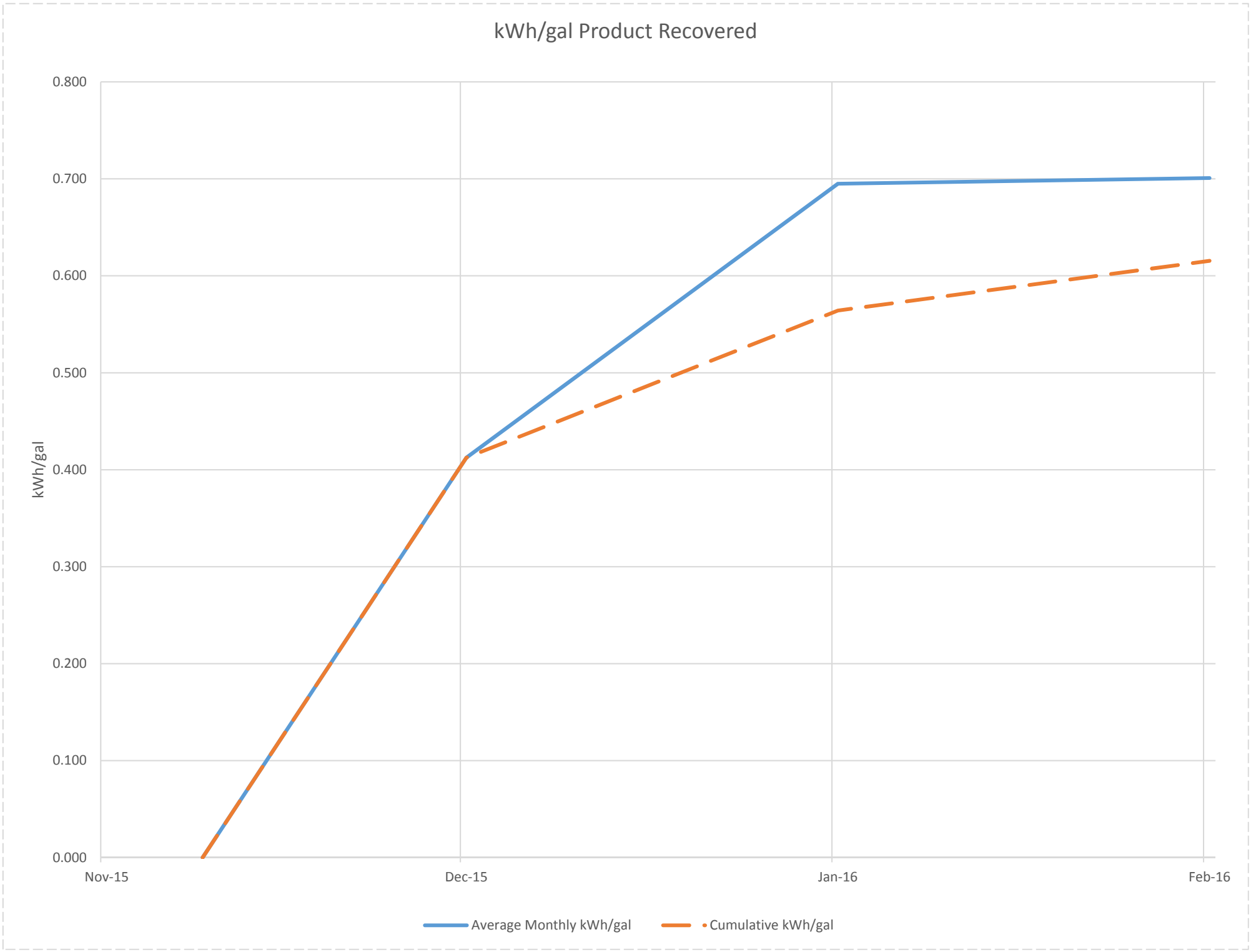
- Cumulative LNAPL Recovery Graphs
- kWh/GAL Graph

Prepared By: VMW 1/8/16


Review Avenue LNAPL Recovery System
Total Fluids System Product Recovery
1000 GAL
12
11
10
9
8
7
6
5
4
3
2
1
0
11/9/15
11/16/15
11/23/15
11/30/15
12/7/15
12/14/15
12/21/15
12/28/15
1/4/16
1/11/16
1/18/16
1/25/16
2/1/16
LNAPL Recovered
Water Pumped from T-801


Review Avenue LNAPL Recovery System
Skimmer System Product Recovery
1000 GAL
10
9
8
7
6
5
4
3
2
1
0
11/9/15
11/16/15
11/23/15
11/30/15
12/7/15
12/14/15
12/21/15
12/28/15
1/4/16
1/11/16
1/18/16
1/25/16
2/1/16
LNAPL Recovered
Water Pumped from T-1401


Review Avenue LNAPL Recovery System
Total Product Recovery
1000 GAL
22
20
18
16
14
12
10
8
6
4
2
0
11/9/15
11/16/15
11/23/15
11/30/15
12/7/15
12/14/15
12/21/15
12/28/15
1/4/16
1/11/16
1/18/16
1/25/16
2/1/16
LNAPL Recovered
Water Pumped from LNAPL Storage Tanks


kWh/gal Product Recovered
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
kWh/gal
Nov-15
Dec-15
Jan-16
Feb-16
Average Monthly kWh/gal
Cumulative kWh/gal

Review Ave. LNAPL Recovery System Monthly Summary
February 2016

Work completed in February 2016:

- Product Load Out on 2/2 from T-801. 5,032 GAL Product removed (offsite) according to the bill of lading.
- Product Load Out on 2/4 from T-1401. 4,900 GAL Product removed (offsite) according to the bill of lading.
- Installed 1 basket strainer, 2 y-strainers, and 2 flow totalizers (on OWS Product effluent pump and on Skimmer system) by AARCO on 2/2.
- Broken manway bolt at GAL-01RR fixed on 2/2.
- OWS upgrades performed on 2/17 and 2/22:
    - Rotary skimmer upgraded with larger slot size.
    - Gate valve and sight glass installed on pre-separation tank (T-701) to allow for liquid head adjustment and more accurate skimmer adjustment.
    - Sample taps and injection port installed on piping between T-701 and T-702.
    - Sequestering Agent (Redux 330) injected at injection port between the tanks with 40% stroke. Moved to T-701 influent on 2/29 with 40% stroke. To be moved back between tanks with 60% stroke on 3/7.
- Oil/Water Separator cleaned on 2/12 by AARCO. Oil absorbent bag in OWS changed out.
- Organic Zeolite (OZ) jar testing on 2/17 with Redux Technologies.
- Carbon change out on 2/22.
    - Vessels pressure washed before refilling.
    - Lead LGAC vessel: 500 lbs new carbon on the bottom; 1,000 lbs OZ on top.
    - Lag LGAC vessel: 1,000 lbs new carbon.
    - Vessels backwashed with clean water using bottom-up de-aeration process.
- Total & Dissolved Iron testing on 2/17 and 2/24 by Redux Technologies. Bacteria testing by Redux Technologies on sample from 2/18.
- Monthly monitoring well gauging on 2/25.
- T-801 Tank Gauge replaced by TransitCorp on 2/29.

O&M Activities:

- O&M data collected on 2/2, 2/11, 2/12, 2/22, 2/24, 2/29.
- TF system off from 1/26 to 2/2 due to high level in Product tank T-801. System shut down on 2/4 due to high pressure in lead LGAC vessel. 1Q 2016 effluent compliance sample results received on 2/5 indicated an estimated level of SGT-HEM above the daily discharge limit (as such, plan was made to resample). System restarted on 2/22 and ran until 2/25, when it shut down due to high pressure in LGAC units. Both LGAC vessels drained, rodded, and cleaned on 2/29 and TF System restarted. High pressure observed in primary LGAC unit; system switched to bypass primary LGAC unit and run through secondary LGAC unit only.
- Bag filters changed on 2/12 with oil-absorbing bags, replaced with standard bags on 2/22, and changed on 2/29 with 20 micron (lead) and 10 micron (lag) standard bags.
- OWS upgrades performed on 2/17 and 2/22 (details above).
    - Levels in Pre-Separation tank (T-701) adjusted.
    - Product thickness in T-701 was 10-11" on 2/22 (rotary skimmer with ½" slot); reduced to 1" Product thickness on 2/24 (switched to rotary skimmer with ⅞" slot).
- OWS cleaned by AARCO on 2/12.
- Both Biocide and Emulsification Breaker (Redux 910) were being injected as of 2/22.
- Sequestering Agent (Redux 330) is being injected automatically as of 2/24. Biocide injection was stopped so the chemical feed pump could be used to inject the Sequestering Agent.
- Carbon change out on 2/22 (details above).

Review Ave. LNAPL Recovery System Monthly Summary
February 2016

- Total Iron Testing on 2/24:
    - OWS (System) Influent = 24.6 ppm
    - Between T-701 and T-702 = 11.9 ppm
    - Bag filter effluent = 10.6 ppm
    - LGAC midfluent = 1.36 ppm
- Bacteria testing on 2/18:
    - Negative for Total Aerobic Bacteria (slime producing bacteria; this is good)
    - Strong positive for Iron Oxidizing Bacteria.
- LGAC Influent/Midfluent/Effluent sampled for SGT-HEM on 2/22 and 2/25. Effluent sample not run on 2/22, as Influent and Midfluent results were unrealistically low and believed to be not representative. Effluent sample results from 2/25 indicated a level significantly lower than the daily discharge limit. See attached summary table for analytical results.
- Effluent resampled for Hexavalent Chromium on 2/2 and 2/22; lab analyzed samples out of holding time. To be resampled on 3/7.

TF System Production Results

- TF System uptime for February was 122.29 Actual Run Hours out of 624.37 Available Hours, or 19.59%
    - Available Hours = Scheduled Daily Operating Hours (23/7 due to programming bug on HMI) – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
- Approximately 13,862 GAL Product Recovered Total since system start-up.
- Approximately 3,359 GAL Product Recovered in February.
    - Average TF Product recovery rate for February was 115.8 GPD, or 632 GPD accounting for downtime.
- 357,540 GAL Effluent discharged Total since start-up.
- 75,160 GAL Effluent discharged in February.
    - Average 2,592 GPD, or 14,136 GPD considering downtime
- Oil/Water Ratio = 4.47% (Zones TF-3 & 4)

Skimmer System Production Results:

- Skimmer System uptime for January was 567.98 Actual Run Hours out of 567.98 Available Hours, or 100%.
    - Available Hours = Scheduled Daily Operating Hours (23/7 due to programming bug on HMI) – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
    - System shut down on 2/1 due to high level in Product tank T-1401. Excess water removed from tank on 2/2 and Skimmer System restarted.
    - Suspected power outage caused air compressor shut down on 2/14, causing the skimmer system to shut down until 2/17 restart.
- 12,648 GAL Product Recovered Total since start-up.
- Approximately 3,196 GAL Product Recovered in February.
    - Average Skimmer Product recovery rate for February was 110 GPD, or 129 GPD considering downtime and water removal.

Total Product Recovery System Results:

- 26,510 GAL Product Recovered Total since system start-up.
- 6,555 GAL Product recovered in February.
    - Average Product recovery rate for February was 226 GPD

Review Ave. LNAPL Recovery System Monthly Summary
February 2016

- 21,794 kWh Energy Consumption Total (as of 3/1/16) since system start-up.
- 5,563 kWh Energy Consumption for February.
- 0.85 kWh/GAL Average Energy Consumed per GAL of Product Recovered for February.

Prepared By: VMW 3/9/16

Review Ave. LNAPL Recovery System Monthly Summary
March 2016

Work completed in March 2016:

Week of Tue 3/1 – Sat 3/5

- Product Load Out on 3/2 from T-801 and T-1401
    - 5,295 GAL Product removed (offsite) according to the bill of lading
    - Approximately 2,703 GAL from T-801 and 2,592 GAL from T-1401

Week of Sun 3/6 – Sat 3/12

- TPH samples collected on 3/7 at carbon influent and effluent
- Relocated sequestering agent injection point to between T-701 and T-702 (OWS Separation Tanks)
- Performed leak isolation tests on SVE header TF-7
- Chemical delivery on 3/10

Week of Sun 3/13 – Sat 3/19

- Product Load Out on 3/17 from T-801.
    - 4,613 GAL Product removed (offsite) according to bill of lading
- Carbon change out on 3/17
    - Primary LGAC vessel completely changed out with fresh reactivated carbon
    - Only approximately 75% of carbon removed from Secondary LGAC vessel due to consistency of carbon
    - System switched to run only through Primary LGAC unit

Week of Sun 3/20 – Sat 3/26

- Carbon change out completed on 3/22
    - Secondary LGAC vessel changed out with fresh reactivated carbon
- Chemical delivery on 3/24
- Switch TF Recovery to Zones 1 and 5 on 3/24 from zones 3 and 4
- Monthly well gauging data collected on 3/24

Week of Sun 3/27 – Thu 3/31

- Product Load Out from T-801 on 3/31
    - 5,000 GAL Product removed (offsite) according to bill of lading

O&M Activities:

Week of Sun 2/28 – Sat 3/5

- Backwashed online LGAC vessel (secondary) on 3/2.
- Total / dissolved Iron measurements taken on 3/2 by Redux Tech.
    - Pre-Sep Tank Influent: 18 ppm total; 4.4 ppm dissolved
    - Post Pre-Sep Tank, Influent to OWS Tank: 16.6 ppm total; 0.5 ppm dissolved
    - Bag Filter Influent: 15.2 ppm total; 0.8 ppm dissolved
    - Post Bag Filter/LGAC Influent: 9.8 ppm total; 0.8 ppm dissolved
    - LGAC Effluent: 1.8 ppm total; 0.5 ppm dissolved

Week of Sun 3/6 – Sat 3/12

- TPH (SGT-HEM) samples collected on 3/7 from carbon influent and effluent.
- Hexavalent Chromium sample collected on 3/7 for 1Q 2016 Compliance Sampling
- Iron data collected with field test kit on 3/7. Almost no dissolved iron observed; approximately 30 ppm Total Iron holding all the way to the effluent point
- Bag filters changed on 3/7
    - 25 micron bags in primary units; 10 micron bags in secondary units

Prepared By: VMW 4/11/16
Checked By: TCK 4/11/16

Review Ave. LNAPL Recovery System Monthly Summary
March 2016

- Added air fitting to tee between compressed air supply regulators on 3/10 to facilitate LGAC vessel blow-down in advance of LGAC change-out activities..
- Clean all basket and y-strainers on 3/10.
- Pumped water from T-801 and T-1401 on 3/10
- Backwashed online LGAC vessel (secondary) on 3/10.
- Housekeeping on 3/2 and 3/10

Week of Sun 3/13 – Sat 3/19

- Total / dissolved Iron measurements taken by Redux Tech on 3/14
    - Total Iron going into the carbon (16 ppm) is passing through the carbon to the sewer (16 ppm). As such, the sequestering agent pump dose was reduced
- Primary and secondary LGAC vessels drained on 3/16 in preparation for change out on 3/17
- Bag filters changed on 3/17
    - 25 micron bags in primary units; 10 micron bags in secondary units
- Y-strainers and basket strainers cleaned on 3/17
- Skimmer System flow meter to T-1401 removed from system on 3/17 due to restriction

Week of Sun 3/20 – Sat 3/26

- Total / dissolved Iron measurements taken by Redux Tech on 3/21
- Chemical feed pumps for Redux 330 and Redux 910 adjusted to 50% stroke on 3/21
- Backwash secondary LGAC vessel on 3/22
- TPH (SGT-HEM) sample collected at LGAC influent on 3/22
- Install shelving in SVE trailer on 3/22
- Repair broken vault lid on 3/22 such that it sits flush and can be bolted down. Replacement of new lid with new hinge still required. Replacement lid ordered.
- Bag filters changed on 3/24
    - 25 micron bags in primary units; 10 micron bags in secondary units
- Adjust OWS skimmers on 3/24 for water minimization from TF System.
- Pump water from T-801 on 3/22 and 3/24
- Clean Product pump strainers on 3/22 and 3/24
- Housekeeping on 3/22 and 3/24

Week of Sun 3/27 – Thu 3/31

- Water pumped from T-801 and T-1401 on 3/31
- Backwash primary LGAC unit on 3/31
- Iron data collected with field test kit on 3/31
    - Pre-Sep Tank Influent: 22 ppm total
    - Post Bag Filter/LGAC Influent: 17 ppm total
    - LGAC Effluent: 18 ppm total

General TF Treatment System Comments:

- LGAC influent TPH (SGT-HEM) concentrations have stabilized to between mid 20 ppm and mid 70 ppm since performing OWS system upgrades. Prior to this LGAC influent TPH concentrations of up to 150+ ppm were detected.
- LGAC backwashing has become very effective and LGAC run time and performance has improved significantly since improving the OWS system and tweaking the sequestering agent dose and injection point location.

TF System Production Results

- TF System uptime for March was 500.16 Actual Run Hours out of 540.88 Available Hours, or 92.47%

Prepared By: VMW 4/11/16
Checked By: TCK 4/11/16

  - Available Hours = Scheduled Daily Operating Hours (23/7 due to programming bug on HMI) – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
  - TF System shut down on 3/7 for bag filter change out
  - TF System down from 3/15 due to High Level Alarm in T-801 and restarted on 3/17 after Product Load Out
  - TF System down from 3/26 due to High Level Alarm in T-801 and restarted on 3/31 after Product Load Out
- TF System switched from Zones 3 and 4 to Zones 1 and 5 on 3/24
- Approximately 8,671 GAL Product Recovered in March
  - 7,047 GAL Product from Zones 3 and 4
  - 1,624 GAL Product from Zones 1 and 5
- Approximately 22,533 GAL Product Recovered Total since system start-up
  - Average TF Product recovery rate for March was 279.7 GPD, or 399 GPD accounting for downtime.
- 286,310 GAL Effluent discharged in March
  - Average 9,235 GPD, or 13,166 GPD considering downtime
- 643,850 GAL Effluent discharged Total since start-up.
- Oil/Water Ratio = 3.04%
  - TF Zones 3 and 4 = 2.96%
  - TF Zones 1 and 5 = 3.39%

Skimmer System Production Results:

- Skimmer System uptime for March was 451.03 Actual Run Hours out of 452.53 Available Hours, or 99.67%.
  - Available Hours = Scheduled Daily Operating Hours (23/7 due to programming bug on HMI) – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
  - Skimmer System switched to 12 hour daily run time on 3/8
- Approximately 2,097 GAL Product Recovered in March
  - Average Skimmer Product recovery rate for March was 68 GPD
- 14,745 GAL Product Recovered Total since start-up

Total Product Recovery System Results:

- 10,768 GAL Product recovered in March
  - Average Product recovery rate for March was 347 GPD
- 37,278 GAL Product Recovered Total since system start-up
- 14,908 GAL Product shipped off-site for disposal in March (see attached summary table)
- 34,607 GAL Product shipped off-site for disposal since system start-up (see attached summary table)
- 26,928 kWh Energy Consumption Total (as of 4/1/16) since system start-up
- 5,134 kWh Energy Consumption for March
- 0.477 kWh/GAL Average Energy Consumed per GAL of Product Recovered for March

Prepared By: VMW 4/11/16
Checked By: TCK 4/11/16

Recovered Product Offsite Shippment Tracking Summary
Review Avenue
Long Island City, Queens, New York

Date	BOL Number	T-801 [(1)]	T-1401 [(1)]	Total [(1)]	Copy of BOL in hand?	LOAD COUNT	INVOICED?	INVOICE DATE	COMMENTS
12/18/2015	0277706	5,000 gal	-	5,000 gal	Y	1	Y	4/7/2016	
1/11/2016	0277790	-	4,767 gal	4,767 gal	Y	2	Y	4/7/2016	
2/2/2016	0277924	5,032 gal	-	5,032 gal	Y	3	Y	4/7/2016	
2/4/2016	0277942	-	4,900 gal	4,900 gal	Y	4	Y	4/7/2016	
3/2/2016	278269	2,703 gal	2,592 gal	5,295 gal	Y	5	N		Budget increase needed to invoice
3/17/2016	0278392	4,613 gal	-	4,613 gal	Y	6	N		Budget increase needed to invoice
3/31/2016	278518	5,000 gal	-	5,000 gal	Y	7	N		Budget increase needed to invoice
	TOTALS:	**22,348 gal**	**12,259 gal**	**34,607 gal**					

Notes:

1) Volumes reported are as listed on the Bill of Ladings

Review Ave. LNAPL Recovery System Monthly Summary
April 2016

Work completed in April 2016:

Week of Fri 4/1 – Sat 4/2

- See O&M Activities

Week of Sun 4/3 – Sat 4/9

- 2Q 2016 Effluent compliance samples collected on 4/5
- TF-6D recovery event #2 on 4/5
    - 5 GAL Product recovered with skimmer pump
    - Sample collected for PCB analysis: 47.4 ppm Total PCB

Week of Sun 4/10 – Sat 4/16

- Product Load Out from T-801 on 4/13
    - 5,000 GAL Product removed (offsite) according to bill of lading
- TF-6D recovery event #3 on 4/13
    - 4.5 GAL Product recovered with skimmer pump
    - Sample collected for PCB analysis: 34.1 ppm Total PCB

Week of Sun 4/17 – Sat 4/23

- Transit Corp onsite on 4/21 for TF-6 SVE line leak repair

Week of Sun 4/24 – Sat 4/30

- Transit Corp onsite on 4/25 and 4/26 for TF-6 SVE line leak repair
- Oil/Water Separator cleaned by AARCO on 4/26
- New Skimmer system flow meter (with 1/8" air vent) installed on 4/26
- TF-6D recovery event #4 on 4/26
    - 5 GAL Product recovered with skimmer pump
    - Sample collected for PCB analysis: 46.7 ppm Total PCB
- Product Load Out from T-801 on 4/27
    - 4,880 GAL Product removed (offsite) according to bill of lading
- Carbon change out on 4/27
- Monthly well gauging data collected on 4/27

O&M Activities:

Week of Fri 4/1 – Sat 4/2

- Low Biocide Alarm reset and level sensor adjusted (biocide pump/alarm is currently being used for the sequestering agent) on 4/1

Week of Sun 4/3 – Sat 4/9

- System switched to run through Secondary LGAC unit on 4/5
- 2Q 2016 Effluent compliance samples collected on 4/5
- TPH samples collected at LGAC influent on 4/5
- PCB samples collected from LNAPL tanks T-801 and T-1401 on 4/5
- Bag filters changed on 4/5
    - 25 micron bags in primary units; 10 micron bags in secondary units
- Chemical drum level sensors adjusted on 4/7 and permanently secured on 4/8

Week of Sun 4/10 – Sat 4/16

- TPH samples collected at LGAC influent on 4/13
- Bag filters changed on 4/13
    - 25 micron bags in primary units; 10 micron bags in secondary units
- Water removed from T-1401 on 4/13

Prepared By: VMW 5/11/16
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
April 2016

Week of Sun 4/17 – Sat 4/23

- Water removed from T-801 on 4/19, 4/21, 4/22
    - System restarted after water removal
- Water removed from T-1401 on 4/19
- OWS rotary skimmer adjustments made on 4/22
    - Skimmer slot set ¼" above hydraulic head

Week of Sun 4/24 – Sat 4/30

- Water removed from T-801 on 4/25
    - TF System ran manually for 3.85 hours
- LGAC vessels drained on 4/26 in preparation for carbon change out
- OWS cleaned by AARCO on 4/26
- Carbon change out on 4/27
    - System switched to run through Primary LGAC unit
- TF System restarted on 4/29 after conductivity alarm on 4/28 shut the system down

General TF Treatment System Comments:

- Refinement of T-701 skimming system set-up procedure resulted in significantly improved runtime since 4/22/16.

TF System Production Results

- TF System uptime for April was 403.36 Actual Run Hours out of 541.41 Available Hours, or 74.5%
    - Available Hours = Scheduled Daily Operating Hours (23/7 due to programming bug on HMI) – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
    - TF System shut down on 4/5 for bag filter change out
    - TF System down from 4/8 due to High Level Alarm in T-801 and restarted on 4/13 after Product Load Out
    - TF System down intermittently between 4/18 and 4/25 due to High Level Alarm in T-801 and restarted several times after water removal and OWS adjustments
    - Water removed from T-801 and TF System ran manually on 4/25 until T-801 contained minimal water, which was removed completely on 4/26.
    - TF system restarted on 4/27 after Product Load Out
    - TF system shut down late on 4/28 due to non-conductive liquid alarm and restarted on 4/29.
- Approximately 10,683 GAL Product Recovered in April from Zones 1 and 5
- Approximately 33,216 GAL Product Recovered Total since system start-up
    - Average TF Product recovery rate for April was 356.1 GPD, or 609 GPD accounting for downtime.
- 9,880 GAL Product from T-801 disposed of offsite in April
    - 32,228 GAL Product from T-801 disposed of Total since start-up
- 265,430 GAL Effluent discharged in April
    - Average 8,848 GPD, or 15,135 GPD considering downtime
- 909,280 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 4.02%

Skimmer System Production Results:

- Skimmer System uptime for April was 355.27 Actual Run Hours out of 355.27 Available Hours, or 100%.

Prepared By: VMW 5/11/16
Checked By: TCK

  - Available Hours = Scheduled Daily Operating Hours (23/7 due to programming bug on HMI) – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
  - Skimmer System running 12 hours/day
  - Skimmer System shut down for (allowable) maintenance on 4/26 to install flow meter
- Approximately 2,587 GAL Product Recovered in April
  - Average Skimmer Product recovery rate for April was 86.2 GPD
- No Product from T-1401 disposed of offsite in April
- 17,332 GAL Product Recovered Total since start-up

Total Product Recovery System Results:

- 13,720 GAL Product recovered in April
  - Average Product recovery rate for April was 442 GPD
- 50,548 GAL Product Recovered Total since system start-up
- 9,880 GAL Product shipped off-site for disposal in April (see attached summary table)
- 44,487 GAL Product shipped off-site for disposal since system start-up (see attached summary table)
- 31,272 kWh Energy Consumption Total (as of 5/1/16) since system start-up
- 4,344 kWh Energy Consumption for April
- 0.317 kWh/GAL Average Energy Consumed per GAL of Product Recovered for April

Prepared By: VMW 5/11/16
Checked By: TCK

Recovered Product Offsite Shippment Tracking Summary
Review Avenue
Long Island City, Queens, New York

Date	BOL Number	T-801 [(1)]	T-1401 [(1)]	Total [(1)]	Copy of BOL in hand?	LOAD COUNT	INVOICED?	INVOICE DATE	COMMENTS
12/18/2015	0277706	5,000 gal	-	5,000 gal	Y	1	Y	4/7/2016	
1/11/2016	0277790	-	4,767 gal	4,767 gal	Y	2	Y	4/7/2016	
2/2/2016	0277924	5,032 gal	-	5,032 gal	Y	3	Y	4/7/2016	
2/4/2016	0277942	-	4,900 gal	4,900 gal	Y	4	Y	4/7/2016	
3/2/2016	278269	2,703 gal	2,592 gal	5,295 gal	Y	5	Y	5/3/2016	Solo event - not a routine O&M day
3/17/2016	0278392	4,613 gal	-	4,613 gal	Y	6	Y	5/3/2016	
3/31/2016	278518	5,000 gal	-	5,000 gal	Y	7	Y	5/3/2016	
4/13/2016	278574	5,000 gal	-	5,000 gal	Y	8	Y	5/3/2016	
4/27/2016	278823	4,880 gal	-	4,880 gal	Y	9	Y	5/3/2016	
	TOTALS:	**32,228 gal**	**12,259 gal**	**44,487 gal**					

Notes:

1) Volumes reported are as listed on the Bill of Ladings

Review Ave. LNAPL Recovery System Monthly Summary
May 2016

Work completed in May 2016:

Week of Sun 5/1 – Sat 5/7

- Product Load Out from T-1401 on 5/5
  - 5,000 GAL Product removed (offsite) according to bill of lading
- TF-6D recovery event #5 on 5/5
  - 5 GAL Product recovered with skimmer pump
  - Sample collected for PCB analysis: 54.5 ppm Total PCB
- 1/4" air vent installed on new skimmer system Air Scoop (total of 2 vents) on 5/5 to bleed air entrained with skimmer pump discharge prior to entry into skimmer system flow meter.

Week of Sun 5/8 – Sat 5/14

- Transit Corp onsite on 5/9 and 5/10 for TF-6 SVE line leak locating/repair
- Inlet distribution lateral in LGAC-1102 repaired on 5/10 (new piping installed)
- Product Load Out from T-801 on 5/12
  - 5,000 GAL Product removed (offsite) according to bill of lading
- TF-6D recovery event #6 on 5/12
  - 5 GAL Product recovered with skimmer pump
  - Sample collected for PCB analysis: 37.4 ppm Total PCB
- Pressure gauge installed on effluent transfer pump (P-901) discharge line between throttling valve and bag filters on 5/12
- Replacement Vacuum gauge installed on SVE line TF-6 on 5/12
- Redux-330 and Redux-910 chemical delivery on 5/12

Week of Sun 5/15 – Sat 5/21

- Monthly well gauging data collected on 5/17
- Repair minor leak on line between Pre-Separation Tank (T-701) and Oil/Water Separator (OWS-701) on 5/17
- Transit Corp onsite on 5/18 and 5/19 for TF-6 SVE line leak repair
  - Final vacuum testing performed on 5/19
  - All identified leaks have been repaired (confirmed via pressure testing)

Week of Sun 5/22 – Sat 5/28

- Product Load Out from T-801 on 5/26
  - 4,998 GAL Product removed (offsite) according to bill of lading
- System effluent resampled for Mercury analysis for 2Q 2016 Compliance Sampling on 5/26
  - Original samples collected on 4/5 were analyzed using the incorrect EPA Test Methods for Metals
  - SGS Accutest reanalyzed the samples using the correct EPA Test Methods, but Mercury was no longer within hold time
  - Sample results indicated concentrations less than the permitted discharge limits
- System influent and effluent sampled for TPH (SGT-HEM) on 5/26
  - Influent sample had concentration of 87.8 mg/L TPH
- TF-6D recovery event #7 on 5/27
  - 5 GAL Product recovered with skimmer pump
  - Sample collected for PCB analysis: 33.2 ppm Total PCB
- LNAPL Storage Tanks (T-801, T-1401) sampled for PCB analysis
  - T-801: 12.86 ppm Total PCB
  - T-1401: (lab results pending) ppm Total PCB

Week of Sun 5/29 – Tue 5/31

- Product Load Out from T-1401 on 5/31
  - 3,103 GAL Product removed (offsite) according to bill of lading

Prepared By: VMW 6/7/16
Checked By: TCK

- TF-6D recovery event #8 on 5/31
    - 5 GAL Product recovered with skimmer pump
    - Sample collected for PCB analysis: (lab results pending) ppm Total PCB

O&M Activities:

Week of Sun 5/1 – Sat 5/7

- Bag filters changed on 5/5
    - 25 micron bags in primary units; 10 micron bags in secondary units
- Carbon backwashed on 5/5
- Y-strainer on Skimmer system flow meter cleaned on 5/5
- Basket strainer on Product Transfer Pump cleaned on 5/5
- Redux-330 and Redux-910 transferred to drums on 5/5
- Skimmer wells inspected for water content on 5/5
- PCB sample collected from TF-6D on 5/5

Week of Sun 5/8 – Sat 5/14

- Water removed from T-801 on 5/10
- Bag filters changed on 5/12
    - 25 micron bags in primary units; 10 micron bags in secondary units
- New cables installed on 5/12 to secure the double gate doors at the entrance to the Site
- Skimmer system timer increased from 12 hours/day to 23 hours/day on 5/12
- PCB sample collected from TF-6D on 5/12

Week of Sun 5/15 – Sat 5/21

- Redux-330 and Redux-910 transferred to active chemical feed pump drums on 5/18
- System switched to run through Secondary LGAC unit (LGAC-1102) on 5/18

Week of Sun 5/22 – Sat 5/28

- Redux-330 and Redux-910 transferred to drums on 5/26
- Mercury sample collected from system effluent on 5/26
- TPH samples collected from system influent and effluent on 5/26
- PCB samples collected from TF-6D, T-801 and T-1401 on 5/27
- Water removed from T-1401 on 5/27
    - Approximately 1,236 GAL water transferred to system
- Bag filters changed on 5/27
    - 25 micron bags in primary units; 10 micron bags in secondary units
- Y-strainers on TF and Skimmer system flow meters cleaned on 5/27
- Basket strainer on Product Transfer Pump cleaned on 5/27
- OWS Effluent Tank stilling well and float switches cleaned due to black biological growth.

Week of Sun 5/29 – Tue 5/31

- PCB sample collected from TF-6D on 5/31
- Redux-330 and Redux-910 transferred to drums on 5/31
- Carbon backwashed on 5/31

General TF Treatment System Comments:

- A thick red biological layer was noted forming in the OWS recovered product along with growth on surface of liquid in T-701 on 5/19/16. On 5/26/16 black growth had formed in the OWS effluent tank (T-702) stilling well causing the pump ON float switch to hang-up. As such, re-implementation of Biocide Injection warranted to maintain OWS run-time and effectiveness, as well as LGAC runtime & effectiveness, between OWS cleaning events.

Prepared By: VMW 6/7/16
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
May 2016

Prior to the detection of biological growth, the effectiveness of the TF System and Groundwater Treatment System was excellent with a much higher uptime and record LNAPL recovery for the month.

TF System Production Results

- TF System uptime for May was 549.23 Actual Run Hours out of 586.25 Available Hours, or 93.69%
    - Available Hours = Scheduled Daily Operating Hours (23/7 due to programming bug on HMI) – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
    - TF System shut down on 5/5, 5/12, 5/17, 5/27 and 5/31 for maintenance
    - TF System shut down on 5/7 due to High Level Alarm in T-801 and restarted on 5/9 after water removal
    - TF System shut down on 5/10 due to High Level Alarm in T-801 and restarted on 5/12 after Product Load Out
    - TF System shut down on 5/22 due to High Level Alarm in T-801 and restarted on 5/26 after Product Load Out
- Approximately 11,553 GAL Product Recovered in May from Zones 1 and 5
- Approximately 44,769 GAL Product Recovered Total since system start-up
    - Average TF Product recovery rate for May was 372.7 GPD, or 483.8 GPD accounting for downtime.
- 9,998 GAL Product from T-801 disposed of offsite in May
    - 42,226 GAL Product from T-801 disposed of Total since start-up
- 322,740 GAL Effluent discharged in May
    - Average 10,411 GPD, or 13,515 GPD considering downtime
- 1,232,020 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 3.58%

Skimmer System Production Results:

- Skimmer System uptime for May was 584.43 Actual Run Hours out of 584.43 Available Hours, or 100%.
    - Available Hours = Scheduled Daily Operating Hours (23/7 due to programming bug on HMI) – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
    - Skimmer System running 12 hours/day from 5/1 to 5/12, then switched to 23 hours/day on 5/12
    - Skimmer System shut down for maintenance on 5/5 and 5/27
- Approximately 3,866 GAL Product Recovered in May
    - Average Skimmer Product recovery rate for May was 124.7 GPD, or 152.1 accounting for downtime
- Approximately 21,198 GAL Product Recovered Total since start-up
- 8,103 GAL Product from T-1401 disposed of offsite in May
    - 20,362 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 15,419 GAL Product recovered in May
    - Average Product recovery rate for May was 497 GPD
- 65,967 GAL Product Recovered Total since system start-up
- 18,101 GAL Product shipped off-site for disposal in May (see attached summary table)

Prepared By: VMW 6/7/16
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
May 2016

- 62,588 GAL Product shipped off-site for disposal since system start-up (see attached summary table)
- 36,605 kWh Energy Consumption Total (as of 5/1/16) since system start-up
- 5,333 kWh Energy Consumption for May
- 0.346 kWh/GAL Average Energy Consumed per GAL of Product Recovered for May

Prepared By: VMW 6/7/16
Checked By: TCK

Recovered Product Offsite Shippment Tracking Summary
Review Avenue
Long Island City, Queens, New York

Date	BOL Number	T-801 [(1)]	T-1401 [(1)]	Total [(1)]	Copy of BOL in hand?	LOAD COUNT	INVOICED?	INVOICE DATE	COMMENTS
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1/11/2016	0277790	-	4,767 gal	4,767 gal	Y	2	Y	4/7/2016	
2/2/2016	0277924	5,032 gal	-	5,032 gal	Y	3	Y	4/7/2016	
2/4/2016	0277942	-	4,900 gal	4,900 gal	Y	4	Y	4/7/2016	
3/2/2016	278269	2,703 gal	2,592 gal	5,295 gal	Y	5	Y	5/3/2016	Solo event - not a routine O&M day
3/17/2016	0278392	4,613 gal	-	4,613 gal	Y	6	Y	5/3/2016	
3/31/2016	278518	5,000 gal	-	5,000 gal	Y	7	Y	5/3/2016	
4/13/2016	278574	5,000 gal	-	5,000 gal	Y	8	Y	5/3/2016	
4/27/2016	278823	4,880 gal	-	4,880 gal	Y	9	Y	5/3/2016	
5/5/2016	278889	-	5,000 gal	5,000 gal	Y	10	N	6/7/2016	
5/12/2016	278941	5,000 gal		5,000 gal	Y	11	N	6/7/2016	
5/26/2016	279054	4,998 gal		4,998 gal	Y	12	N	6/7/2016	
5/31/2016	099965	-	3,103 gal	3,103 gal	Y	13	N	6/7/2016	
	TOTALS:	**42,226 gal**	**20,362 gal**	**62,588 gal**					

Notes:

1) Volumes reported are as listed on the Bill of Ladings

Review Ave. LNAPL Recovery System Monthly Summary
June 2016

Work completed in June 2016:

Week of Sun 6/5 – Sat 6/11

- TF-6D recovery event #9 on 6/7
  - 4.5 GAL Product recovered with skimmer pump
  - Sample collected for PCB analysis: 46.3 ppm Total PCBs
- Product Load Out from T-801 on 6/7
  - 4,810 GAL Product removed (offsite) according to bill of lading
- LGAC Change-Out on 6/9/16
- OWS Cleaning on 6/10

Week of Sun 6/12 – Sat 6/18

- Install Biocide Injection System on 6/15 & 6/16
- TF Well Product PCB sampling on 6/15 and 6/16
- TF Pump Cleaning on 6/15 and 6/16
- TF-6D recovery event #10 on 6/16
  - 5 GAL Product recovered with skimmer pump
  - Sample collected for PCB analysis: 46.3 ppm Total PCBs

Week of Sun 6/19 – Sat 6/25

- TF-6D recovery event #11 on 6/22
  - 6 GAL Product recovered with skimmer pump
  - Sample collected for PCB analysis: 57.53 ppm Total PCB (preliminary lab data)
- Monitoring Well Gauging Event on 6/24

Week of Sun 6/26 – Thurs 6/30

- VER Testing on Zone TF-2 on 6/29
- TF-6D recovery event #12 on 6/30
  - 6 GAL Product recovered with skimmer pump
  - Sample collected for PCB analysis: Total PCB results Pending

O&M Activities:

Week of Sun 6/5 – Sat 6/11

- Adjust Skimmer system, routine O&M
- TF-6D Skimmer Event #9
- Change bag filters
- Clean Skimmer Flow Meter FIT-1401 strainer
- Transfer water from T-801 and T-801 product load-out

Week of Sun 6/12 – Sat 6/18

- Lead LGAC (1101) put on line on 6/16 (fresh carbon)
- Clean TF pumps from Zones TF-3 and 4
- Bolt down Recovery Well lids
- Start-Up Biocide Injection System on 6/16 – biological growth in OWS diminished rapidly
- TF-6D Skimmer Event #10
- Re-set Non-Conductive Liquid Alarm, adjusted OWS skimmer and re-started TF system zones TF 1, 2 & 5
- Cleaned Effluent Pump (housing internals)

Prepared By: VMW 6/7/16
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
June 2016

Week of Sun 6/19 – Sat 6/25

- TF-6D Skimmer Event #11
- Adjust OWS skimmer and gate valve, installed larger mouth skimmer in gross separation tank T-701. Raised high level alarm float switch in T-701 to accommodate flow rate spike nuisance alarms w/out overflow - tested successfully
- Backwashed LGAC 1101
- Cleaned level control float switches on OWS Effluent Tank
- Recovery Vault lid bolt down work - ongoing
- Transfer chemicals to top off active drums (3 chemicals)

Week of Sun 6/26 – Thurs 6/30

- Implemented operation of VER enhancement on zone TF-2. Turned off Zones TF-1 and 5.
- Installed spool piece in place of FIT-1401. Sent flow meter back to vendor for inspection, repair or replacement under warranty.
- TF-6D recovery event #12 on 6/30

General TF Treatment System Comments:

- Biological growth in OWS came under control rapidly after implementing the Biocide Injection. As this is an oxidant it negatively impacted the sequestering agent and iron was detected dropping out in the LGAC. The biocide and sequestering agent dosing has since been undergoing adjustments to correct LGAC backpressure issues and has improved by the end of June – although further adjustments and improvement ongoing in July.

General Skimmer System Comments:

- Regarding the Skimmer System, the drop in production was not due to recovery well yield, pump problems or a drop in water table, but was pinpointed to a restriction at flow meter FIT-1401. This flow meter was removed and sent back to the vendor for warranty service on 7/1/16. A spool piece was installed on 6/30 and the recovered product flow/production rate was restored to greater than 160 GPD.

VER/TF System Production Results:

- TF System uptime for June was 306.32 Actual Run Hours out of 405.62 Available Hours, or 75.52%
    - Available Hours = Scheduled Daily Operating Hours (23/7 due to programming bug on HMI) – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
    - TF System shut down on 6/9 through 6/16 for maintenance and Biocide System Install
    - TF System shut down on 5/7 due to High Level Alarm in T-801 and restarted on 5/9 after water removal
    - TF System shut down on 5/10 due to High Level Alarm in T-801 and restarted on 5/12 after Product Load Out
    - TF System shut down on 5/22 due to High Level Alarm in T-801 and restarted on 5/26 after Product Load Out
- Approximately 6,970 GAL Product Recovered in June from Zones 1, 2 and 5
- Approximately 51,739 GAL Product Recovered Total since system start-up

Prepared By: VMW 6/7/16
Checked By: TCK

  - Average TF Product recovery rate for June was 232.3 GPD, or 523.3 GPD accounting for downtime.
- 4,810 GAL Product from T-801 disposed of offsite in June
  - 47,036 GAL Product from T-801 disposed of Total since start-up
- 164,310 GAL Effluent discharged in June
  - Average 5,477 GPD, or 12,337.2 GPD considering downtime
- 1,396,330 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 4.24%
- VER Extraction Rate of approx. 350 SCFM initiated from zone TF-2 starting on 6/29. With dilution air, total discharge to atmosphere at approx. 730 SCFM with VGAC Control achieving >90% reduction per NYSDEC Part 212 Process Operation Requirements.

Skimmer System Production Results:

- Skimmer System uptime for May was 688.67 Actual Run Hours out of 688.67 Available Hours, or 100%.
  - Available Hours = Scheduled Daily Operating Hours (23/7 due to programming bug on HMI) – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
  - Skimmer System running 23 hours/day through the month
- Approximately 916 GAL Product Recovered in June
  - Average Skimmer Product recovery rate for June was 30.5 GPD, or 30.5 accounting for downtime
- Approximately 22,114 GAL Product Recovered Total since start-up
- 0 GAL Product from T-1401 disposed of offsite in June
  - 20,362 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 7,886 GAL Product recovered in June
  - Average Product recovery rate for June was 262.9 GPD
- 73,853 GAL Product Recovered Total since system start-up
- 4,810 GAL Product shipped off-site for disposal in June (see attached summary table)
- 67,398 GAL Product shipped off-site for disposal since system start-up (see attached summary table)
- 42,270 kWh Energy Consumption Total (as of 7/1/16) since system start-up
- 5,665 kWh Energy Consumption for June
- 0.718 kWh/GAL Average Energy Consumed per GAL of Product Recovered for May

Prepared By: VMW 6/7/16
Checked By: TCK

Recovered Product Offsite Shippment Tracking Summary
Review Avenue
Long Island City, Queens, New York

Date	BOL Number	T-801 [(1)]	T-1401 [(1)]	Total [(1)]	Copy of BOL in hand?	LOAD COUNT	INVOICED?	INVOICE DATE	COMMENTS
12/18/2015	0277706	5,000 gal	-	5,000 gal	Y	1	Y	4/7/2016	
1/11/2016	0277790	-	4,767 gal	4,767 gal	Y	2	Y	4/7/2016	
2/2/2016	0277924	5,032 gal	-	5,032 gal	Y	3	Y	4/7/2016	
2/4/2016	0277942	-	4,900 gal	4,900 gal	Y	4	Y	4/7/2016	
3/2/2016	278269	2,703 gal	2,592 gal	5,295 gal	Y	5	Y	5/3/2016	Solo event - not a routine O&M day
3/17/2016	0278392	4,613 gal	-	4,613 gal	Y	6	Y	5/3/2016	
3/31/2016	278518	5,000 gal	-	5,000 gal	Y	7	Y	5/3/2016	
4/13/2016	278574	5,000 gal	-	5,000 gal	Y	8	Y	5/3/2016	
4/27/2016	278823	4,880 gal	-	4,880 gal	Y	9	Y	5/3/2016	
5/5/2016	278889	-	5,000 gal	5,000 gal	Y	10	N	6/14/2016	
5/12/2016	278941	5,000 gal		5,000 gal	Y	11	N	6/14/2016	
5/26/2016	279054	4,998 gal		4,998 gal	Y	12	N	6/14/2016	
5/31/2016	099965	-	3,103 gal	3,103 gal	Y	13	N	6/14/2016	
6/7/2016	279111	4,810 gal		4,810 gal	Y	14	N	TBD	
7/1/2016	283085	5,026 gal		5,026 gal	Y	15	N	TBD	
	TOTALS:	**52,062 gal**	**20,362 gal**	**72,424 gal**					

Notes:

1) Volumes reported are as listed on the Bill of Ladings

Review Ave. LNAPL Recovery System Monthly Summary
July 2016

Work completed in July 2016:

Week of Fri 7/1 – Sat 7/9

- Product Load Out from T-801 on 7/1
  - 5,026 GAL Product removed (offsite) according to bill of lading
- TF-6D recovery event #13 on 7/7
  - 5 GAL Product recovered with skimmer pump
  - Sample collected for PCB analysis: 23.92 ppm Total PCBs
- TF-2D sampled on 7/7 for PCB analysis: 41.8 ppm Total PCBs

Week of Sun 7/10 – Sat 7/16

- TF-6D recovery event #14 on 7/11
  - 5 GAL Product recovered with skimmer pump
  - Sample collected for PCB analysis: 27.06 ppm Total PCBs
- T-801 and T-1401 sampled for PCB analysis on 7/11
  - T-801 = 17.83 ppm Total PCBs
  - T-1401 = Non-detect for PCBs
- NYSDEC onsite on 7/14 for site visit to familiarize new oversight person with the site and system.

Week of Sun 7/17 – Sat 7/23

- Product Load Out from T-801 on 7/18
  - 4,900 GAL Product removed (offsite) according to bill of lading
- Monitoring Well Gauging Event on 7/18
- Carbon change out on 7/19
- 3Q 2016 Quarterly Compliance Sampling performed on 7/21
  - Confusion regarding composite sampling methods; system resampled in August

Week of Sun 7/24 – Sun 7/31

- Product Load Out from T-1401 on 7/26
  - 5,000 GAL Product removed (offsite) according to bill of lading

O&M Activities:

Week of Fri 7/1 – Sat 7/9

- T-801 Product Load Out on 7/1, TF System restarted
- OWS skimmer adjustments on 7/5, TF System restarted
- Backwashed carbon (LGAC-1102) on 7/7
- Changed bag filters on 7/7
- Clean strainers on 7/7

Week of Sun 7/10 – Sat 7/16

- Clean secondary containment area on 7/11
- LGAC Influent sampled for TPH on 7/11
- Backwash carbon (LGAC-1101) on 7/11
- Treatment trailer sealed with caulk on 7/11
- Changed bag filters on 7/14
- TF Pump Cleaning on 7/15 (Zones TF-1 and 5)
- Backwash carbon (LGAC-1101) on 7/15

Week of Sun 7/17 – Sat 7/23

- T-801 Product Load Out on 7/18

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- Carbon change out on 7/19, TF System restarted

Week of Sun 7/24 – Sun 7/31

- TF System restarted 7/25
- Changed bag filters on 7/26
- T-1401 Product Load Out on 7/26
- TF System restarted 7/31

General TF Treatment System Comments:

- The biocide and sequestering agent dosing is still undergoing adjustments to correct LGAC backpressure issues and has since resulted in improvement in LGAC performance and Total Iron transport through the carbon of 80 to 82%.

General Skimmer System Comments:

- None.

VER/TF System Production Results:

- TF System uptime for July was 392.31 Actual Run Hours out of 609.93 Available Hours, or 64.32%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
    - TF System restarted on 7/1 after Product Load Out
    - TF System shut down on 7/3 through 7/5 due to Product thickness in OWS
    - TF System shut down on 7/10 due to High Sump Alarm and restarted on 7/11
    - TF System shut down on 7/14 due to carbon plugging and restarted on 7/19 after 7/18 Product Load Out and 7/19 Carbon Change Out
    - TF System shut down on 7/22 due to High Water Level in OWS and restarted on 7/25, shut down again on 7/25 due to air line leak in TF-1, 2, 6 and 7 and restarted on 7/26. TF system on and off until 7/31.
- Approximately 8,100 GAL Product Recovered in July from Zones 1, 2, 5, 6 and 7
- Approximately 59,839 GAL Product Recovered Total since system start-up
    - Average TF Product recovery rate for July was 270 GPD, or 474.9 GPD accounting for system downtime.
- 9,926 GAL Product from T-801 disposed of offsite in July
    - 56,962 GAL Product from T-801 disposed of Total since start-up
- 169,080 GAL Effluent discharged in July
    - Average 5,636 GPD, or 9,912.7 GPD considering downtime
- 1,565,410 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 4.79%

Skimmer System Production Results:

- Skimmer System uptime for May was 738 Actual Run Hours out of 738 Available Hours, or 100%.
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
    - Skimmer System running 23 hours/day from 7/1/16 to 7/6/16 and 24 hours/day from 7/7/16 through the end of the month
- Approximately 5,412 GAL Product Recovered in July
    - Average Skimmer Product recovery rate for July was 168.7 GPD or 180.4 GPD accounting for downtime.

Prepared By: VMW 8/11/16
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
July 2016

- Approximately 27,526 GAL Product Recovered Total since start-up
- 5,000 GAL Product from T-1401 disposed of offsite in July
    - 25,362 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 13,512 GAL Product recovered in July
    - Average Product recovery rate for July was 450.4 GPD.
- 87,365 GAL Product Recovered Total since system start-up
- 14,926 GAL Product shipped off-site for disposal in July (see attached summary table)
- 82,324 GAL Product shipped off-site for disposal since system start-up (see attached summary table)
- 50,024 kWh Energy Consumption Total (as of 8/1/16) since system start-up
- 7,754 kWh Energy Consumption for July
- 0.574 kWh/GAL Average Energy Consumed per GAL of Product Recovered for July

Prepared By: VMW 8/11/16
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
August 2016

Work completed in August 2016:

Week of Mon 8/1 – Sat 8/6

- O&M site visits on 8/3 and 8/4
- Identified location of TF-7 compressed air line leak on 8/3
- Repaired TF-7 compressed air-line leak on 8/4
- Collected 3Q 2016 effluent compliance samples on 8/4 while zones TF -1 & 5 were operating

Week of Sun 8/7 – Sat 8/13

- O&M site visit on 8/9
- Product Load Out from T-801 on 8/9
    - 4,800 GAL Product removed (offsite) according to bill of lading (as compared to 4,795 GAL removed per T-801 stick readings)
- Chemical delivery on 8/9
- Tank testing and NYC Fire Department Tank Inspection on 8/12

Week of Sun 8/14 – Sat 8/20

- O&M site visits on 8/16 and 8/17

Week of Sun 8/21 – Sun 8/27

- O&M site visits on 8/21, 8/23 and 8/25
- Moved Redux 910 chemical injection point to influent on 8/23
- Monitoring Well Gauging Event on 8/23
- Reinstalled skimmer system flow meter on 8/23
- Product Load Out from T-1401 on 7/26
    - 5,000 GAL Product removed (offsite) according to bill of lading

Week of Sun 8/28 – Wed 8/31

- O&M site visits on 8/30 and 8/31
- Haz/Non-Haz drum pickup on 8/30
- Sampled TF Well product and LNAPL Tanks for PCBs on 8/30
    - T-801, T-1401, TF-2D, TF-4C, TF-5C, TF-5D, TF-6B, TF-7E, and TF-7F
- Sampled TF-4D product for PCBs on 8/31
- Product Load Out from T-801 on 8/31
    - 5,052 GAL Product removed (offsite) according Amec T-801 stick readings. Cycle Chem's driver under-reported volume at 4,850 GAL on Bill of Lading (despite Amec field personnel objections) and Cycle Chem Management was notified of problem.

O&M Activities:

Week of Mon 8/1 – Sat 8/6

- Changed bag filters on 8/3
- Switched system to secondary carbon unit on 8/4
- Consolidate PCB Product recovery buckets into drum on 8/4

Week of Sun 8/7 – Sat 8/13

- Drain LGAC-1101 carbon vessel on 8/9
- Restore power to CCTV on 8/9
- Reset internet modem on 8/9
- TF System restarted on 8/12

Week of Sun 8/14 – Sat 8/20

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Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
August 2016

- TF System restarted on 8/16
- Changed bag filters on 8/16
- Cleaned product pump strainers on 8/16
- Transfer chemicals to drums on 8/16
- Repair CCTV and modem issues on 8/17

Week of Sun 8/21 – Sun 8/27

- TF System restarted on 8/21
- TF System restarted on 8/23
- Pumped water from T-801 on 8/23
- Transfer chemicals to drums on 8/23
- TF System restarted on 8/25
- Repaired modem on 8/25

Week of Sun 8/28 – Wed 8/31

- Changed bag filters on 8/30
- Cleaned basket strainer on 8/30
- Transfer chemicals to drums on 8/30
- Changed Biocide pump to old pump on 8/31
- Collected jar samples on 8/31
- Pumped water from T-1401 on 8/31
- TF System restarted 8/31 after Load Out

General TF Treatment System Comments:

- Adjustments to chemical dosing and injection points still being tweaked to address warm weather bacteria growth and associated increased emulsion and separation performance. Problems with new (second) Biocide Pump being addressed with vendor including replacement with another new unit.

General Skimmer System Comments:

- Skimmer system still running at 100% uptime at 100+ GPD

VER/TF System Production Results:

- TF System uptime for August was 217.64 Actual Run Hours out of 428.53 Available Hours, or 50.79%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
    - TF System shut down on 8/4 through 8/9 due to High Product Level in T-801; system remained offline following Product Loadout on 8/9 until 8/12 due to cellular modem issues and inability to monitor system remotely.
    - TF System shut down on 8/12 due to High Product Alarm in OWS and restarted on 8/16 after product transfer pump (gear pump) suction strainer cleanout.
    - TF System shut down on 8/19 due to high Product thickness in OWS and restarted on 8/21. System shut down again on 8/21 due to High Product Alarm in OWS and restarted on 8/23.
    - TF System shut down on 8/24 due to High Product Alarm in OWS and restarted on 8/25.
    - TF System shut down on 8/26 due to High Product Level in T-801 and restarted after Product Load Out on 8/31.
- Approximately 7,164 GAL Product Recovered in August from Zones 1 and 5
- Approximately 67,003 GAL Product Recovered Total since system start-up

Prepared By: VMW 9/20/16
Checked By: TCK

  - Average TF Product recovery rate for August was 238.8 GPD, or 757.1 GPD accounting for system downtime.
- 9,852 GAL Product from T-801 disposed of offsite in August
  - 66,814 GAL Product from T-801 disposed of Total since start-up
- 115,640 GAL Effluent discharged in August
  - Average 3,855 GPD, or 12,221 GPD considering downtime
- 1,681,050 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 6.20%

Skimmer System Production Results:

- Skimmer System uptime for May was 742.5 Actual Run Hours out of 742.5 Available Hours, or 100%.
  - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
- Approximately 3,246 GAL Product Recovered in August
  - Average Skimmer Product recovery rate for August was 104.9 GPD
- Approximately 30,409 GAL Product Recovered Total since start-up
- 0 GAL Product from T-1401 disposed of offsite in August
  - 25,362 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 10,410 GAL Product recovered in August
  - Average Product recovery rate for August was 336 GPD.
- 97,412 GAL Product Recovered Total since system start-up
- 9,852 GAL Product shipped off-site for disposal in August (see attached summary table)
- 92,176 GAL Product shipped off-site for disposal since system start-up (see attached summary table)
- 55,925 kWh Energy Consumption Total (as of 9/1/16) since system start-up
- 5,901 kWh Energy Consumption for August
- 0.567 kWh/GAL Average Energy Consumed per GAL of Product Recovered for August

Prepared By: VMW 9/20/16
Checked By: TCK

Recovered Product Offsite Shippment Tracking Summary
Review Avenue
Long Island City, Queens, New York

Date	BOL Number	T-801 [(1)]	T-1401 [(1)]	Total [(1)]	Copy of BOL in hand?	LOAD COUNT	INVOICED?	INVOICE DATE	COMMENTS
12/18/2015	0277706	5,000 gal	-	5,000 gal	Y	1	Y	4/7/2016	
1/11/2016	0277790	-	4,767 gal	4,767 gal	Y	2	Y	4/7/2016	
2/2/2016	0277924	5,032 gal	-	5,032 gal	Y	3	Y	4/7/2016	
2/4/2016	0277942	-	4,900 gal	4,900 gal	Y	4	Y	4/7/2016	
3/2/2016	278269	2,703 gal	2,592 gal	5,295 gal	Y	5	Y	5/3/2016	Solo event - not a routine O&M day
3/17/2016	0278392	4,613 gal	-	4,613 gal	Y	6	Y	5/3/2016	
3/31/2016	278518	5,000 gal	-	5,000 gal	Y	7	Y	5/3/2016	
4/13/2016	278574	5,000 gal	-	5,000 gal	Y	8	Y	5/3/2016	
4/27/2016	278823	4,880 gal	-	4,880 gal	Y	9	Y	5/3/2016	
5/5/2016	278889	-	5,000 gal	5,000 gal	Y	10	Y	6/14/2016	
5/12/2016	278941	5,000 gal		5,000 gal	Y	11	Y	6/14/2016	
5/26/2016	279054	4,998 gal		4,998 gal	Y	12	Y	6/14/2016	
5/31/2016	099965	-	3,103 gal	3,103 gal	Y	13	Y	6/14/2016	
6/7/2016	279111	4,810 gal		4,810 gal	Y	14	Y	7/18/2016	
7/1/2016	283085	5,026 gal		5,026 gal	Y	15	Y	8/19/2016	
7/18/2016	283124	4,900 gal		4,900 gal	Y	16	Y	8/19/2016	
7/26/2016	283125		5,000 gal	5,000 gal	Y	17	Y	8/19/2016	Solo event - not a routine O&M day
8/9/2016	283446	4,800 gal		4,800 gal	Y	18	Y	9/6/2016	
8/31/2016	283592	5,052 gal		5,052 gal	Y	19	Y	9/6/2016	
9/1/2016	283600		4,280 gal	4,280 gal	Y	20	N	TBD	
9/22/2016	283745	4,950 gal		4,950 gal	Y	21	N	TBD	
	TOTALS:	**71,764 gal**	**29,642 gal**	**101,406 gal**					

Notes:

1) Volumes reported are as listed on the Bill of Ladings

Review Ave. LNAPL Recovery System Monthly Summary
September 2016

Work completed in September 2016:

Week of Thu 9/1 – Sat 9/3

- O&M site visit on 9/1
- Sample TF-3D for PCBs on 9/1
- Product Load Out from T-1401 on 9/1
    - 4,280 GAL Product removed (offsite) according to Bill of Lading

Week of Sun 9/4 – Sat 9/10

- O&M site visit on 9/7 and 9/10
- Install total fluids pump in TF-6D on 9/7

Week of Sun 9/11 – Sat 9/17

- O&M site visits on 9/13, 9/15 and 9/16
- Carbon change out on 9/15
- Skimmer flow meter removed from system on 9/15

Week of Sun 9/18 – Sun 9/24

- O&M site visits on 9/21 and 9/22
- OWS cleaning on 9/21
- Chemical vendor onsite for tank and OWS influent/effluent sampling on 9/21
- Product Load Out from T-801 on 9/22
    - 4,950 GAL Product removed (offsite) according to Bill of Lading

Week of Sun 9/25 – Fri 9/30

- O&M site visits on 9/26 and 9/28
- Started VER line 2 on 9/26
- Phoenix Beverage Group system/site tour on 9/26

O&M Activities:

Week of Thu 9/1 – Sat 9/3

- Reinstall replacement modem on 9/1

Week of Sun 9/4 – Sat 9/10

- Backwash carbon on 9/7
- Changed bag filters on 9/7
- Troubleshoot biocide pump on 9/7

Week of Sun 9/11 – Sat 9/17

- Backwash and drain carbon vessels on 9/13
- Pump water from T-801 and T-1401 on 9/13
- Changed bag filters on 9/13
- Well inspections on 9/13, 9/15
- Transfer chemicals to drums on 9/15
- Pump water from T-801 on 9/16
- Adjust rotary skimmer and valve on 9/16
- Clean product pump strainers on 9/16

Week of Sun 9/18 – Sun 9/24

- Changed bag filters on 9/21

Prepared By: VMW 10/18/16
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
September 2016

Week of Sun 9/25 – Fri 9/30

- Repair water pump and pumped water from T-801 on 9/26
- Cleaned product pump strainers on 9/26
- Changed bag filters on 9/26
- Backwashed carbon on 9/26

General TF Treatment System Comments:

- Run time of product transfer pump diminished (and thus high day tank level alarms triggered) - either excessive suction strainer clogging or gear pump is becoming worn. Ordering new gear pump.
- Emulsion formation still present in T-701.
- Planning for upgrade of first separation tank (701) - adding weir system – to more accurately control head elevation with varying influent flow rates thereby improving oil separation process and decreasing frequency of conductivity alarms or transferring water to T-801.

General Skimmer System Comments:

- Skimmer system still running at 100% uptime at 100+ GPD

VER/TF System Production Results:

- TF System uptime for September was 300.59 Actual Run Hours out of 510.63 Available Hours, or 58.87%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
    - TF System shut down on 9/3 through 9/7 due to High Filter Pressure alarm; system restarted 9/7 after bag filter changeout and carbon backwashing.
    - TF System shut down on 9/8 due to high Product thickness in OWS and restarted on 9/10 after OWS adjustments.
    - TF System shut down on 9/12 due to High Product Level Alarm in T-801 and restarted on 9/15 following Carbon Change out and water removal.
    - TF System shut down on 9/17 due to High Product Alarm in T-801 and restarted on 9/22 following Product Load Out.
    - TF System shut down on 9/26 due to high Product thickness in OWS and restarted on 9/26 after OWS adjustments. System shut down again at night on 9/26 and restarted on 9/28 after adjustments.
- Approximately 8,312 GAL Product Recovered in September from Zones 1, 2, 5 & 6
- Approximately 75,315 GAL Product Recovered Total since system start-up
    - Average TF Product recovery rate for September was 277.1 GPD, or 663.7 GPD accounting for system downtime.
- 4,950 GAL Product from T-801 disposed of offsite in September
    - 71,764 GAL Product from T-801 disposed of Total since start-up
- 115,640 GAL Effluent discharged in September
    - Average 3,855 GPD, or 12,221 GPD considering downtime
- 1,681,050 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 6.20%

Skimmer System Production Results:

- Skimmer System uptime for September was 720 Actual Run Hours out of 720 Available Hours, or 100%.
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)

Prepared By: VMW 10/18/16
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
September 2016

- Approximately 3,338 GAL Product Recovered in September
    - Average Skimmer Product recovery rate for September was 111.3 GPD
- Approximately 33,747 GAL Product Recovered Total since start-up
- 4,280 GAL Product from T-1401 disposed of offsite in September
    - 29,642 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 11,650 GAL Product recovered in September
    - Average Product recovery rate for September was 388 GPD.
- 109,062 GAL Product Recovered Total since system start-up
- 9,230 GAL Product shipped off-site for disposal in September (see attached summary table)
- 101,406 GAL Product shipped off-site for disposal since system start-up (see attached summary table)
- 61,699 kWh Energy Consumption Total (as of 10/1/16) since system start-up
- 5,774 kWh Energy Consumption for September
- 0.528 kWh/GAL Average Energy Consumed per GAL of Product Recovered for September

Prepared By: VMW 10/18/16
Checked By: TCK

Recovered Product Offsite Shippment Tracking Summary
Review Avenue
Long Island City, Queens, New York

Date	BOL Number	T-801 [(1)]	T-1401 [(1)]	Total [(1)]	Copy of BOL in hand?	LOAD COUNT	INVOICED?	INVOICE DATE	COMMENTS
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2/2/2016	0277924	5,032 gal	-	5,032 gal	Y	3	Y	4/7/2016	
2/4/2016	0277942	-	4,900 gal	4,900 gal	Y	4	Y	4/7/2016	
3/2/2016	278269	2,703 gal	2,592 gal	5,295 gal	Y	5	Y	5/3/2016	Solo event - not a routine O&M day
3/17/2016	0278392	4,613 gal	-	4,613 gal	Y	6	Y	5/3/2016	
3/31/2016	278518	5,000 gal	-	5,000 gal	Y	7	Y	5/3/2016	
4/13/2016	278574	5,000 gal	-	5,000 gal	Y	8	Y	5/3/2016	
4/27/2016	278823	4,880 gal	-	4,880 gal	Y	9	Y	5/3/2016	
5/5/2016	278889	-	5,000 gal	5,000 gal	Y	10	Y	6/14/2016	
5/12/2016	278941	5,000 gal		5,000 gal	Y	11	Y	6/14/2016	
5/26/2016	279054	4,998 gal		4,998 gal	Y	12	Y	6/14/2016	
5/31/2016	099965	-	3,103 gal	3,103 gal	Y	13	Y	6/14/2016	
6/7/2016	279111	4,810 gal		4,810 gal	Y	14	Y	7/18/2016	
7/1/2016	283085	5,026 gal		5,026 gal	Y	15	Y	8/19/2016	
7/18/2016	283124	4,900 gal		4,900 gal	Y	16	Y	8/19/2016	
7/26/2016	283125		5,000 gal	5,000 gal	Y	17	Y	8/19/2016	Solo event - not a routine O&M day
8/9/2016	283446	4,800 gal		4,800 gal	Y	18	Y	9/6/2016	
8/31/2016	283592	5,052 gal		5,052 gal	Y	19	Y	9/6/2016	
9/1/2016	283600		4,280 gal	4,280 gal	Y	20	Y	10/7/2016	
9/22/2016	283745	4,950 gal		4,950 gal	Y	21	Y	10/7/2016	
	TOTALS:	**71,764 gal**	**29,642 gal**	**101,406 gal**					

Notes:

1) Volumes reported are as listed on the Bill of Ladings

Review Ave. LNAPL Recovery System Monthly Summary
October 2016

Work completed in October 2016:

Week of Sat 10/1 – Sat 10/8

- O&M site visits on 10/4 and 10/7
- Product Load Out from T-801 on 10/7
    - 4,964 GAL Product removed (offsite) according to Bill of Lading

Week of Sun 10/9 – Sat 10/15

- O&M site visits on 10/10, 10/11 and 10/14
- Install new gear pump P-801 on 10/14

Week of Sun 10/16 – Sat 10/22

- O&M site visits on 10/17 and 10/21
- Product Load Out from T-1401 on 10/17
    - 4,800 GAL Product removed (offsite) according to Bill of Lading
- Sample LGAC Influent for SGT-HEM on 10/21 (Result was 28 ppm)
- Sample Tank T-801 for PCBs on 10/21 (Result was 6.86 ppm)
- Chemical delivery on 10/21
- Setup TF-5D with skimmer pump on 10/21

Week of Sun 10/23 – Mon 10/31

- O&M site visits on 10/24, 10/26, 10/27 and 10/28
- First TF-5D Skimmer event on 10/26
- Monthly well gauging event on 10/27
- Changed pressure gauge on bag filters on 10/27

O&M Activities:

Week of Sat 10/1 – Sat 10/8

- Clean product transfer pump P-801 suction strainer on 10/4
- Vault inspection on 10/4
- Water removal from T-801 and T-1401 on 10/4
- Housekeeping on 10/4
- Transfer chemicals to drums and adjust chemical feed rate on 10/4
- Adjusted T-701 rotary skimmer on 10/4

Week of Sun 10/9 – Sat 10/15

- Adjusted T-701 to 702 gate valve on 10/11
- Cleaned P-801 suction strainer on 10/11
- Changed bag filters on 10/11 and 10/14
- Water removal from T-801 on 10/14
- Backwashed carbon vessel (LGAC-1101) on 10/14
- Replaced Product Transfer Pump on 10/14

Week of Sun 10/16 – Sat 10/22

- Switch to LGAC-1102 on 10/19

Week of Sun 10/23 – Mon 10/31

- Changed bag filters on 10/24 and 10/26
- Backwashed carbon vessel (LGAC-1102) on 10/24 and 10/28
- Transfer chemicals to drums and adjust chemical feed rate on 10/27
- Cleaned effluent sight glass and floats on 10/27

Prepared By: VMW 11/08/16
Checked By: TCK 11/9/16

- Cleaned P-801 suction strainer on 10/28

General TF Treatment System Comments:

- Run time of product transfer pump improved following replacing transfer pump P-801 – but only slightly, strainer still clogging rapidly with gelatinous brown material.
- Bag filters still accumulating grey gelatinous material rapidly.
- Planning for upgrade of first separation tank (701) - adding weir system – to more accurately control head elevation with varying influent flow rates thereby improving oil separation process and decreasing frequency of conductivity alarms or transferring water to T-801.

General Skimmer System Comments:

- Skimmer system still running at 100% uptime at 100+ GPD

VER/TF System Production Results:

- TF System uptime for October was 377.32 Actual Run Hours out of 696.82 Available Hours, or 54.15%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
    - TF System shut down on 10/1 due to High Product Level Alarm in OWS day tank; system restarted 10/4 after cleaning product transfer pump basket strainer OWS adjustments.
    - TF System shut down on 10/5 due to High Product Level Alarm in T-801 and restarted on 10/7 following Product Load Out.
    - TF System shut down on 10/8 due to High Product Level Alarm in OWS; system restarted 10/10 after OWS adjustments.
    - TF System shut down early on 10/11 due to High Product Level Alarm in OWS; system restarted later on 10/11 after OWS adjustments.
    - TF System shut down on 10/13 due to high water levels in T-801 and restarted on 10/14 following water removal.
    - TF System shut down on 10/15 due to High Filter Pressure Alarm on between OWS Effluent Pump and Bag Filters and restarted on 10/17 following LGAC backwash.
    - TF System shut down on 10/17 due to High Water Level Alarm in OWS and restarted on 10/21 after switching active LGAC vessel. TF System shut down again on 10/23, 10/24 and 10/26 due to High Water Level Alarm in OWS and restarted along with making T-701 OWS head adjustments on 10/24, 10/26 and 10/27.
    - TF System shut down late on 10/27 due to High Product Level Alarm in OWS; system restarted 10/28 along with making T-701 OWS head adjustments.
    - TF System shut down on 10/31 due to High Water Level Alarm in OWS and restarted on 11/1 along with making T-701 OWS head adjustments.
- Approximately 6,197 GAL Product Recovered in October from TF Zones 6 and 7.
    - TF System running on Zone 6 from 10/1 – 10/14
        - Approximately 2,160 GAL Product from Zone 6 at an average rate of
    - TF System running on Zone 7 from 10/14 – 10/31
        - Approximately 4,037 GAL Product from Zone 7
- Approximately 80,795 GAL Product Recovered Total since system start-up
    - Average TF Product recovery rate for October was 199.9 GPD, or 394.2 GPD accounting for system downtime.
- 10,464 GAL Product from T-801 disposed of offsite in October
    - 82,228 GAL Product from T-801 disposed of Total since start-up
- 204,070 GAL Effluent discharged in October
    - Average 6,582.9 GPD, or 12,980.2 GPD considering downtime

Prepared By: VMW 11/08/16
Checked By: TCK 11/9/16

Review Ave. LNAPL Recovery System Monthly Summary
October 2016

- 2,028,690 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 3.04%

Skimmer System Production Results:

- Skimmer System uptime for May was 744 Actual Run Hours out of 744 Available Hours, or 100%.
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
- Approximately 3,777 GAL Product Recovered in October
    - Average Skimmer Product recovery rate for October was 121.8 GPD
- Approximately 37,524 GAL Product Recovered Total since start-up
- 4,800 GAL Product from T-1401 disposed of offsite in October
    - 34,442 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 9,974 GAL Product recovered in October
    - Average Product recovery rate for October was 321.7 GPD.
- 118,319 GAL Product Recovered Total since system start-up
- 15,264 GAL Product shipped off-site for disposal in October (see attached summary table)
- 116,670 GAL Product shipped off-site for disposal since system start-up as of the end of October 2016 (see attached summary table)
- 67,461 kWh Energy Consumption Total (as of 11/1/16) since system start-up
- 5,762 kWh Energy Consumption for October
- 0.578 kWh/GAL Average Energy Consumed per GAL of Product Recovered for October.

Prepared By: VMW 11/08/16
Checked By: TCK 11/9/16

Recovered Product Offsite Shippment Tracking Summary
Review Avenue
Long Island City, Queens, New York

Date	BOL Number	T-801 [(1)]	T-1401 [(1)]	Total [(1)]	Copy of BOL in hand?	LOAD COUNT	INVOICED?	INVOICE DATE	COMMENTS
12/18/2015	0277706	5,000 gal	-	5,000 gal	Y	1	Y	4/7/2016	
1/11/2016	0277790	-	4,767 gal	4,767 gal	Y	2	Y	4/7/2016	
2/2/2016	0277924	5,032 gal	-	5,032 gal	Y	3	Y	4/7/2016	
2/4/2016	0277942	-	4,900 gal	4,900 gal	Y	4	Y	4/7/2016	
3/2/2016	278269	2,703 gal	2,592 gal	5,295 gal	Y	5	Y	5/3/2016	Solo event - not a routine O&M day
3/17/2016	0278392	4,613 gal	-	4,613 gal	Y	6	Y	5/3/2016	
3/31/2016	278518	5,000 gal	-	5,000 gal	Y	7	Y	5/3/2016	
4/13/2016	278574	5,000 gal	-	5,000 gal	Y	8	Y	5/3/2016	
4/27/2016	278823	4,880 gal	-	4,880 gal	Y	9	Y	5/3/2016	
5/5/2016	278889	-	5,000 gal	5,000 gal	Y	10	Y	6/14/2016	
5/12/2016	278941	5,000 gal		5,000 gal	Y	11	Y	6/14/2016	
5/26/2016	279054	4,998 gal		4,998 gal	Y	12	Y	6/14/2016	
5/31/2016	099965	-	3,103 gal	3,103 gal	Y	13	Y	6/14/2016	
6/7/2016	279111	4,810 gal		4,810 gal	Y	14	Y	7/18/2016	
7/1/2016	283085	5,026 gal		5,026 gal	Y	15	Y	8/19/2016	
7/18/2016	283124	4,900 gal		4,900 gal	Y	16	Y	8/19/2016	
7/26/2016	283125		5,000 gal	5,000 gal	Y	17	Y	8/19/2016	Solo event - not a routine O&M day
8/9/2016	283446	4,800 gal		4,800 gal	Y	18	Y	9/6/2016	
8/31/2016	283592	5,052 gal		5,052 gal	Y	19	Y	9/6/2016	
9/1/2016	283600		4,280 gal	4,280 gal	Y	20	Y	10/7/2016	
9/22/2016	283745	4,950 gal		4,950 gal	Y	21	Y	10/7/2016	
10/7/2016	180754	4,964 gal		4,964 gal	Y	22	N	TBD	
10/17/2016	180744		4,800 gal	4,800 gal	Y	23	N	TBD	
11/4/2016	104535	5,500 gal		5,500 gal	Y	24	N	TBD	
	TOTALS:	**82,228 gal**	**34,442 gal**	**116,670 gal**					

Notes:

1) Volumes reported are as listed on the Bill of Ladings

Review Avenue Visible Well Inspection Log

Skimmer Well Vault #	Date	By	Cover / Bolt / Hinge	Visible Condition	Visible Damage	Photo	Comments
S-1A	11/2/16	JL	OK	4	None	1236	
S-1B			OK	4	None	1213	asphalt pieces on cover
S-1C			OK	4	None	1212	minor oil staining
S-1D			OK	5	None	1211	
S-1E			OK	5	None	1211	
S-2A			OK	5	None	1208	covered by car / still visible
S-2B			OK	5	None	1207	
S-2C			OK	4	None	1206	
S-2D			OK	4	None	1203	cover rusty
S-2E			OK	4	None	1201	pool of blue liquid nearby
S-3A			OK	4	None	1209	
S-3B			OK	4	None	1235	
S-3C			OK	4	None	1233	some rustiness on cover
S-3D			OK	4	None	1234	some rustiness on cover
S-3E	↓	↓	OK	4	None		could not inspect, covered by ladder >
S-4A							
S-4B							
S-4C							
S-4D							
S-4E							
S-5A	11/2/16	JL	OK	5	None	1123	
S-5B			OK			1122	covered by car / somewhat visible
S-5C			OK	5	None	1121	
S-5D			OK	3	None	1119	oil staining on pad
S-5E			OK	5	None	1117	
S-6A			OK	5	None	1118	
S-6B			OK	4	None	1112	minor oil staining
S-6C			OK	5	None	1112	
S-6D			OK	5	None	1115	
S-6E			OK	5	None	1106	under a bus / visible still
S-7A			OK	4	None	1105	minor oil staining >
S-7B			OK	4	None	1102	spots of oil stain
S-7C	↓	↓	OK	4	None	1102	spot of oil stain
S-7D							Completely obstructed by bu>
S-8A	11/2/16	JL	OK	5	None	1107	
S-8B			OK	4	None	1053	minor oil staining
S-8C			OK	5	None	1051	
S-8D	↓	↓	OK	3	None	1050	major rusting on cover

General Comments / Items of Special Note:

S-4 vault in a section behind locked gate. Need site contact information for access.

Completed by
Jazmin Logan
11/2/16

Review Avenue Exterior Visible Well Inspection Log

Total Fluids Well Vault #	Date	By	Cover / Bolt / Hinge	Visible Condition	Visible Damage	Photo	Comments
TF-1A	11/2/16	JL	OK	3	None	1037	Oil staining on asphalt near concrete pad
TF-1B			OK	5	None	1035	under bus
TF-1C			OK	5	None	1034	
TF-1D			OK	4	None	1033	slightly rusted cover
TF-2A			OK	5	None	1029	
TF-2B			OK	5	None		
TF-2C			OK	5	None	1030	
TF-2D			OK	5	None	1032	
TF-3A			~~OK~~	5	None	1026	partially obstructed by bus
TF-3B			OK	5	None	1025	
TF-3C			OK	5	None	1024	
TF-3D			OK	4	None	1022	Minor ~~corrosion~~ rusting
TF-4A			OK	5	None	1018	
TF-4B			OK	5	None	1019	
TF-4C			OK	5	None	1020	
TF-4D			OK	4	None	1020	minor oil staining
TF-5A			~~OK~~		▲	1016	obstructed by bus
TF-5B			OK	4	None	1015	
TF-5C			OK	4	None	1009	under bus
TF-5D			OK	4	None	1006	rainwater observed, no evidence of oil
TF-6A			OK	5	None	0955	
TF-6B			OK	4	None	0951	oil staining on concrete pad, unidentifiable container and unit surrounding
TF-6C			OK	4	None	0947	
TF-6D			OK	5	None	0924	
TF-7A			OK	4	None	0934	Oil staining on concrete pad / asphalt
TF-7B			OK	3	None	0939	covered by bus but still visible, staining
TF-7C			OK	5	None	0929	minor rusting on concrete pad
TF-7D			OK	5	None	0927	
TF-7E			OK	3	None	0942	very rusted cover
TF-7F	▼	▼	OK		None	0943	ostructed ~~by~~ / could see partially → by abandoned Hvac unit

General Comments / Items of Special Note:

Review Ave. LNAPL Recovery System Monthly Summary
November 2016

Work completed in November 2016:

Week of Tue 11/1 – Sat 11/5

- O&M site visits on 11/1, 11/2 and 11/4
- Product Load Out from T-801 on 11/4
    - 5,500 GAL Product removed (offsite) according to Bill of Lading

Week of Sun 11/6 – Sat 11/12

- O&M site visit on 11/8

Week of Sun 11/13 – Sat 11/19

- O&M site visits on 11/15 and 11/18
- Carbon Change Out on 11/15
- Pulled 6 Skimmer pumps and gauged wells on 11/15
    - S-1D, S-4C, S-5D, S-6B, S-8C
- Monthly well gauging event on 11/16
- Site Inspection on 11/18

Week of Sun 11/20 – Sun 11/26

- O&M site visit on 11/22
- 4 Skimmer wells gauged and Skimmer pumps reinstalled on 11/22
    - S-1D, S-5D, S-6B, S-8C
    - No access to S-4C
- 1 additional Skimmer pump pulled on 11/22
- Skimmer pump installed in TF-5D
    - Approximately 5 GAL TSCA PCB product skimmed

Week of Sun 11/27 – Wed 11/30

- Product Load Out from T-801 on 11/29
    - 5,300 GAL Product removed (offsite) according to Bill of Lading

O&M Activities:

Week of Tue 11/1 – Sat 11/5

- Changed bag filters on 11/1
- Well Vault inspections (vault interior and exteriors) on 11/2
- Switch TF System recovery from Zone 7 to Zones 3 & 4 on 11/4
- T-801 Product Load Out on 11/4
- Changed locks for front and rear gates to new combination (3780) on 11/4

Week of Sun 11/6 – Sat 11/12

- Cleaned product transfer pump P-801 suction strainer on 11/8
- Backwashed carbon vessel (LGAC-1102) on 11/8
- Changed bag filters on 11/8
- Water removal from T-801 on 11/8

Week of Sun 11/13 – Sat 11/19

- Water removal from T-801 on 11/15
- Changed bag filters on 11/15
- Cleaned product transfer pump P-801 suction strainer on 11/15
- Water removal from T-801 on 11/18
- OWS skimmer adjustments on 11/18

Prepared By: VMW 12/06/16
Checked By: TCK 12/08/16

Review Ave. LNAPL Recovery System Monthly Summary
November 2016

- Initiated SVE system on Zones 3 and 4 on 11/18

Week of Sun 11/20 – Sun 11/26

- Changed bag filters on 11/22
- Cleaned pump strainers on 11/22
- Water removal from T-801 on 11/22

Week of Sun 11/27 – Wed 11/30

- Loss of TF flow detected shut down system, T-801 Product Load Out on 11/29. Troubleshooting loss of flow.

General TF Treatment System Comments:

- Flow rate from TF zones 3&4 unsteady and averaging 5 to 6 GPM w.out SVE. Once SVE implemented, flow rate becomes extremely steady and averages 11-1/2 GPM facilitating accurate OW adjustment and extending run-time.
- TF System runtime after implementing SVE on zones 3 and 4 after 1 week due to failed discharge hose connection in vault.
- Bag filters accumulating less grey gelatinous material.
- LGAC filters no longer accumulating grey gelatinous material.
- As an alternate to upgrading OWS due to cost, have investigated utilizing a tube skimmer system in T-701 which can accommodate the liquid level fluctuations. Planning to test-drive this system as soon as possible. If this method works as anticipated, it should remove oil very effectively and maintain a thin layer of oil in tT-701which will eliminate non-conductive liquid alarms and minimize intermittent water accumulation in Day tank associated with fixed elevation pipe skimming system.

General Skimmer System Comments:

- Skimmer system still running at 100% uptime at 100+ GPD

VER/TF System Production Results:

- TF System uptime for November was 289.15 Actual Run Hours out of 649.33 Available Hours, or 44.53%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
    - TF System shut down on 10/31 due to High Water Level Alarm in OWS and restarted on 11/1 along with making T-701 OWS head adjustments.
    - TF System shut down on 11/1 due to High Product Level Alarm in T-801 and restarted on 11/4 following Product Load Out.
    - TF System shut down on 11/9 due to Conductivity Alarm in T-701 and restarted on 11/10
    - TF System shut down on 11/10 due to Conductivity Alarm in T-701 and restarted on 11/11
    - TF System shut down on 11/11 due to Conductivity Alarm in T-701 and restarted on 11/15
    - TF System shut down on 11/15 due to Conductivity Alarm in T-701 and restarted on 11/16
    - TF System shut down on 11/20 due to High Level in T-801 and restarted on 11/22 after Product Load-Out from T-801.
    - TF System shut down on 11/24 due to High Level Alarm in T-701 and restarted on 12/1
- Approximately 5,703 GAL Product Recovered in November from TF Zones 3 and 4.

Prepared By: VMW 12/06/16
Checked By: TCK 12/08/16

  - Average TF Product recovery rate for November was 190.1 GPD, or 473.4 GPD accounting for system downtime.
- Approximately 86,498 GAL Product Recovered Total since system start-up
- 10,800 GAL Product from T-801 disposed of offsite in November
  - 93,028 GAL Product from T-801 disposed of Total since start-up
- Approximately 134,300 GAL Effluent discharged in November
  - Effluent Flow Meter stopped working on 11/14; effluent total calculated based on influent flow (FIT-701 data log) and past flow rates
  - Average 4,477 GPD, or 11,147 GPD considering downtime
- 2,162,990 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 4.25%

Skimmer System Production Results:

- Skimmer System uptime remained at 100% for November.
- Approximately 3,156 GAL Product Recovered in November
  - Average Skimmer Product recovery rate for November was 105.2 GPD
- Approximately 40,680 GAL Product Recovered Total since start-up
- No Product from T-1401 disposed of offsite in November – anticipated load-out on 12/1.
  - 34,442 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 8,859 GAL Product recovered in November
  - Average Product recovery rate for November was 295.3 GPD.
- 127,178 GAL Product Recovered Total since system start-up
- 10,800 GAL Product shipped off-site for disposal in November (see attached summary table)
- 127,470 GAL Product shipped off-site for disposal since system start-up as of the end of November 2016 (see attached summary table)
- 74,448 kWh Energy Consumption Total (as of 12/1/16) since system start-up
- 6,987 kWh Energy Consumption for November
- 0.789 kWh/GAL Average Energy Consumed per GAL of Product Recovered for November.

Prepared By: VMW 12/06/16
Checked By: TCK 12/08/16

Recovered Product Offsite Shippment Tracking Summary
Review Avenue
Long Island City, Queens, New York

Date	BOL Number	T-801 [(1)]	T-1401 [(1)]	Total [(1)]	Copy of BOL in hand?	LOAD COUNT	INVOICED?	INVOICE DATE	COMMENTS
12/18/2015	0277706	5,000 gal	-	5,000 gal	Y	1	Y	4/7/2016	
1/11/2016	0277790	-	4,767 gal	4,767 gal	Y	2	Y	4/7/2016	
2/2/2016	0277924	5,032 gal	-	5,032 gal	Y	3	Y	4/7/2016	
2/4/2016	0277942	-	4,900 gal	4,900 gal	Y	4	Y	4/7/2016	
3/2/2016	278269	2,703 gal	2,592 gal	5,295 gal	Y	5	Y	5/3/2016	Solo event - not a routine O&M day
3/17/2016	0278392	4,613 gal	-	4,613 gal	Y	6	Y	5/3/2016	
3/31/2016	278518	5,000 gal	-	5,000 gal	Y	7	Y	5/3/2016	
4/13/2016	278574	5,000 gal	-	5,000 gal	Y	8	Y	5/3/2016	
4/27/2016	278823	4,880 gal	-	4,880 gal	Y	9	Y	5/3/2016	
5/5/2016	278889	-	5,000 gal	5,000 gal	Y	10	Y	6/14/2016	
5/12/2016	278941	5,000 gal		5,000 gal	Y	11	Y	6/14/2016	
5/26/2016	279054	4,998 gal		4,998 gal	Y	12	Y	6/14/2016	
5/31/2016	099965	-	3,103 gal	3,103 gal	Y	13	Y	6/14/2016	
6/7/2016	279111	4,810 gal		4,810 gal	Y	14	Y	7/18/2016	
7/1/2016	283085	5,026 gal		5,026 gal	Y	15	Y	8/19/2016	
7/18/2016	283124	4,900 gal		4,900 gal	Y	16	Y	8/19/2016	
7/26/2016	283125		5,000 gal	5,000 gal	Y	17	Y	8/19/2016	Solo event - not a routine O&M day
8/9/2016	283446	4,800 gal		4,800 gal	Y	18	Y	9/6/2016	
8/31/2016	283592	5,052 gal		5,052 gal	Y	19	Y	9/6/2016	
9/1/2016	283600		4,280 gal	4,280 gal	Y	20	Y	10/7/2016	
9/22/2016	283745	4,950 gal		4,950 gal	Y	21	Y	10/7/2016	
10/7/2016	180754	4,964 gal		4,964 gal	Y	22	N	11/18/2016	
10/17/2016	180744		4,800 gal	4,800 gal	Y	23	N	11/18/2016	
11/4/2016	104535	5,500 gal		5,500 gal	Y	24	N	TBD	
11/29/2016	104145	5,300 gal		5,300 gal	Y	25	N	TBD	
12/1/2016	258577		4,565 gal	4,565 gal	Y	26	N	TBD	
	TOTALS:	**87,528 gal**	**39,007 gal**	**126,535 gal**					

Notes:

1) Volumes reported are as listed on the Bill of Ladings

Review Ave. LNAPL Recovery System Monthly Summary
December 2016

Work completed in December 2016:

Week of Thu 12/1 – Sat 12/3

- O&M site visit on 12/1
- Product Load Out from T-1401 on 12/1
    - 4,565 GAL Product removed (offsite) according to Bill of Lading

Week of Sun 12/4 – Sat 12/10

- O&M site visits on 12/6, 12/7 and 12/9
- Skimmer pumps S-1A and S-4C reinstalled on 12/6
- Met with tube skimmer sales representative on 12/7 to review application for product removal in T-701.

Week of Sun 12/11 – Sat 12/17

- O&M site visits on 12/13, 12/15 and 12/16
- Emulsification Breaker injection point relocated on 12/13
- Collected 4Q 2016 effluent compliance samples on 12/15
- Chemical delivery on 12/15
- Well vault inspection (TF-1 and TF-5) on 12/16

Week of Sun 12/18 – Sat 12/24

- O&M site visits on 12/18, 12/20, 12/21, 12/22 and 12/23
- Product Load Out from T-801 on 12/20
    - 4,869 GAL Product removed (offsite) according to Bill of Lading
- Groundwater sampling on 12/20 and 12/21
- Tube skimmer installation on 12/22
- Monthly well gauging event on 12/22

Week of Sun 12/25 – Sat 12/31

- O&M site visits on 12/26 and 12/29

O&M Activities:

Week of Thu 12/1 – Sat 12/3

- T-1401 Product Load Out on 12/1

Week of Sun 12/4 – Sat 12/10

- Vault inspections and maintenance on 12/6
- Replace moisture separator plug on 12/7
- Backwashed carbon vessel (LGAC-1101) on 12/7
- Repaired FIT-1201 flow meter/installed new internals.
- Switched to TF recovery zones 1 & 5 from 3 & 4 on 12/1/16.

Week of Sun 12/11 – Sat 12/17

- Water removal from T-801 on 12/13, 12/15 and 12/16
- Cleaned basket and y-strainers on 12/13
- Repaired OWS Product transfer pump on 12/13
- Cleaned T-801 flow meter on 12/13
- Changed bag filters on 12/15
- Transferred chemicals to drums on 12/15
- Backwashed carbon vessel (LGAC-1101) on 12/16
- Repaired TF-1C pump air hose on 12/16

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- Changed injection point for emulsion breaker (R-910) to from upstream of T-701 to downstream of T-701 on 12/13/16.

Week of Sun 12/18 – Sat 12/24

- Collected measurements for tube skimmer piping and electric on 12/18
- Changed bag filters on 12/22
- Cleaned basket strainer on 12/22
- Switched active carbon vessel to LGAC-1102 on 12/22

Week of Sun 12/25 – Sat 12/31

- Rough up tube skimmer tube on 12/26
- Replace air scavenging pipe between containers on 12/26
- Water removal from T-801 and T-1401 on 12/29
- Changed bag filters on 12/29
- Cleaned basket and y-strainers on 12/29
- Transferred chemicals to drums on 12/29

General TF Treatment System Comments:

- Tube skimmer system installed in T-701 on 12/22 as a test/trial to accomplish oil removal despite variable influent flow rate and fluctuating liquid levels. Since installing the tube skimmer, TF system uptime has approached 100% for flow rates up to 10 to 12 gpm. This is attributed to the fact that non-conductive fluid alarms have been dramatically reduced and water content in T-801 and the need to transfer water out of the tank has been minimal. The need to partially employ the fixed elevation pipe skimmer, however, is still required, as the tube skimmer appears to remove the dark product much more rapidly than the lighter colored product. As such, AMEC FW will experiment with a higher tube speed (requiring installation of a higher rpm motor).
- Since moving emulsion breaker (P-910) injection point to downstream of T-701, the basket strainer fouling diminished significantly (much less ferric iron clumps) which has eliminated this factor from a primary uptime constraint.
- Excessive septic odor was detected in treatment enclosure on 12/26. This odor also was present outside the enclosure in the general area of RAD II and RAD I in general – as such, was believed to be a wide-spread odor in the general area of the Review Ave. site and beyond at that time.

General Skimmer System Comments:

- Skimmer system still running at 100% uptime at 100+ GPD
- Skimmer system timer switched from 24hrs/day to 18hrs/day (6AM – 12AM) operation on 12/14 with the intention of maintaining daily GPD production rate, but minimizing the amount of air introduced into the conveyance piping as well as minimizing equipment wear and tear and energy consumption. Production does appear to have decreased commensurately but both production and impact to air content in discharge lines still being evaluated.

VER/TF System Production Results:

- TF System uptime for December was 516.04 Actual Run Hours out of 717.68 Available Hours, or 71.9%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
    - TF System shut down on 11/24 due to High Level Alarm in T-701 and restarted on 12/1
    - TF System shut down on 12/2 due to Conductivity Alarm in T-701 and restarted on 12/6 following OWS head adjustments

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  - TF System shut down on 12/6 due to Conductivity Alarm in T-701 and restarted on 12/7 following OWS head adjustments and carbon backwash
  - TF System shut down on 12/9 due to Conductivity Alarm in T-701 and restarted 2 hours later on 12/9 following OWS head adjustments
  - TF System shut down on 12/11 due to High Product Level Alarm in OWS and restarted on 12/13 following Product transfer pump repair and strainer/flow meter cleanout
  - TF System shut down on 12/14 due to High Product Level Alarm in T-801 and restarted on 12/15 following water removal
  - TF System shut down on 12/17 due to Conductivity Alarm in T-701 and restarted on 12/18 following OWS head adjustments
  - TF System shut down on 12/23 due to Conductivity Alarm in T-701 and restarted later on 12/23 following OWS head adjustments (gate valve and tube skimmer)
    - 50 inches of product removed from T-701
- Approximately 9,556 GAL Product Recovered in December from TF Zones 1 and 5.
  - Average TF Product recovery rate for December was 308 GPD, or 444 GPD accounting for system downtime.
- Approximately 96,054 GAL Product Recovered Total since system start-up
- 4,869 GAL Product from T-801 disposed of offsite in December
  - 97,897 GAL Product from T-801 disposed of Total since start-up
- Approximately 212,470 GAL Effluent discharged in December
  - Effluent Flow Meter stopped working on 11/14, repaired on 12/6; effluent total from 12/1 – 12/6 calculated based on influent flow (FIT-701 data log) and past flow rates
  - **Following repair of flow meter on 12/6/16, actual effluent flow total is now +65,580 GAL more than recorded on FIT-1201 effluent flow totalizer and data logs.**
  - Average 6,854 GPD or 9,882 GPD considering downtime
- 2,375,460 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 4.50%

Skimmer System Production Results:

- Skimmer System uptime remained at 100% (642 hours runtime) for December
  - Skimmer system running 18 hrs/day as of 12/14
- Approximately 1,987 GAL Product Recovered in December
  - Average Skimmer Product recovery rate for December was 64.1 GPD, or 74.3 GPD accounting for actual runtime
- Approximately 42,667 GAL Product Recovered Total since start-up
- 4,565 GAL Product from T-1401 disposed of offsite in December
  - 39,007 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 11,543 GAL Product recovered in December
  - Average Product recovery rate for December was 372 GPD.
- 138,721 GAL Product Recovered Total since system start-up
- 9,434 GAL Product shipped off-site for disposal in December (see attached summary table)
- 136,904 GAL Product shipped off-site for disposal since system start-up as of the end of December 2016 (see attached summary table)
- 84,709 kWh Energy Consumption Total (as of 1/1/17) since system start-up
- 10,261 kWh Energy Consumption for December
- 0.889 kWh/GAL Average Energy Consumed per GAL of Product Recovered for December

Prepared By: VMW 1/11/17
Checked By: TCK

Recovered Product Offsite Shippment Tracking Summary
Review Avenue
Long Island City, Queens, New York

Date	BOL Number	T-801 [(1)]	T-1401 [(1)]	Total [(1)]	Copy of BOL in hand?	LOAD COUNT	INVOICED?	INVOICE DATE	COMMENTS
12/18/2015	0277706	5,000 gal	-	5,000 gal	Y	1	Y	4/7/2016	
1/11/2016	0277790	-	4,767 gal	4,767 gal	Y	2	Y	4/7/2016	
2/2/2016	0277924	5,032 gal	-	5,032 gal	Y	3	Y	4/7/2016	
2/4/2016	0277942	-	4,900 gal	4,900 gal	Y	4	Y	4/7/2016	
3/2/2016	278269	2,703 gal	2,592 gal	5,295 gal	Y	5	Y	5/3/2016	Solo event - not a routine O&M day
3/17/2016	0278392	4,613 gal	-	4,613 gal	Y	6	Y	5/3/2016	
3/31/2016	278518	5,000 gal	-	5,000 gal	Y	7	Y	5/3/2016	
4/13/2016	278574	5,000 gal	-	5,000 gal	Y	8	Y	5/3/2016	
4/27/2016	278823	4,880 gal	-	4,880 gal	Y	9	Y	5/3/2016	
5/5/2016	278889	-	5,000 gal	5,000 gal	Y	10	Y	6/14/2016	
5/12/2016	278941	5,000 gal		5,000 gal	Y	11	Y	6/14/2016	
5/26/2016	279054	4,998 gal		4,998 gal	Y	12	Y	6/14/2016	
5/31/2016	099965	-	3,103 gal	3,103 gal	Y	13	Y	6/14/2016	
6/7/2016	279111	4,810 gal		4,810 gal	Y	14	Y	7/18/2016	
7/1/2016	283085	5,026 gal		5,026 gal	Y	15	Y	8/19/2016	
7/18/2016	283124	4,900 gal		4,900 gal	Y	16	Y	8/19/2016	
7/26/2016	283125		5,000 gal	5,000 gal	Y	17	Y	8/19/2016	Solo event - not a routine O&M day
8/9/2016	283446	4,800 gal		4,800 gal	Y	18	Y	9/6/2016	
8/31/2016	283592	5,052 gal		5,052 gal	Y	19	Y	9/6/2016	
9/1/2016	283600		4,280 gal	4,280 gal	Y	20	Y	10/7/2016	
9/22/2016	283745	4,950 gal		4,950 gal	Y	21	Y	10/7/2016	
10/7/2016	180754	4,964 gal		4,964 gal	Y	22	Y	11/18/2016	
10/17/2016	180744		4,800 gal	4,800 gal	Y	23	Y	11/18/2016	
11/4/2016	104535	5,500 gal		5,500 gal	Y	24	Y	12/22/2016	
11/29/2016	104145	5,300 gal		5,300 gal	Y	25	Y	12/22/2016	
12/1/2016	258577		4,565 gal	4,565 gal	Y	26	N	TBD	
12/20/2016	258731	4,869 gal		4,869 gal	Y	27	N	TBD	
1/6/2017	258823	4,900 gal		4,900 gal	Y	28	N	TBD	Note - Tanker pump shaft broke, so full lo
	TOTALS:	**97,297 gal**	**39,007 gal**	**136,304 gal**					

Notes:

1) Volumes reported are as listed on the Bill of Ladings

Review Ave. LNAPL Recovery System Monthly Summary
January 2017

Work completed in January 2017:

Week of Sun 1/1 – Sat 1/7

- O&M site visits on 1/4, 1/5 and 1/6
- Product Load-out from T-801 on 1/4 and 1/6
    - Tanker pump shaft broke on 1/4 – tanker returned on 1/6 to complete Load-out
    - Total of 4,900 GAL Product removed (offsite) according to Bill of Lading
- Meeting with tube skimmer sales representative scheduled for 1/5
    - Sales representative did not show up
    - Meeting rescheduled for 1/9
- Collected T-801 and T-1401 PCB samples on 1/6
- TF-5D recovery event on 1/6
    - 3 GAL Product recovered with skimmer pump
    - Sample collected for PCB analysis: 56.56 ppm Total PCB

Week of Sun 1/8 – Sat 1/14

- O&M site visits on 1/9 and 1/10
- Meeting with tube skimmer sales representative on 1/9
- Motor installed on tube skimmer on 1/10
- TF-5D recovery event on 1/10
    - 2 GAL Product recovered with skimmer pump
    - No samples collected

Week of Sun 1/15 – Sat 1/21

- O&M site visits on 1/16, 1/17 and 1/19
- Product Load-out from T-801 on 1/16
    - 4,875 GAL Product removed (offsite) according to Bill of Lading
- Chemical delivery on 1/17
- 20-foot storage container delivered on 1/19

Week of Sun 1/22 – Tue 1/31

- O&M site visits on 1/23, 1/25, 1/26, 1/27 and 1/28
- Portion of fence along Review Avenue damaged by car accident
    - Install and secure temporary fence on 1/23
- 20 CY Dumpster delivery on 1/23
- Product Load-out from T-801 on 1/25
    - 4,850 GAL Product removed (offsite) according to Bill of Lading
- Oil/Water Separator Clean-out on 1/25
- Carbon Change-out on 1/26

O&M Activities:

Week of Sun 1/1 – Sat 1/7

- Partial T-801 Product Load-out on 1/4
- Changed bag filters on 1/4
- Cleaned basket strainer on 1/4
- Backwashed carbon on 1/4
- Transferred chemicals to drums on 1/4
- Inspect SVE wells on 1/4 and open lines 1 and 5
- Updated Well Vault Photo Chart on 1/5
- Completed T-801 Product Load-out on 1/6
- Installed air bleeder on S-4A skimmer line on 1/6

Prepared By: VMW 2/13/17
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
January 2017

Week of Sun 1/8 – Sat 1/14

- Changed bag filters on 1/10
- Cleaned basket strainer on 1/10
- Backwashed carbon on 1/10
- Transferred chemicals to drums on 1/10

Week of Sun 1/15 – Sat 1/21

- Product Load-out on 1/16
- Changed bag filters on 1/17
- Cleaned basket and y-strainers on 1/17
- Backwashed carbon on 1/17
- Transferred chemicals to drums on 1/17
- TF line adjustments on 1/17
- Housekeeping on 1/17
- Repaired pump TF-6A on 1/19

Week of Sun 1/22 – Tue 1/31

- Changed bag filters on 1/23, 1/25 and 1/28
- Cleaned OWS tanks, floor and exterior equipment on 1/25
- Cleaned Flow Meter FIT-701 on 1/25
- Backwashed carbon (LGAC-1102) on 1/23 and 1/27
- Switched active carbon vessel to LGAC-1101 on 1/23
- Transferred chemicals to drums on 1/23
- Installed temporary fence on 1/23
- Re-piped OWS Tank interconnect line on 1/25 w/ 3" Sch 80 PV and new chemical injectors on 1/27
- Carbon Change-out on 1/26
- Cleaned effluent pump strainer on 1/28

General TF Treatment System Comments:

- TF System Uptime has improved to 94% for January with flow rates as high as 15+ gpm. Increased uptime largely attributable to the Tube Skimmer upgrade and higher flow rates without non-conductive liquid alarms attributable to running the Tube Skimmer at higher speed. Water removal requirements from T-801 have been almost non-existent.

General Skimmer System Comments:

- Skimmer system still running at 100% uptime at just under 90 GPD and remains at 18 hr/day operation in an attempt to minimize entrained air and possible air locking of remote skimmer zones.

VER/TF System Production Results:

- TF System uptime for January was 562.14 Actual Run Hours out of 598.02 Available Hours, or 94.0%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
    - TF System shut down on 1/3 due to High Product Level Alarm in T-801 and restarted on 1/4 following Product Load-out
    - TF System shut down on 1/14 due to High Product Level Alarm in T-801 and restarted on 1/16 following Product Load-out
    - TF System shut down on 1/22 due to High Water Level Alarm in OWS and restarted on 1/23 after switching active LGAC vessel to LGAC-1101

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Checked By: TCK

  - TF System shut down on 1/25 for OWS Clean-out. System remained off on 1/26 for Carbon Change-out and restarted on 1/27 after refilling the tanks and allowing carbon to saturate.
  - TF System shut down on 1/28 due to High Water Level Alarm in OWS and restarted on 1/28 after cleaning effluent pump strainer
- Approximately 12,585 GAL Product Recovered in January from TF Zones 1, 2, 5 and 6.
  - Average TF Product recovery rate for January was 406 GPD, or 537 GPD accounting for system downtime.
- Approximately 108,639 GAL Product Recovered Total since system start-up
- 14,625 GAL Product from T-801 disposed of offsite in January
  - 112,522 GAL Product from T-801 disposed of Total since start-up
- Approximately 324,805 GAL Effluent discharged in January
  - Average 10,478 GPD or 13,867 GPD considering downtime
- 2,700,265 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 3.87%

Skimmer System Production Results:

- Skimmer System uptime remained at 100% (558 hours runtime) for January
  - Skimmer system running @ 18 hrs/day schedule
- Approximately 2,059 GAL Product Recovered in January
  - Average Skimmer Product recovery rate for January was 66.4 GPD, or 88.6 GPD accounting for actual runtime
- Approximately 44,726 GAL Product Recovered Total since start-up
- 0 GAL Product from T-1401 disposed of offsite in January
  - 39,007 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 14,644 GAL Product recovered in January
  - Average Product recovery rate for January was 472 GPD.
- 146,029 GAL Product Recovered Total since system start-up
- 14,625 GAL Product shipped off-site for disposal in January (see attached summary table)
- 151,529 GAL Product shipped off-site for disposal since system start-up as of the end of January 2016 (see attached summary table)
- 92,383 kWh Energy Consumption Total (as of 2/1/17) since system start-up
- 7,674 kWh Energy Consumption for January
- 0.524 kWh/GAL Average Energy Consumed per GAL of Product Recovered for January

Prepared By: VMW 2/13/17
Checked By: TCK

Recovered Product Offsite Shippment Tracking Summary
Review Avenue
Long Island City, Queens, New York

Date	BOL Number	T-801 [(1)]	T-1401 [(1)]	Total [(1)]	Copy of BOL in hand?	LOAD COUNT	INVOICED?	INVOICE DATE	COMMENTS
12/18/2015	0277706	5,000 gal	-	5,000 gal	Y	1	Y	4/7/2016	
1/11/2016	0277790	-	4,767 gal	4,767 gal	Y	2	Y	4/7/2016	
2/2/2016	0277924	5,032 gal	-	5,032 gal	Y	3	Y	4/7/2016	
2/4/2016	0277942	-	4,900 gal	4,900 gal	Y	4	Y	4/7/2016	
3/2/2016	278269	2,703 gal	2,592 gal	5,295 gal	Y	5	Y	5/3/2016	Solo event - not a routine O&M day
3/17/2016	0278392	4,613 gal	-	4,613 gal	Y	6	Y	5/3/2016	
3/31/2016	278518	5,000 gal	-	5,000 gal	Y	7	Y	5/3/2016	
4/13/2016	278574	5,000 gal	-	5,000 gal	Y	8	Y	5/3/2016	
4/27/2016	278823	4,880 gal	-	4,880 gal	Y	9	Y	5/3/2016	
5/5/2016	278889	-	5,000 gal	5,000 gal	Y	10	Y	6/14/2016	
5/12/2016	278941	5,000 gal		5,000 gal	Y	11	Y	6/14/2016	
5/26/2016	279054	4,998 gal		4,998 gal	Y	12	Y	6/14/2016	
5/31/2016	099965	-	3,103 gal	3,103 gal	Y	13	Y	6/14/2016	
6/7/2016	279111	4,810 gal		4,810 gal	Y	14	Y	7/18/2016	
7/1/2016	283085	5,026 gal		5,026 gal	Y	15	Y	8/19/2016	
7/18/2016	283124	4,900 gal		4,900 gal	Y	16	Y	8/19/2016	
7/26/2016	283125		5,000 gal	5,000 gal	Y	17	Y	8/19/2016	Solo event - not a routine O&M day
8/9/2016	283446	4,800 gal		4,800 gal	Y	18	Y	9/6/2016	
8/31/2016	283592	5,052 gal		5,052 gal	Y	19	Y	9/6/2016	
9/1/2016	283600		4,280 gal	4,280 gal	Y	20	Y	10/7/2016	
9/22/2016	283745	4,950 gal		4,950 gal	Y	21	Y	10/7/2016	
10/7/2016	180754	4,964 gal		4,964 gal	Y	22	Y	11/18/2016	
10/17/2016	180744		4,800 gal	4,800 gal	Y	23	Y	11/18/2016	
11/4/2016	104535	5,500 gal		5,500 gal	Y	24	Y	12/22/2016	
11/29/2016	104145	5,300 gal		5,300 gal	Y	25	Y	12/22/2016	
12/1/2016	258577		4,565 gal	4,565 gal	Y	26	N	1/20/2017	
12/20/2016	258731	4,869 gal		4,869 gal	Y	27	N	1/20/2017	
1/6/2017	258823	4,900 gal		4,900 gal	Y	28	N	TBD	Note - Tanker pump shaft broke, so full lo
1/16/2017	258893	4,875 gal		4,875 gal	Y	29	N	TBD	
1/25/2017	259005	4,850 gal		4,850 gal	Y	30	N	TBD	
	TOTALS:	**107,022 gal**	**39,007 gal**	**146,029 gal**					

Notes:

1) Volumes reported are as listed on the Bill of Ladings

Review Ave. LNAPL Recovery System Monthly Summary
February 2017

Work completed in February 2017:

Week of Wed 2/1 – Sat 2/4

- O&M site visit on 2/1
- Air Compressor serviced on 2/1 by D&D Electric Motors and Compressors
    - Changed air filter, oil filter, separator filter, cabin filters, cooler filters, line filter elements, pressure transducer
    - Cleaned out dryer, checked controls and tested system

Week of Sun 2/5 – Sat 2/11

- O&M site visits on 2/7 and 2/10
- Product Load-out from T-801 on 2/7
    - 4,900 GAL Product removed (offsite) according to Bill of Lading
- TF-5D recovery event on 2/7
    - 10 GAL Product recovered with skimmer pump
    - Sample collected for PCB analysis: 95.8 ppm Total PCB

Week of Sun 2/12 – Sat 2/18

- O&M site visits on 2/14, 2/16 and 2/17
- Product Load-out from T-1401 on 2/14
    - 4,900 GAL Product removed (offsite) according to Bill of Lading
- TF-5D recovery event on 2/14
    - 5 GAL Product recovered with skimmer pump
    - No samples collected
- Repaired damaged section of fence on 2/14
- Product Load-out from T-801 on 2/16
    - 4,860 GAL Product removed (offsite) according to Bill of Lading
- Chemical delivery on 2/17
- TF-5D recovery event on 2/17
    - 3.5 GAL Product recovered with skimmer pump
    - No samples collected

Week of Sun 2/19 – Tue 2/28

- O&M site visit on 2/22
- TF-5D recovery event on 2/22
    - 3.5 GAL Product recovered with skimmer pump
    - No samples collected

O&M Activities:

Week of Wed 2/1 – Sat 2/4

- Changed bag filters on 2/1
- Cleaned y-strainer and basket strainer on 2/1
- Air compressor maintenance on 2/1
- Transferred chemicals to drums on 2/1
- Inspected effluent flow meter on 2/1
- Housekeeping on 2/1

Week of Sun 2/5 – Sat 2/11

- Product Load Out on 2/7
- Changed bag filters on 2/7
- Cleaned basket strainer on 2/7

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- Backwashed carbon on 2/7
- Transferred chemicals to drums on 2/7
- Replaced heater in control room on 2/7
- Inspected TF-5 well vaults on 2/7
- System restart on 2/10
- Cleaned OWS floats and sight glass on 2/10
- Snow removal and housekeeping on 2/10

Week of Sun 2/12 – Sat 2/18

- Product Load-out on 2/14 and 2/16
- Changed bag filters on 2/14
- Cleaned basket and y-strainers on 2/14
- Backwashed carbon on 2/14
- Switched active TF recovery zones to TF-3 and TF-4 on 2/14
- Inspected TF-3 and TF-4 well vaults on 2/14
    - TF-3B left offline due to cracked fitting at cap
    - TF-3D and TF-4D left offline due to high PCB concentrations
- Fence repair on 2/14
- System restart on 2/16 and 2/17
- Transferred chemicals to drums on 2/17
- Cleaned basket strainer on 2/17
- Cleaned OWS floats on 2/17
- Housekeeping on 2/17

Week of Sun 2/19 – Tue 2/28

- Changed bag filters on 2/22
- Cleaned basket strainer on 2/22
- Backwashed carbon (LGAC-1101) on 2/22
- Switched active carbon vessel to LGAC-1102 on 2/22
- Reduced stroke on chemical feed pumps for both the R-330 and R-910 from 50% to 40% on 2/22/17.
- TF well vault inspection on 2/22; inspected:
    - TF-1A
    - TF-2A
    - TF-3A/B/C/D
    - TF-4A/B/C/D
    - TF-5A/C/D
    - Hose vault
    - Crossing vaults

General TF Treatment System Comments:

- TF System Uptime has remained over 90% in February (approx. 93%) with flow rates as high as 17 gpm, although tube skimmer product removal appears to be exceeded at this flow rate with 4% oil/water ratios. Increased uptime largely attributable to the Tube Skimmer upgrade and the high-speed motor. A couple of system shutdowns were due to fouled level control floats which require more attention when cleaning the OWS. Water removal requirements from T-801 remain non-existent. Chemical injections rates for the Emulsion Breaker and Sequestering Agent reduced on 2/22/17 from 50% stroke to 40% stroke with so far no noticeable impact to system treatment performance. When switching to a new zone, very initial high oil/water ratios (15% to 20%) can exceed the tube skimmer oil removal capacity,

as such, lower flow rates must be run for several hours until the oil/water ratio diminish to steady state conditions (typically 4%).

General Skimmer System Comments:

- Skimmer system still running at 100% uptime at just under 80 GPD and remains at 18 hr/day operation in an attempt to minimize entrained air and possible air locking of remote skimmer zones.

VER/TF System Production Results:

- TF System uptime for February was 584.67 Actual Run Hours out of 629.33 Available Hours, or 92.9%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.)
    - TF System shut down on 2/5 due to High Product Level Alarm in T-801 and restarted on 2/7 following Product Load-out
    - TF System shut down on 2/9 due to High Water Level Alarm in OWS and restarted after cleaning OWS floats
    - TF System shut down on 2/15 due to conductivity alarm in T-701 and restarted on 2/16 after OWS adjustments. Product recovery rate exceeded capacity of the tube skimmer (17 gpm TF @ approx. 4% Oil/Water ratio equated to 900 to 1,000 GPD oil influent rate). As such, flow rate reduced to accommodate.
    - TF System shut down early on 2/17 due to conductivity alarm in T-701 caused by stuck floats in the OWS; system restarted later on 2/17 after cleaning OWS floats
    - TF System shut down late on 2/28 due to High Product Level Alarm in T-801and restarted on 3/1 following Product Load-out
- Approximately 12,943 GAL Product Recovered in February from TF Zones 2 and 6.
    - Average TF Product recovery rate for February was 462 GPD, or 531 GPD accounting for system downtime.
- Approximately 121,582 GAL Product Recovered Total since system start-up
- 9,760 GAL Product from T-801 disposed of offsite in February
    - 116,782 GAL Product from T-801 disposed of Total since start-up
- Approximately 260,935 GAL Effluent discharged in February
    - Average 9,319 GPD or 10,711 GPD considering downtime
- 2,961,200 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 4.96%

Skimmer System Production Results:

- Skimmer System uptime remained at 100% (504 hours runtime) for February
    - Skimmer system running @ 18 hrs/day schedule
- Approximately 2,230 GAL Product Recovered in February
    - Average Skimmer Product recovery rate for February was 79.6 GPD, or 106 GPD accounting for actual runtime
- Approximately 46,956 GAL Product Recovered Total since start-up
- 4,900 GAL Product from T-1401 disposed of offsite in February
    - 43,907 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 15,173 GAL Product recovered in February

Prepared By: VMW 3/2/17
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
February 2017

- Average Product recovery rate for February was 542 GPD.

- 168,538 GAL Product Recovered Total since system start-up
- 14,660 GAL Product shipped off-site for disposal in February (see attached summary table)
- 160,689 GAL Product shipped off-site for disposal since system start-up as of the end of February 2017 (see attached summary table)
- 97,775 kWh Energy Consumption Total (as of 3/1/17) since system start-up
- 5,392 kWh Energy Consumption for February
- 0.355 kWh/GAL Average Energy Consumed per GAL of Product Recovered for February

Prepared By: VMW 3/2/17
Checked By: TCK

Recovered Product Offsite Shippment Tracking Summary
Review Avenue
Long Island City, Queens, New York

Date	BOL Number	T-801 [(1)]	T-1401 [(1)]	Total [(1)]	Copy of BOL in hand?	LOAD COUNT	INVOICED?	INVOICE DATE	COMMENTS
12/18/2015	0277706	5,000 gal	-	5,000 gal	Y	1	Y	4/7/2016	
1/11/2016	0277790	-	4,767 gal	4,767 gal	Y	2	Y	4/7/2016	
2/2/2016	0277924	5,032 gal	-	5,032 gal	Y	3	Y	4/7/2016	
2/4/2016	0277942	-	4,900 gal	4,900 gal	Y	4	Y	4/7/2016	
3/2/2016	278269	2,703 gal	2,592 gal	5,295 gal	Y	5	Y	5/3/2016	Solo event - not a routine O&M day
3/17/2016	0278392	4,613 gal	-	4,613 gal	Y	6	Y	5/3/2016	
3/31/2016	278518	5,000 gal	-	5,000 gal	Y	7	Y	5/3/2016	
4/13/2016	278574	5,000 gal	-	5,000 gal	Y	8	Y	5/3/2016	
4/27/2016	278823	4,880 gal	-	4,880 gal	Y	9	Y	5/3/2016	
5/5/2016	278889	-	5,000 gal	5,000 gal	Y	10	Y	6/14/2016	
5/12/2016	278941	5,000 gal		5,000 gal	Y	11	Y	6/14/2016	
5/26/2016	279054	4,998 gal		4,998 gal	Y	12	Y	6/14/2016	
5/31/2016	099965	-	3,103 gal	3,103 gal	Y	13	Y	6/14/2016	
6/7/2016	279111	4,810 gal		4,810 gal	Y	14	Y	7/18/2016	
7/1/2016	283085	5,026 gal		5,026 gal	Y	15	Y	8/19/2016	
7/18/2016	283124	4,900 gal		4,900 gal	Y	16	Y	8/19/2016	
7/26/2016	283125		5,000 gal	5,000 gal	Y	17	Y	8/19/2016	Solo event - not a routine O&M day
8/9/2016	283446	4,800 gal		4,800 gal	Y	18	Y	9/6/2016	
8/31/2016	283592	5,052 gal		5,052 gal	Y	19	Y	9/6/2016	
9/1/2016	283600		4,280 gal	4,280 gal	Y	20	Y	10/7/2016	
9/22/2016	283745	4,950 gal		4,950 gal	Y	21	Y	10/7/2016	
10/7/2016	180754	4,964 gal		4,964 gal	Y	22	Y	11/18/2016	
10/17/2016	180744		4,800 gal	4,800 gal	Y	23	Y	11/18/2016	
11/4/2016	104535	5,500 gal		5,500 gal	Y	24	Y	12/22/2016	
11/29/2016	104145	5,300 gal		5,300 gal	Y	25	Y	12/22/2016	
12/1/2016	258577		4,565 gal	4,565 gal	Y	26	N	1/20/2017	
12/20/2016	258731	4,869 gal		4,869 gal	Y	27	N	1/20/2017	
1/6/2017	258823	4,900 gal		4,900 gal	Y	28	N	2/21/2017	Note - Tanker pump shaft broke, so full lo
1/16/2017	258893	4,875 gal		4,875 gal	Y	29	N	2/21/2017	
1/25/2017	259005	4,850 gal		4,850 gal	Y	30	N	2/21/2017	
2/7/2017	259108	4,900 gal		4,900 gal	Y	31	N	3/9/2017	
2/14/2017	259137		4,900 gal	4,900 gal	Y	32	N	3/9/2017	
2/16/2017	259170	4,860 gal		4,860 gal	Y	33	N	3/9/2017	
3/1/2017	259226	4,960 gal		4,960 gal	Y	34	N	TBD	
	TOTALS:	**121,742 gal**	**43,907 gal**	**165,649 gal**					

Notes:

1) Volumes reported are as listed on the Bill of Ladings

Review Ave. LNAPL Recovery System Monthly Summary
March 2017

Work completed in March 2017:

Week of Wed 3/1 – Sat 3/4

- O&M site visits on 3/1 and 3/4
- Product Load-out from T-801 on 3/1
    - 4,960 GAL Product removed (offsite) according to Bill of Lading
    - Cycle Chem Sales Rep on-site to witness tank load-out
- 1st Quarter 2017 Effluent Discharge Compliance sampling completed on 3/1

Week of Sun 3/5 – Sat 3/11

- O&M site visits on 3/6 and 3/9
- TF-5D recovery event on 3/6
    - 3 GAL Product recovered with skimmer pump
    - Sample collected for PCB analysis: 51.1 mg/l
- Quarterly LNAPL MW well gauging event on 3/6

Week of Sun 3/12 – Sat 3/18

- O&M site visits on 3/13 and 3/17
- D&D Electric Motors and Compressors onsite to replace temperature sender and regulator diaphragm on air compressor on 3/13
- Product Load-out from T-801 on 3/17
    - 4,837 GAL Product removed (offsite) according to Bill of Lading
- Re-set security camera on 3/13
- LNAPL Sampling on T-801 on 3/17 – representative of Zones 3,4,5

Week of Sun 3/19 – Sat 3/25

- Re-Set PLC Date/Time on 3/20
- O&M site visit on 3/24
- D&D Electric Motors and Compressors onsite to replace temperature sensor on air compressor on 3/24
- Trash Dumpster picked-up on 3/24
- LNAPL Sampling on T-801 on 3/24, representative of Zone 6

Week of Sun 3/26 – Fri 3/31

- O&M site visit on 3/30
- Product Load-out from T-801 on 3/30
    - 4,960 GAL Product removed (offsite) according to Bill of Lading
- Chemical delivery on 3/30
- TF-5D recovery event on 3/30
    - 3.5 GAL Product recovered with skimmer pump
    - PCB Samples collected

O&M Activities:

Week of Wed 3/1 – Sat 3/4

- Changed bag filters on 3/1
- Transferred chemicals to drums on 3/1
- Product Load Out on 3/1
- Backwash Carbon on ¾
- TF System Re-Set due to OWS Effluent Tank high water level
- Operating on TF zones 3, 4 & 5 3/1 through 3/4.

Prepared By: VMW 4/3/17
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
March 2017

Week of Sun 3/5 – Sat 3/11

- Replaced cap on TF-6D
- Remove water from T-801 on 3/6
- Changed bag filters on 3/6
- Backwash carbon on 3/9
- Troubleshoot Air Compressor on 3/9
- Transfer Chemicals on 3/9
- Clean float switch and valve on OWS Effluent Tank on 3/9
- Operating on TF zones 3, 4 & 5 3/5 through 3/11.

Week of Sun 3/12 – Sat 3/18

- Changed bag filters on 3/13
- Cleaned Product Pump Strainer on 3/13
- Decant water from backwash tote on 3/13
- Load out product on 3/17
- Backwashed carbon on 3/17
- Changed bag filters on 3/17
- Switched active TF recovery zones to TF-6 on 3/17, inspect TF-6 well vaults.
- Cleaned Effluent Pump Strainer on 3/17

Week of Sun 3/19 – Sat 3/25

- Changed bag filters on 3/24
- Cleaned basket strainer on 3/24
- Backwash carbon on 3/24
- Added TF-3 to active TF recovery zones on 3/24 – now TF-3&6
- Decant water from backwash tote on 3/24
- Re-Started on TF 3 & 6 zones after O&M complete

Week of Sun 3/26 – Fri 3/31

- Switched active carbon vessel to LGAC-1101 on 3/30
- TF-5D Skimming and PCB Sampling on 3/30
- Changed bag filters on 3/30
- Switched from TF-3&6 to TF-1 and 7. Heavy septic odor detected in GWT room after switching.

General TF Treatment System Comments:

- TF System Uptime has remained over 90% in March (approx. 92%) with flow rates as high as 12 gpm. Increased uptime largely attributable to the Tube Skimmer upgrade and the high-speed motor. Downtime largely attributable to the failure of 2 air compressor control system sensors which were replaced. Bag filters showed signs of clogging faster towards the end of the month with some signs of grey matter and a dark black material. Water removal requirements from T-801 remain much lower than before the tube skimmer was installed. Chemical injections rates for the Emulsion Breaker and Sequestering Agent remained at 40% stroke. Recovered TF oil/water concentrations have dropped to under 4% (3.82%) running primarily at TF zones 3, 4, 5 & 6.

Prepared By: VMW 4/3/17
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
March 2017

General Skimmer System Comments:

- Skimmer system still running at 100% uptime at approximately 75 GPD and remains at 18 hr/day operation in an attempt to minimize entrained air and possible air locking of remote skimmer zones.

VER/TF System Production Results:

- TF System uptime for March was 591.88 Actual Run Hours out of 642.24 Available Hours, or 92.2%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
    - TF System shut down on 2/28 due to High Product Level Alarm in T-801 and restarted on 3/1 following Product Load-out.
    - TF System shut down on 3/4 due to High OWS Effluent Level caused by carbon backpressure. Backwashed carbon and re-started on 3/4.
    - TF System shut down on 3/5 due to Air Compressor Fault and restarted on 3/6 after re-setting air compressor.
    - TF System shut down on 3/8 due to High OWS Effluent Level caused by carbon backpressure. Backwashed carbon and re-started on 3/9.
    - Air Compressor Fault on 3/9 and restarted after re-setting air compressor on 3/9.
    - TF System shut down on 3/15 due to High Product Level Alarm in T-801 and restarted on 3/17 following Product Load-out.
    - TF System shut down on 3/29 due to High Product Level Alarm in T-801 and restarted on 3/30 following Product Load-out
- Approximately 9,514 GAL Product Recovered in March from TF Zones 3,4,5 and 6.
    - Average TF Product recovery rate for March was 306.9 GPD, or 385.8 GPD accounting for system downtime.
- Approximately 132,085 GAL Product Recovered Total since system start-up
- 14,757 GAL Product from T-801 disposed of offsite in March
    - 131,539 GAL Product from T-801 disposed of Total since start-up
- Approximately 249,380 GAL Effluent discharged in March
    - Average 8,045 GPD or 10,236 GPD considering downtime
- 3,145,200 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 3.82%

Skimmer System Production Results:

- Skimmer System uptime remained at 100% (558 hours runtime) for March
    - Skimmer system running @ 18 hrs/day schedule
- Approximately 2,329 GAL Product Recovered in March
    - Average Skimmer Product recovery rate for March was 75.1 GPD
- Approximately 47,547 GAL Product Recovered Total since start-up
- 0 GAL Product from T-1401 disposed of offsite in March
    - 43,907 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 11,843 GAL Product recovered in March
    - Average Product recovery rate for March was 542 GPD.
- 179,632 GAL Product Recovered Total since system start-up
- 14,757 GAL Product shipped off-site for disposal in March (see attached summary table)

Prepared By: VMW 4/3/17
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
March 2017

- 175,446 GAL Product shipped off-site for disposal since system start-up as of the end of March 2017 (see attached summary table)
- 103,220 kWh Energy Consumption Total (as of 3/31/17) since system start-up
- 5,445 kWh Energy Consumption for March
- 0.460 kWh/GAL Average Energy Consumed per GAL of Product Recovered for March

Prepared By: VMW 4/3/17
Checked By: TCK

Recovered Product Offsite Shippment Tracking Summary
Review Avenue
Long Island City, Queens, New York

Date	BOL Number	T-801 [(1)]	T-1401 [(1)]	Total [(1)]	Copy of BOL in hand?	LOAD COUNT	INVOICED?	INVOICE DATE	COMMENTS
12/18/2015	0277706	5,000 gal	-	5,000 gal	Y	1	Y	4/7/2016	
1/11/2016	0277790	-	4,767 gal	4,767 gal	Y	2	Y	4/7/2016	
2/2/2016	0277924	5,032 gal	-	5,032 gal	Y	3	Y	4/7/2016	
2/4/2016	0277942	-	4,900 gal	4,900 gal	Y	4	Y	4/7/2016	
3/2/2016	278269	2,703 gal	2,592 gal	5,295 gal	Y	5	Y	5/3/2016	Solo event - not a routine O&M day
3/17/2016	0278392	4,613 gal	-	4,613 gal	Y	6	Y	5/3/2016	
3/31/2016	278518	5,000 gal	-	5,000 gal	Y	7	Y	5/3/2016	
4/13/2016	278574	5,000 gal	-	5,000 gal	Y	8	Y	5/3/2016	
4/27/2016	278823	4,880 gal	-	4,880 gal	Y	9	Y	5/3/2016	
5/5/2016	278889	-	5,000 gal	5,000 gal	Y	10	Y	6/14/2016	
5/12/2016	278941	5,000 gal		5,000 gal	Y	11	Y	6/14/2016	
5/26/2016	279054	4,998 gal		4,998 gal	Y	12	Y	6/14/2016	
5/31/2016	099965	-	3,103 gal	3,103 gal	Y	13	Y	6/14/2016	
6/7/2016	279111	4,810 gal		4,810 gal	Y	14	Y	7/18/2016	
7/1/2016	283085	5,026 gal		5,026 gal	Y	15	Y	8/19/2016	
7/18/2016	283124	4,900 gal		4,900 gal	Y	16	Y	8/19/2016	
7/26/2016	283125		5,000 gal	5,000 gal	Y	17	Y	8/19/2016	Solo event - not a routine O&M day
8/9/2016	283446	4,800 gal		4,800 gal	Y	18	Y	9/6/2016	
8/31/2016	283592	5,052 gal		5,052 gal	Y	19	Y	9/6/2016	
9/1/2016	283600		4,280 gal	4,280 gal	Y	20	Y	10/7/2016	
9/22/2016	283745	4,950 gal		4,950 gal	Y	21	Y	10/7/2016	
10/7/2016	180754	4,964 gal		4,964 gal	Y	22	Y	11/18/2016	
10/17/2016	180744		4,800 gal	4,800 gal	Y	23	Y	11/18/2016	
11/4/2016	104535	5,500 gal		5,500 gal	Y	24	Y	12/22/2016	
11/29/2016	104145	5,300 gal		5,300 gal	Y	25	Y	12/22/2016	
12/1/2016	258577		4,565 gal	4,565 gal	Y	26	Y	1/20/2017	
12/20/2016	258731	4,869 gal		4,869 gal	Y	27	Y	1/20/2017	
1/6/2017	258823	4,900 gal		4,900 gal	Y	28	Y	2/21/2017	Note - Tanker pump shaft broke, so full load could not be collected, Tanker to return on 1/6/17 to complete load-out
1/16/2017	258893	4,875 gal		4,875 gal	Y	29	Y	2/21/2017	
1/25/2017	259005	4,850 gal		4,850 gal	Y	30	Y	2/21/2017	
2/7/2017	259108	4,900 gal		4,900 gal	Y	31	Y	3/15/2017	
2/14/2017	259137		4,900 gal	4,900 gal	Y	32	Y	3/15/2017	
2/16/2017	259170	4,860 gal		4,860 gal	Y	33	Y	3/15/2017	
3/1/2017	259226	4,960 gal		4,960 gal	Y	34	Y	4/26/2017	
3/17/2017	280224	4,837 gal		4,837 gal	Y	35	Y	4/26/2017	
3/30/2017	280327	4,960 gal		4,960 gal	Y	36	Y	4/26/2017	
4/10/2017	280370	3,436 gal		3,436 gal	Y	37	N	TBD	
4/25/2017			5,000 gal	5,000 gal	N	38	N	TBD	
	TOTALS:	**134,975 gal**	**48,907 gal**	**183,882 gal**					

Notes:

1) Volumes reported are as listed on the Bill of Ladings

APPENDIX B

Annual Inspection Report

Site Inspection Form – RAD II

I. Site Information		
Site Name:	Review Avenue Development Site II (RAD II)	
NYSDEC Site Number:	BCP #C241005	
Site Address:	37-30 Review Avenue, Long Island City, NY	
Block/Lot:	Block 312; Lot 69	
Date of Inspection:	11/18/16	
Type of Inspection:	Regular ☒	Emergency ☐
Inspected By:	Brent O'Dell	

II. General Information	
Current Site Use: (Warehouse, Parking Lot, Vacant, etc.):	Commercial, Flex Space, Temporary Storage/Parking
Summary of Previous Inspections:	
First	

III. Weather Conditions			
Time	**Temperature**	**Condition (Sunny, Overcast, Precipitation, etc.)**	**Wind (Light, Moderate, Heavy, etc.)**
10:30	50s, 60s	Sunny	High or moderate

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

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			Good in treatment area Minor cracking near entrance Sealant needed.

b.	Differential Settlement (Check for settlement or subsidence)	X			Settlement under GAC. Evidence of point leads without proper wood chalking at several areas
c.	Disturbance (Check for disturbance e.g. construction or utility repair, etc.)	x			Fence supports put in without notification
Engineering Control: LNAPL Recovery System					
a.	Recovery Well Vaults and Pumps (Check for leaks, operation, vault security, etc.)	X			Inspected per OMM. CSS Office. See Attachment A.
b.	LNAPL Storage Tanks (Check capacity, inspect for leaks, corrosion, etc.)	X			
c.	LNAPL Recovery / Groundwater Treatment System (Check for operation, leaks, up-to-date maintenance, etc.)				AIR Compressor had 3 services OWS had 4 clean outs GAC clean out as needed.
d.	Equipment Enclosures (Check emergency lights, signs, fire extinguishers, eyewash, condition of doors/exterior, etc.)	X			
	Sea Box • First Aid Kit • Uneven floors and coating and containment of OWS • KO tank run needs sprucing up. • Fence between RAD II and phoenix in the back needs repair. • Accessibility to eye wash and safety equipment needs to be maintained • Spill kit need to be replenished				
Other:					
a.	Monitoring Wells (Check if secured, inspect condition of well, well cap, etc.)	X			Conduct inspections Monthly. Bolts for lids consistently require replacement. See Attachment B.

b.	Security (Check fence, gates, locks, etc.)	X			Consider Jersey barriers installation along west side fence Fence repaired Gap between Review Ave and RAD I/II fence. Anticipated to be repaired by property manager
c.	Site Use (Has site use changed? If so, is it still used for restricted use as specified in the SMP?)	X			

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			Need to comply better with SMP requirements for excavation.
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	

Other problems or suggestions:

VII. Groundwater and LNAPL Elevations

Monthly LNAPL Thickness Measurements: SEE ATTACHMENT C

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-03							

AML-06							
GAL-01RR							
GAL-02R							
GAL-03R							
GAL-04R							
GAL-05R							
GAL-06							
GAL-07							
GAL-08							
GAL-09							
GAL-16R							
GAL-29							
GAL-30							
GAL-31R							
GAGW-04							

Semi-Annual Groundwater Elevation Measurements: SEE ATTACHMENT C

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							
AMGW-05R							
GAGW-6I							

Semi-Annual LNAPL Thickness Measurements
(6 Single Phase LNAPL Recovery Wells from RAD I & RAD II): SEE ATTACHMENT C

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)		

IX. Overall Observations on Remedy Implementation & Site Conditions

- Fence needs repairs around perimeter of RAD II between phoenix and RAD II
- Minor cracks in pavement area at the entrance of RAD II that needs to be sealed
- Some trailers not supported on wood chalks
- Treatment area in good shape
- Make safety equipment accessible within blower room
- Make space for storage. Spotted an additional Sea Box for storage.

APPENDIX C

Discharge Compliance Reports

de maximis, inc.

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

March 30, 2016

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
1st Quarter 2016 Effluent Discharge Compliance Report

Dear Mr. Hulbert:

Enclosed please find the Effluent Discharge Compliance Report for the 1st Quarter 2016 effluent samples collected from the groundwater treatment plant at the Review Avenue Development Site (Site). 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 1st Quarter 2016:

- Approximately 394,000 gallons of treated water have been discharged during this quarter to date.
- Aside from the questionable Non-Polar Material (NPM) result from January (which only marginally exceeded discharge criteria), no constituents were reported above discharge criteria.
- Internal process sampling indicated compliance with discharge parameters prior to carbon polishing.

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 1st Quarter 2016
CC: Brian Davidson, NYDEC
Brent O'Dell, AMEC - Foster Wheeler
File: 3216 / 1st Q Compliance Report 2016

March 31, 2016

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

Subject: **1Q 2016 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:

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), on behalf of Review Avenue System LLC, herewith 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, dated November 2, 2015.

As per our February 12, 2016 email to you, Amec Foster Wheeler collected the 1Q 2016 effluent discharge compliance samples on January 25, 2015. Prior to receiving the results of that sampling event, the Review Avenue groundwater treatment system (GWTS, or system) shut down automatically on February 4, 2016 due to a high pressure condition in the granular activated carbon (GAC) vessels. Analytical data from the January 25th sampling event indicated effluent discharge concentrations less than the LOA daily and monthly discharge limits for all parameters except Non-polar Material (NPM), which was reported at an estimated concentration slightly above the LOA daily limit (58.5 mg/l). As a reminder we suspected that there may have been cross contamination between samples in the field or the laboratory for that sample event. Also, the results for NPM was qualified that the MS/MSD recovery was not in the appropriate range, and the result was reported as an estimated value. Another issue identified with the Janaury 25th results was that analysis for Hexavalent Chromium (Chromium (VI)) was not performed since the sample exceeded holding times,

Following system shutdown on February 4th, Amec Foster Wheeler did not operate the system, opting instead to use the shutdown period to perform quarterly maintenance and modify some of the system piping configurations. Amec Foster Wheeler completed maintenance activities and restarted the system for continuous operations on February 22nd.

Following restart, the system was resampled for effluent NPM on February 25th, and for Chromium (VI) on February 2nd, February 22nd, and March 7th. Although the Chromium (VI) samples on

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March 31, 2016
Sean Hulbert, NYCDEP
1Q 2016 Effluent Discharge Compliance

February 2nd and February 22nd were delivered to the laboratory within the holding time, they were not analyzed by the laboratory on time. Chromium (VI) analysis was performed by the laboratory on the March 7th sample within the holding time. The results for NPM and Cr+6 were reported at concentrations less than the LOA Daily Limit.

The second quarter discharge sampling will be conducted in early April to ensure compliance with discharge limits and confirm that the samples collected on January 25th were representative of the treated groundwater and that only the NPM data was affected by the suspected cross contamination.

The analytical data collected for the 1st quarter 2016 compliance sampling is summarized in Table 1, attached. If you have any questions, please contact either of the undersigned at (609) 689-2829.

Sincerely,

Amec Foster Wheeler Environment & Infrastructure, Inc.

BY: Timothy Keefe WITH PERMISSION from Brent O'Dell

William J. Mikula, P.E.
Associate Engineer-Civil

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

Attachments:

a. Table 1 – Summary of Groundwater Analytical Results

cc:

R. Craig Coslett – Review Avenue System LLC

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-G	RA-EFF-G	RA-EFF-G	RA-EFF-G	RA-EFF-C
Compliance Period:				1Q 2016	1Q 2016	1Q 2016	1Q 2016	1Q 2016	1Q 2016
Sample Date:				1/25/2016	2/2/2016	2/22/2016	2/25/2016	3/7/2016	1/25/2016
Lab Sample ID:				460-108095-1	460-108328-1	JC14654-1	JC14845-3R	JC15537-1	460-108095-2
Non-polar material[1]	mg/L	50	NL	**58.5** F1	-	-	8.9	-	-
pH[2]	SUs	5 - 12	NL	7.91	-	-	-	-	-
Temperature[2]	ºF	< 150	NL	54.14	-	-	-	-	-
Flash Point[3]	ºF	> 140	NL	> 160	-	-	-	-	-
Cadmium (Instantaneous)	mg/L	2	NL	0.0016 U	-	-	-	-	0.0016 U
Cadmium (Composite)	mg/L	0.69	NL	0.0016 U	-	-	-	-	0.0016 U
Chromium (VI)	mg/L	5	NL	-	0.005 U H	0.010 U (a)	-	0.026	-
Copper	mg/L	5	NL	0.0056 U	-	-	-	-	-
Lead	mg/L	2	NL	0.0043 U	-	-	-	-	-
Mercury	mg/L	0.05	NL	0.00014 U	-	-	-	-	-
Nickel	mg/L	3	NL	0.0055 U	-	-	-	-	-
Zinc	mg/L	5	NL	0.023 J	-	-	-	-	-
Benzene	µg/L	134	57	0.30 J	-	-	-	-	-
Carbon Tetrachloride	µg/L	NL	NL	-	-	-	-	-	0.33 U
Chloroform	µg/L	NL	NL	-	-	-	-	-	0.22 U
1,4-Dichlorobenzene	µg/L	NL	NL	-	-	-	-	-	0.33 U
Ethylbenzene	µg/L	380	142	1.1	-	-	-	-	-
MTBE (Methyl-Tert-Butyl-Ether)	µg/L	50	NL	2.1	-	-	-	-	-
Napthalene	µg/L	47	19	-	-	-	-	-	1.7 U
Phenol	µg/L	NL	NL	-	-	-	-	-	0.89 U
Tetrachloroethylene (Perc)	µg/L	20	NL	0.12 U	-	-	-	-	-
Toluene	µg/L	74	28	0.26 J	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/L	NL	NL	-	-	-	-	-	1.3 U
1,1,1-Trichloroethane	µg/L	NL	NL	-	-	-	-	-	0.28 U
Xylenes (Total)	µg/L	74	28	3.2	-	-	-	-	-
PCBs (Total)	µg/L	1	NL	-	-	-	-	-	0.85
Total Suspended Solids (TSS)	mg/L	350	NL	30	-	-	-	-	-
CBOD	mg/L	NL	NL	-	-	-	-	-	13.1
Chloride	mg/L	NL	NL	104	-	-	-	-	-
Total Nitrogen	mg/L	NL	NL	-	-	-	-	-	2.6
Total Solids	mg/L	NL	NL	567	-	-	-	-	-

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 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:
(a): Sample was prepped or analyzed beyond the specified holding time
H: Sample was prepped or analyzed beyond the specified holding time
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.
F1: MS and/or MSD Recovery is outside acceptance limits.

June 10, 2016

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

Subject: **2Q 2016 Effluent Discharge Compliance – Revised Report**
Review Avenue Development Sites
37-30 and 37-80 Review Avenue
Long Island City, Queens, New York
File # C-5652

Dear Mr. Hulbert:

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), on behalf of Review Avenue System LLC, herewith 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, dated November 2, 2015.

Amec Foster Wheeler collected the 2Q 2016 effluent discharge compliance samples on April 5, 2016. However, as noted by your office, since the laboratory utilized unapproved metals analysis methods (except Cr VI) for samples collected on 4/5/16, the laboratory has re-run the metals samples using the correct methods. Note that a new sample for Mercury (Hg) needed to be collected because the sample originally collected was outside of the holding time. The new sample for Hg was collected on 5/26/16 and analyzed using the correct method.

Analytical results indicate no exceedances of the daily or monthly discharge limits and therefore the discharge is in compliance with our permit requirements. The updated analytical data collected for the 2nd quarter 2016 compliance sampling is summarized in Table 1, attached. The total volume of groundwater discharged to the sanitary or combined sewer as of the April 5, 2016 sampling event was 737,430 gallons and 1,164,030 gallons as of the 5/26/16 re-sampling event for Hg. If you have any questions, please contact either of the undersigned at (609) 689-2829.

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amecfw.com

June 10, 2016
Sean Hulbert, NYCDEP
1Q 2016 Effluent Discharge Compliance

Sincerely,

Amec Foster Wheeler Environment & Infrastructure, Inc.

William J. Mikula, P.E.
Associate Engineer-Civil

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

Attachments:

a. Table 1 – Summary of Groundwater Analytical Results

cc:

R. Craig Coslett – Review Avenue System LLC

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-G		RA-EFF-G		RA-EFF-C		RA-EFF-C	
Compliance Period:				2Q 2016		2Q 2016		2Q 2016		2Q 2016		2Q 2016	
Sample Date:				4/5/2016		4/5/2016		5/26/2016		4/5/2016		4/5/2016	
Lab Sample ID:				JC17607-1		JC17607-1R[(a)]		JC21055-1[(b)]		JC17607-2		JC17607-2R[(a)]	
Non-polar material[1]	mg/L	50	NL	38		-		-		-		-	
pH[2]	SUs	5 - 12	NL	7.76		-		-		-		-	
Temperature[2]	ºF	< 150	NL	55.58		-		-		-		-	
Flash Point[3]	ºF	> 140	NL	> 200		-		-		-		-	
Cadmium (Instantaneous)	mg/L	2	NL	0.003	U	0.003	U	-		-		-	
Cadmium (Composite)	mg/L	0.69	NL	-		-		-		0.003	U	0.003	U
Chromium (VI)	mg/L	5	NL	0.01	U	-		-		-		-	
Copper	mg/L	5	NL	0.01	U	0.01	U	-		-		-	
Lead	mg/L	2	NL	0.003	U	0.0031		-		-		-	
Mercury	mg/L	0.05	NL	0.0002	U	0.0002	U H	0.0002	U	-		-	
Nickel	mg/L	3	NL	0.01	U	0.01	U	-		-		-	
Zinc	mg/L	5	NL	0.132		0.127		-		-		-	
Benzene	µg/L	134	57	0.24	J	-		-		-		-	
Carbon Tetrachloride	µg/L	NL	NL	-		-		-		1	U	-	
Chloroform	µg/L	NL	NL	-		-		-		1	U	-	
1,4-Dichlorobenzene	µg/L	NL	NL	-		-		-		1	U	-	
Ethylbenzene	µg/L	380	142	0.47	J	-		-		-		-	
MTBE (Methyl-Tert-Butyl-Ether)	µg/L	50	NL	1	U	-		-		-		-	
Napthalene	µg/L	47	19	-		-		-		1.9		-	
Phenol	µg/L	NL	NL	-		-		-		2.1	U	-	
Tetrachloroethylene (Perc)	µg/L	20	NL	1	U	-		-		-		-	
Toluene	µg/L	74	28	1	U	-		-		-		-	
1,2,4-Trichlorobenzene	µg/L	NL	NL	-		-		-		1.1	U	-	
1,1,1-Trichloroethane	µg/L	NL	NL	-		-		-		1	U	-	
Xylenes (Total)	µg/L	74	28	2.7		-		-		-		-	
PCBs (Total)	µg/L	1	NL	-		-		-		0.05	U	-	
Total Suspended Solids (TSS)	mg/L	350	NL	4	U	-		-		-		-	
CBOD	mg/L	NL	NL	-		-		-		9.2		-	
Chloride	mg/L	NL	NL	451		-		-		-		-	
Total Nitrogen	mg/L	NL	NL	-		-		-		2.9		-	
Total Solids	mg/L	NL	NL	1460		-		-		-		-	

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 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:
H: Sample was prepped or analyzed beyond the specified holding time
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/MDL.
F1: MS and/or MSD Recovery is outside acceptance limits.

Footnotes:
(a): Samples reanalyzed for Metals using 40 CFR 136 compliant test methods (EPA 200.7 for Cd, Cu, Pb, Ni & Zn and EPA 245.1 for Hg)
(b): New sample collected and analyzed within holding time for Mercury.

de maximis, inc.

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

October 5, 2016

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 2016 Effluent Discharge Compliance Report

Dear Mr. Hulbert:

Enclosed please find the Effluent Discharge Compliance Report for the 3rd Quarter 2016 effluent samples collected from the groundwater treatment plant at the Review Avenue Development Site (Site). 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 2016:

- Approximately 894,700 gallons of treated water were discharged to the sewer system during this reporting period.
- A nonpolar material effluent sample was collected in advance of the full analytical as described in AMECs transmittal. The result of that sample was within discharge requirements.
- The nonpolar material sample reported as part of the full compliance sampling was collected prior to the carbon filters for this event.
- Sample results continue to be within discharge requirements.
- The next sampling event is anticipated November/December 2016.

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 1st Quarter 2016
CC: John Grathwol, NYDEC
Brent O'Dell, AMEC FW

File: 3216 / 2016 3rd Quarter Discharge Compliance Report - Review Avenue

October 4, 2016

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

Subject: **3Q 2016 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:

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), on behalf of Review Avenue System LLC, herewith 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, dated November 2, 2015.

Amec Foster Wheeler collected the 3Q 2016 discharge compliance samples on July, 27th and August 4th, 2016. Due to an analytical laboratory bottle order error, only the Non-Polar Material (SGT-HEM) grab discharge sample was collected on July 27th, 2016. The balance of grab and composite discharge samples were collected on August 4th, 2016 as required for analysis of the remaining parameters with the following modification: a sample for the non-polar material (SGT-HEM) was collected from a sample port prior to the carbon filters.

Analytical results indicate (including the sample collected prior to carbon filtration) no exceedances of the daily or monthly discharge limits for all parameters, and therefore the discharge is in compliance with our LOA requirements. The updated analytical data collected for the 3rd quarter 2016 compliance sampling is summarized on Table 1 attached. The total volume of groundwater discharged to the sanitary or combined sewer as of the August 4th, 2016 sampling event was 1,631,900 gallons.

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amecfw.com

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

Sincerely,

Amec Foster Wheeler Environment & Infrastructure, Inc.

William J. Mikula, P.E.
Associate Engineer-Civil

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

Attachments:

Table 1 – Summary of Groundwater Analytical Results

cc:

R. Craig Coslett – Review Avenue System LLC

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-G		RA-EFF-C		LGAC-INF-080416
Compliance Period:				3Q 2016		3Q 2016		3Q 2016		3Q 2016
Sample Date:				7/27/2016		8/4/2016		8/4/2016		8/4/2016
Lab Sample ID:				JC24787-1		JC25200-1		JC25200-2		JC25201-1
Non-polar material[1]	mg/L	50	NL	31.1		-		-		36.0
pH[2]	SUs	5 - 12	NL	-		7.05		-		-
Temperature[2]	ºF	< 150	NL	-		69.44		-		-
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	-		0.0244		-		-
Benzene	µg/L	134	57	-		1	U	-		-
Carbon Tetrachloride	µg/L	NL	NL	-		-		1	U	-
Chloroform	µg/L	NL	NL	-		-		1	U	-
1,4-Dichlorobenzene	µg/L	NL	NL	-		1	U	-		-
Ethylbenzene	µg/L	380	142	-		1	U	-		-
MTBE (Methyl-Tert-Butyl-Ether)	µg/L	50	NL	-		1	U	-		-
Naphthalene	µg/L	47	19	-		-		1	U	-
Phenol	µg/L	NL	NL	-		-		2	U	-
Tetrachloroethylene (Perc)	µg/L	20	NL	-		1	U	-		-
Toluene	µg/L	74	28	-		1	U	-		-
1,2,4-Trichlorobenzene	µg/L	NL	NL	-		-		1	U	-
1,1,1-Trichloroethane	µg/L	NL	NL	-		-		1	U	-
Xylenes (Total)	µg/L	74	28	-		1	U	-		-
PCBs (Total)	µg/L	1	NL	-		-		0.053	U	-
Total Suspended Solids (TSS)	mg/L	350	NL	-		23.7		-		-
CBOD	mg/L	NL	NL	-		-		5	U	-
Chloride	mg/L	NL	NL	-		375		-		-
Total Nitrogen	mg/L	NL	NL	-		-		2.8		-
Total Solids	mg/L	NL	NL	-		1,510		-		-

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 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:
H: Sample was prepped or analyzed beyond the specified holding time
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.
F1: MS and/or MSD Recovery is outside acceptance limits.

de maximis, inc.

1550 Pond Road
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(610) 435-1151
(610) 435-8459 FAX

March 2, 2017

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
4th Quarter 2016 Effluent Discharge Compliance Report

Dear Mr. Hulbert:

Enclosed is the 4th Quarter 2016 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 1st Quarter 2016:

- 550,840 gallons of water have been discharged to the sewer system during this quarter.
- 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 4th Quarter 2016
CC: John Grathwol, NYDEC (Electronic Mail Only)
Brent O'Dell, Amec FW (Electronic Mail Only)
File: 3216 / 4th Q Compliance Report 2016

March 2, 2017

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

Subject: **4Q 2016 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:

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), on behalf of Review Avenue System LLC, here with 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 13, 2016.

Amec Foster Wheeler collected the 4Q 2016 discharge compliance samples on December 15th and 22nd, 2016. A sample for the non-polar material (SGT-HEM) was also collected on December 22nd from a sample port prior to the carbon filters to gauge the quality of process water leaving the Oil/Water Separation System. Analytical results indicate (including the sample collected prior to carbon filtration) no exceedances of the daily or monthly discharge limits for all parameters, and therefore the discharge is in compliance with our LOA requirements. The updated analytical data collected for the 4rth quarter 2016 compliance sampling is summarized on Table 1 attached. The total volume of groundwater discharged to the sanitary or combined sewer, since system start-up is 2,225,500 gallons as of the December 22nd event and 550,840 gallons for this quarter.

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

Sincerely,
Amec Foster Wheeler Environment & Infrastructure, Inc.

William J. Mikula, P.E.
Associate Engineer-Civil

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

Attachments: Table 1 – Summary of Groundwater Analytical Results
cc: R. Craig Coslett – Review Avenue System LLC

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amecfw.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		LGAC-INF-1216	RA-EFF-G	RA-EFF-C	
Compliance Period:				4Q 2016		4Q 2016	4Q 2016	4Q 2016	
Sample Date:				12/15/2016		12/22/2016	12/22/2016	12/15/2016	
Lab Sample ID:				JC33764-1		JC34269-1	JC34268-1	JC33764-2	
Non-polar material[1]	mg/L	50	NL	-		12.8	8.9	-	
pH[2]	SUs	5 - 12	NL	7.03		-	-	-	
Temperature[2]	ºF	< 150	NL	49.1		-	-	-	
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	0.0234		-	-	-	
Zinc	mg/L	5	NL	0.0912		-	-	-	
Benzene	µg/L	134	57	0.71	J	-	-	-	
Carbon Tetrachloride	µg/L	NL	NL	-		-	-	1	U
Chloroform	µg/L	NL	NL	-		-	-	1	U
1,4-Dichlorobenzene	µg/L	NL	NL	1	U	-	-	-	
Ethylbenzene	µg/L	380	142	1	U	-	-	-	
MTBE (Methyl-Tert-Butyl-Ether)	µg/L	50	NL	1	U	-	-	-	
Napthalene	µg/L	47	19	-		-	-	1	U
Phenol	µg/L	NL	NL	-		-	-	2.1	U
Tetrachloroethylene (Perc)	µg/L	20	NL	1	U	-	-	-	
Toluene	µg/L	74	28	1	U	-	-	-	
1,2,4-Trichlorobenzene	µg/L	NL	NL	-		-	-	1	U
1,1,1-Trichloroethane	µg/L	NL	NL	-		-	-	1	U
Xylenes (Total)	µg/L	74	28	0.45	J	-	-	-	
PCBs (Total)	µg/L	1	NL	-		-	-	0.052	U
Total Suspended Solids (TSS)	mg/L	350	NL	56		-	-	-	
CBOD	mg/L	NL	NL	-		-	-	5	U
Chloride	mg/L	NL	NL	319		-	-	-	
Total Nitrogen	mg/L	NL	NL	-		-	-	2.7	
Total Solids	mg/L	NL	NL	1,640			-	-	

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 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:
H: Sample was prepped or analyzed beyond the specified holding time
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.
F1: MS and/or MSD Recovery is outside acceptance limits.

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

Notes:
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F1: MS and/or MSD Recovery is outside acceptance limits.

APPENDIX D

2016 Groundwater Sampling Event

de maximis, inc.

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

March 6, 2017

Via Electronic and U.S. Mail

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

Reference: #C241005 – GW December 2016
Review Avenue Development Sites - Long Island City, Queens, New York
Semi Annual Groundwater Sample Results – December 2016

Dear Mr. Grathwol:

Attached please find the Data Usability Summary Report (DUSR) for the December 2016 groundwater sampling event for the Review Avenue Development Sites (RAD I - Site #C241089 and RAD II – Site #C241005) located at 37-80 and 37-88 Review Avenue (respectively), Long Island City, Queens Borough, New York.

Groundwater samples were collected consistent with the approved Site Management Plan (SMP). Note that GAGW-9S and GAGW-9D, which are located off property and hydraulically downgradient of the properties, were not accessible as anticipated in the approved SMP.

Should you have any questions or comments regarding the attached data or EQuIS data deliverable 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

CC: David Kushner, Cresswood Environmental Consultants
Stephanie Selmer, New York State Department of Health
Brent O'Dell, AMEC

File: 3216.15/2017-03 #C241005 - GW December 2016

DATA USABILITY SUMMARY REPORT
DECEMBER 2016 GROUNDWATER SAMPLING EVENT
REVIEW AVENUE GROUNDWATER MONITORING
LONG ISLAND CITY, NEW YORK

1.0 INTRODUCTION

Groundwater samples were collected at the Review Avenue site in December 2016 and submitted to SGS Accutest Laboratory (SGS) located in Dayton, New Jersey, for analysis. Analyses for all parameters were performed by SGS. Samples were analyzed by one or more of the following methods:

- Volatile Organic Compounds (VOCs) by EPA Method 8260C
- Semivolatile Organic Compounds (SVOCs) by EPA Method 8270D
- Polynuclear Aromatic Hydrocarbons (PAHs) by EPA Method 8270D Selected Ion Monitoring (SIM)
- Pesticides by EPA Method 8081B
- Polychlorinated Biphenyls (PCBs) by EPA Method 8082A
- Methane, Ethane, and Ethene by Method RSK-175
- Total Metals by EPA Methods 6010C/7470A
- Chloride and Sulfate by EPA Method 300.0
- Nitrate by EPA Method 353.2
- Ferrous Iron by Standard Method SM 3500 FE B-11
- Total Organic Carbon (TOC) by Standard Method SM 5310 B-11
- Alkalinity by Standard Method SM 2320 B-11
- Hardness by Standard Method SM 2340 C-11
- Ammonia by Standard Method SM 4500 NH3 H-11

Results were reported in the following sample delivery group (SDG):

- JC34064

A Data Usability Summary Report (DUSR) review was completed based on the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation guidance (NYSDEC, 2010). Sample event information included in this DUSR is presented in the following Tables:

- Table 1 – Summary of Samples and Analytical Methods
- Table 2 – Summary of Analytical Results
- Table 3 – Summary of Qualification Actions

Laboratory deliverables included:

- Category B deliverables as defined in the NYSDEC Analytical Services Protocols (NYSDEC, 2005).

The DUSR review included the following evaluations. A table of the project control limits is presented in Attachment A. Applicable laboratory QC summary forms are included in Attachment B to document QC outliers associated with qualification actions.

- Lab Report Narrative Review
- Data Package Completeness and COC records (Table 1 verification)
- Sample Preservation and Holding Times
- Instrument Calibration (report narrative/lab-qualifier evaluation)
- QC Blanks
- Laboratory Control Samples (LCS)
- Matrix Spike/Matrix Spike Duplicates (MS/MSD)
- Surrogate Spikes (if applicable)
- Field Duplicates
- Target Analyte Identification and Quantitation
- Raw Data (chromatograms), Calculation Checks and Transcription Verifications
- Reporting Limits
- Electronic Data Qualification and Verification

Data qualification actions are applied when necessary based on general procedures in USEPA validation guidelines (USEPA, 2006a; USEPA, 2006b; USEPA, 2006c; USEPA, 2008; USEPA, 2014) and the judgment of the project chemist. The following laboratory or data review qualifiers are used in the final data presentation:

U = target analyte is not detected above the reported detection limit
J = concentration is estimated
UJ = target analyte is not detected and value is estimated
R = target analyte result is rejected

Results are interpreted to be usable as reported by the laboratory or as qualified in the following sections.

2.0 POTENTIAL DATA LIMITATIONS

Based on the DUSR review the majority of data can be used as reported by the laboratory. A subset of results were qualified during the DUSR review. Data usability limitations for analytical method results are discussed in the following sections.

A field duplicate was collected for sample location GAGW-08R and analyzed for VOCs, SVOCs, PAHs, pesticides, PCBs, and metals. Good agreement was observed for all methods and target analytes except iron as discussed under the metals method below.

<u>VOCs</u>

- Reporting limits for VOC target analyte chloromethane in a subset of samples were qualified estimated (UJ) based on a low recovery in the associated LCS. Chloromethane was not detected in the samples. Qualified results are summarized in Table 3 and were assigned reason code LCS-L.
- Matrix spike analysis for VOCs was performed using sample GAGW-08R. The reporting limits for VOC target analyte chloromethane in sample GAGW-08R and associated field duplicate GAGW-DUP were qualified estimated (UJ) based on a low recovery in the associated MS. Chloromethane was not detected in the sample or associated field duplicate. Qualified results are summarized in Table 3 and were assigned reason code MS-L.

SVOCs

- J Reporting limits for the following SVOC target analytes in a subset of samples were qualified estimated (UJ) based on low recoveries in the associated LCSs:
  Phenol
  4-Chloroaniline
  Caprolactam
  3,3'-Dichlorobenzidine
  Hexachlorobutadiene
  Hexachlorocyclopentadiene
  Hexachloroethane
  3-Nitroaniline
  These analytes were not detected in the samples. Qualified results are summarized in Table 3 and were assigned reason code LCS-L.
- J Positive and non-detect results for SVOC target analyte 1,4-dioxane in a subset of samples were qualified estimated (J/UJ) based on low recoveries in the associated LCSs. Qualified results are summarized in Table 3 with reason code LCS-L.
- J MS/MSD analyses for SVOCs were performed using sample GAGW-02. Reporting limits for the following SVOC target analytes in sample GAGW-02 were qualified estimated (UJ) based on low recoveries in the associated MS/MSD:
  2,4-Dimethylphenol
  Caprolactam
  1,4-Dioxane
  Hexachlorobutadiene
  3-Nitroaniline
  4-Nitroaniline
  These analytes were not detected in sample GAGW-02. Qualified results are summarized in Table 3 and were assigned reason code MS-L.
- J Results for SVOC target analytes 4-chloroaniline and 3,3'-dichlorobenzidine in sample GAGW-02 were qualified rejected (R) based on MS/MSD percent recoveries of 0. These analytes were not detected in sample GAGW-02. Qualified results are summarized in Table 3 with reason code MS-L.

Metals

- J The relative percent difference (RPD) for iron (30) in field duplicate sample GAGW-DUP was greater than the project specified control limit. Positive results were reported for iron and were qualified estimated (J) in all GAGW samples and associated field duplicate GAGW-DUP. Qualified results are summarized in Table 3 with reason code FD.
- J As noted in the narrative, a serial dilution analysis for metals was performed using sample AMGW-10D. The serial dilution result for zinc in sample AMGW-10D was outside the control limit and noted in the laboratory narrative. Based on professional judgment the serial dilution results were evaluated and the associated sample result was qualified estimated (J). The serial dilution results indicate a potential low bias for the reported zinc result for sample AMGW-10D. The qualified result is included in Table 3 with reason code SD.

- In the absence of NYSDEC DER guidance, a 24 hour holding time was used to evaluate the analytical holding time for ferrous iron. Laboratory analyses for ferrous iron in samples GAGW-02 and GAGW-06I were performed after expiration of the 24 hour holding time, at approximately 33 hours and 30 hours, respectively, from the time of collection. Based on professional judgment, the positive and non-detect results for ferrous iron in samples GAGW-02 and GAGW-06I were qualified estimated (J/UJ). Qualified results are summarized in Table 3 with reason code HT.

TOC

- TOC was reported in the instrument blanks associated with a subset of samples. Low concentration detections of TOC in the following samples were qualified non-detect (U) based on contamination in the blanks:
  AMGW-10D
  GAGW-08R
  GAGW-04D
  GAGW-05R
  Qualified results are summarized in Table 3 and were assigned reason code BL1.

3.0 ADDITIONAL QC EXCEEDANCES AND OBSERVATIONS

There were no additional observations or quality control exceedances not specifically addressed above (Section 2.0) or included in Table 3. Unless presented in Table 3, sample results are interpreted to be usable as reported by the laboratory.

Reference:

New York State Department of Environmental Conservation (NYSDEC), 2005. "Analytical Services Protocols"; June 2005.

New York State Department of Environmental Conservation (NYSDEC), 2010. "Technical Guidance for Site Investigation and Remediation-Appendix 2B"; DER-10; Division of Environmental Remediation; May 2010.

U.S. Environmental Protection Agency (USEPA), 2006a. "Validation of Metals for the Contract Laboratory Program (CLP) based on SOW ILM05.3 (SOP Revision 13)"; SOP # HW-2, Revision 3, Hazardous Waste Support Branch; September 2006.

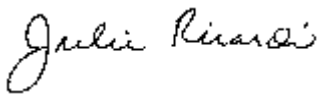
U.S. Environmental Protection Agency (USEPA), 2006b. "Validating PCB Compounds PCBS by Gas Chromatography SW-846 Method 8082A"; USEPA Region II Hazardous Waste Support Branch; HW-45; Revision 1.0; October 2006.

U.S. Environmental Protection Agency (USEPA), 2006c. "Validating Pesticide Compounds Organochlorine Pesticides By Gas Chromatography SW-846 Method 8081B"; USEPA Region II Hazardous Waste Support Branch; HW-44; Revision 1.0; October 2006.

U.S. Environmental Protection Agency (USEPA), 2008. "Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8270D"; USEPA Region II; HW-22; Revision 4; October 2008.

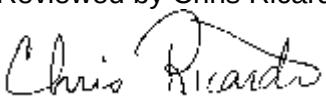
U.S. Environmental Protection Agency (USEPA), 2014. "Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B"; USEPA Region II; HW-24; Revision 4; September 2014.

Data Validator: Julie Ricardi



January 19, 2017

Reviewed by Chris Ricardi, NRCC-EAC



January 31, 2017

TABLE 1 - SUMMARY OF SAMPLES AND ANALYTICAL METHODS
DATA USABILITY SUMMARY REPORT
DECEMBER 2016 GROUNDWATER SAMPLING EVENT
REVIEW AVENUE GROUNDWATER MONITORING
LONG ISLAND CITY, NEW YORK

					Method	SW8260C	SW8270D	SW8270D SIM	SW8081B	SW8082	SW6010C	SW7470A	E300
					FRACTION	N	N	N	N	N	T	T	N
SDG	Location ID	Sample ID	Sample Date	Matrix	Sample Type	Count of Results	Count of Results	Count of Results	Count of Results	Count of Results	Count of Results	Count of Results	Count of Results
JC34064	AMGW-10D	AMGW-10D	20 Dec 2016	WG	N	53	52	16	21	10	22	1	2
JC34064	Field QC	TRIP BLANK	20 Dec 2016	WQ	TB	53							
JC34064	Field QC	TRIP BLANK	21 Dec 2016	WQ	TB	53							
JC34064	GAGW-02	GAGW-02	21 Dec 2016	WG	N	53	52	16	21	10	22	1	2
JC34064	GAGW-04D	GAGW-04D	20 Dec 2016	WG	N	53	52	16	21	10	22	1	2
JC34064	GAGW-05R	GAGW-05R	20 Dec 2016	WG	N	53	52	16	21	10	22	1	2
JC34064	GAGW-06I	GAGW-06I	21 Dec 2016	WG	N	53	52	16	21	10	22	1	2
JC34064	GAGW-08R	GAGW-08R	20 Dec 2016	WG	N	53	52	16	21	10	22	1	2
JC34064	GAGW-08R	GAGW-DUP	20 Dec 2016	WG	FD	53	52	16	21	10	22	1	

Notes:
The number of analytes reported for each method is provided in the count of results.
WQ = water quality control matrix
WG = groundwater
N = field sample
FD = field duplicate
TB = trip blank
FRACTION T, N = total

TABLE 1 - SUMMARY OF SAMPLES AND ANALYTICAL METHODS
DATA USABILITY SUMMARY REPORT
DECEMBER 2016 GROUNDWATER SAMPLING EVENT
REVIEW AVENUE GROUNDWATER MONITORING
LONG ISLAND CITY, NEW YORK

					Method	E353.2	RSK175	SM2320B	SM2340C	SM3500-Fe	SM4500-NH3	SM4500-NO2	SM5310B
					FRACTION	N	N	N	N	N	N	N	N
SDG	Location ID	Sample ID	Sample Date	Matrix	Sample Type	Count of Results	Count of Results	Count of Results	Count of Results	Count of Results	Count of Results	Count of Results	Count of Results
JC34064	AMGW-10D	AMGW-10D	20 Dec 2016	WG	N	1	3	1	1	1	1	2	1
JC34064	Field QC	TRIP BLANK	20 Dec 2016	WQ	TB								
JC34064	Field QC	TRIP BLANK	21 Dec 2016	WQ	TB								
JC34064	GAGW-02	GAGW-02	21 Dec 2016	WG	N	1	3	1	1	1	1	2	1
JC34064	GAGW-04D	GAGW-04D	20 Dec 2016	WG	N	1	3	1	1	1	1	2	1
JC34064	GAGW-05R	GAGW-05R	20 Dec 2016	WG	N	1	3	1	1	1	1	2	1
JC34064	GAGW-06I	GAGW-06I	21 Dec 2016	WG	N	1	3	1	1	1	1	2	1
JC34064	GAGW-08R	GAGW-08R	20 Dec 2016	WG	N	1	3	1	1	1	1	2	1
JC34064	GAGW-08R	GAGW-DUP	20 Dec 2016	WG	FD								

Notes:
The number of analytes reported for each method is provided in the cour
WQ = water quality control matrix
WG = groundwater
N = field sample
FD = field duplicate
TB = trip blank
FRACTION T, N = total

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
DECEMBER 2016 GROUNDWATER SAMPLING EVENT
REVIEW AVENUE GROUNDWATER MONITORING
LONG ISLAND CITY, NEW YORK

		Location ID	AMGW-10D		GAGW-02		GAGW-04D	
		Sample ID	AMGW-10D-2457742.833.42		GAGW-02-2457743.837.22		GAGW-04D-2457742.972.65	
		Sample Type	N		N		N	
		Sampe Date	12/20/2016		12/21/2016		12/20/2016	
		SDG	JC34064		JC34064		JC34064	
		Lab Sample ID	JC34064-1		JC34064-7		JC34064-4	
Method	**Parameter**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
E300	Chloride	mg/L	825		470		392	
E300	Sulfate	mg/L	168		115		121	
E353.2	Nitrogen, Nitrate-Nitrite	mg/L	0.1		9.3		8	
E353.2_4500NO2	Nitrate	mg/L	0.11	U	8.9		8	
RSK175	Ethane	ug/L	0.23	U	0.23	U	0.23	U
RSK175	Ethene	ug/L	0.31	U	0.31	U	0.31	U
RSK175	Methane	ug/L	0.28		0.19		0.11	U
SM2320B	Alkalinity, Total	mg/L	305		279		251	
SM2340C	Hardness	mg/L	782		646		681	
SM3500-Fe	Ferrous Iron	mg/L	0.59		0.2	UJ	0.2	U
SM4500-NH3-C	Ammonia	mg/L	0.33		0.2	U	0.2	U
SM4500-NO2	Nitrite	mg/L	0.01	U	0.36		0.01	U
SM5310B	Total Organic Carbon	mg/L	1.8	U	1.3		1.3	U
SW6010C	Aluminum	ug/L	200	U	354		275	
SW6010C	Antimony	ug/L	6	U	6	U	6	U
SW6010C	Arsenic	ug/L	4.1		3	U	3.1	
SW6010C	Barium	ug/L	200	U	200	U	200	U
SW6010C	Beryllium	ug/L	1	U	1	U	1	U
SW6010C	Cadmium	ug/L	3	U	3	U	3	U
SW6010C	Calcium	ug/L	194000		175000		168000	
SW6010C	Chromium	ug/L	10	U	11.6		27.1	
SW6010C	Cobalt	ug/L	50	U	50	U	50	U
SW6010C	Copper	ug/L	10	U	10	U	10	U
SW6010C	Iron	ug/L	1010		978	J	550	J
SW6010C	Lead	ug/L	3	U	3	U	3	U

Prepared by: MK 1/31/17
Checked by: JAR 1/31/17

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
DECEMBER 2016 GROUNDWATER SAMPLING EVENT
REVIEW AVENUE GROUNDWATER MONITORING
LONG ISLAND CITY, NEW YORK

		Location ID	AMGW-10D		GAGW-02		GAGW-04D	
		Sample ID	AMGW-10D-2457742.833.42		GAGW-02-2457743.837.22		GAGW-04D-2457742.972.65	
		Sample Type	N		N		N	
		Sampe Date	12/20/2016		12/21/2016		12/20/2016	
		SDG	JC34064		JC34064		JC34064	
		Lab Sample ID	JC34064-1		JC34064-7		JC34064-4	
Method	**Parameter**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
SW6010C	Magnesium	ug/L	66300		57700		63500	
SW6010C	Manganese	ug/L	956		1040		65.1	
SW6010C	Nickel	ug/L	10	U	10	U	10	U
SW6010C	Potassium	ug/L	10000	U	10000	U	10000	U
SW6010C	Selenium	ug/L	10	U	10	U	10	U
SW6010C	Silver	ug/L	10	U	10	U	10	U
SW6010C	Sodium	ug/L	349000		202000		138000	
SW6010C	Thallium	ug/L	2	U	2	U	2	U
SW6010C	Vanadium	ug/L	50	U	50	U	50	U
SW6010C	Zinc	ug/L	75.1	J	20	U	20	U
SW7470A	Mercury	ug/L	0.2	U	0.2	U	0.2	U
SW8081B	4,4-DDD	ug/L	0.01	U	0.01	U	0.011	U
SW8081B	4,4-DDE	ug/L	0.01	U	0.01	U	0.011	U
SW8081B	4,4-DDT	ug/L	0.01	U	0.01	U	0.011	U
SW8081B	Aldrin	ug/L	0.01	U	0.01	U	0.011	U
SW8081B	alpha-BHC	ug/L	0.01	U	0.01	U	0.011	U
SW8081B	alpha-Chlordane	ug/L	0.01	U	0.01	U	0.011	U
SW8081B	alpha-Endosulfan	ug/L	0.01	U	0.01	U	0.011	U
SW8081B	beta-BHC	ug/L	0.01	U	0.01	U	0.011	U
SW8081B	beta-Endosulfan	ug/L	0.01	U	0.01	U	0.011	U
SW8081B	delta-BHC	ug/L	0.01	U	0.01	U	0.011	U
SW8081B	Dieldrin	ug/L	0.01	U	0.01	U	0.011	U
SW8081B	Endosulfan Sulfate	ug/L	0.01	U	0.01	U	0.011	U
SW8081B	Endrin	ug/L	0.01	U	0.01	U	0.011	U
SW8081B	Endrin Aldehyde	ug/L	0.01	U	0.01	U	0.011	U

Prepared by: MK 1/31/17
Checked by: JAR 1/31/17

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
DECEMBER 2016 GROUNDWATER SAMPLING EVENT
REVIEW AVENUE GROUNDWATER MONITORING
LONG ISLAND CITY, NEW YORK

		Location ID	AMGW-10D		GAGW-02		GAGW-04D	
		Sample ID	AMGW-10D-2457742.833.42		GAGW-02-2457743.837.22		GAGW-04D-2457742.972.65	
		Sample Type	N		N		N	
		Sampe Date	12/20/2016		12/21/2016		12/20/2016	
		SDG	JC34064		JC34064		JC34064	
		Lab Sample ID	JC34064-1		JC34064-7		JC34064-4	
Method	**Parameter**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
SW8081B	Endrin Ketone	ug/L	0.01	U	0.01	U	0.011	U
SW8081B	gamma-BHC	ug/L	0.01	U	0.01	U	0.011	U
SW8081B	Heptachlor	ug/L	0.01	U	0.01	U	0.011	U
SW8081B	Heptachlor Epoxide	ug/L	0.01	U	0.01	U	0.011	U
SW8081B	Methoxychlor	ug/L	0.02	U	0.02	U	0.021	U
SW8081B	Toxaphene	ug/L	0.26	U	0.25	U	0.26	U
SW8081B	trans-Chlordane	ug/L	0.01	U	0.01	U	0.011	U
SW8082	Aroclor 1016	ug/L	0.51	U	0.5	U	0.53	U
SW8082	Aroclor 1221	ug/L	0.51	U	0.5	U	0.53	U
SW8082	Aroclor 1232	ug/L	0.51	U	0.5	U	0.53	U
SW8082	Aroclor 1242	ug/L	0.51	U	0.5	U	0.53	U
SW8082	Aroclor 1248	ug/L	0.51	U	0.5	U	0.53	U
SW8082	Aroclor 1254	ug/L	0.51	U	0.5	U	0.53	U
SW8082	Aroclor 1260	ug/L	0.51	U	0.5	U	0.53	U
SW8082	Aroclor 1262	ug/L	0.51	U	0.5	U	0.53	U
SW8082	Aroclor 1268	ug/L	0.51	U	0.5	U	0.53	U
SW8082	Polychlorinated Biphenyls	ug/L	0.51	U	0.5	U	0.53	U
SW8260C	1,1,1-Trichloroethane	ug/L	1	U	1	U	1	U
SW8260C	1,1,2,2-Tetrachloroethane	ug/L	1	U	1	U	1	U
SW8260C	1,1,2-Trichloroethane	ug/L	1	U	1	U	1	U
SW8260C	1,1-Dichloroethane	ug/L	0.44	J	1	U	1	U
SW8260C	1,1-Dichloroethene	ug/L	0.56	J	1	U	1	U
SW8260C	1,2,3-Trichlorobenzene	ug/L	1	U	1	U	1	U
SW8260C	1,2,4-Trichlorobenzene	ug/L	1	U	1	U	1	U
SW8260C	1,2-Dibromo-3-chloropropane	ug/L	2	U	2	U	2	U

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Checked by: JAR 1/31/17

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
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DECEMBER 2016 GROUNDWATER SAMPLING EVENT
REVIEW AVENUE GROUNDWATER MONITORING
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		Location ID	AMGW-10D		GAGW-02		GAGW-04D	
		Sample ID	AMGW-10D-2457742.833.42		GAGW-02-2457743.837.22		GAGW-04D-2457742.972.65	
		Sample Type	N		N		N	
		Sampe Date	12/20/2016		12/21/2016		12/20/2016	
		SDG	JC34064		JC34064		JC34064	
		Lab Sample ID	JC34064-1		JC34064-7		JC34064-4	
Method	**Parameter**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
SW8260C	1,2-Dibromoethane	ug/L	1	U	1	U	1	U
SW8260C	1,2-Dichlorobenzene	ug/L	1	U	1	U	1	U
SW8260C	1,2-Dichloroethane	ug/L	1.4		1	U	1	U
SW8260C	1,2-Dichloropropane	ug/L	1	U	1	U	1	U
SW8260C	1,3-Dichlorobenzene	ug/L	1	U	1	U	1	U
SW8260C	1,4-Dichlorobenzene	ug/L	1	U	1	U	1	U
SW8260C	1,4-Dioxane	ug/L	130	U	130	U	130	U
SW8260C	2-Butanone	ug/L	10	U	10	U	10	U
SW8260C	2-Hexanone	ug/L	5	U	5	U	5	U
SW8260C	4-Methyl-2-pentanone	ug/L	5	U	5	U	5	U
SW8260C	Acetone	ug/L	10	U	10	U	10	U
SW8260C	Benzene	ug/L	0.5	U	0.5	U	0.5	U
SW8260C	Bromochloromethane	ug/L	1	U	1	U	1	U
SW8260C	Bromodichloromethane	ug/L	1	U	1	U	1	U
SW8260C	Bromoform	ug/L	1	U	1	U	1	U
SW8260C	Bromomethane	ug/L	2	U	2	U	2	U
SW8260C	Carbon Disulfide	ug/L	2	U	2	U	2	U
SW8260C	Carbon Tetrachloride	ug/L	1	U	1	U	1	U
SW8260C	Chlorobenzene	ug/L	1	U	1	U	1	U
SW8260C	Chloroethane	ug/L	1	U	1	U	1	U
SW8260C	Chloroform	ug/L	1	U	1	U	0.42	J
SW8260C	Chloromethane	ug/L	1	UJ	1	U	1	UJ
SW8260C	cis-1,2-Dichloroethene	ug/L	15.2		1	U	1	U
SW8260C	cis-1,3-Dichloropropene	ug/L	1	U	1	U	1	U
SW8260C	Cyclohexane	ug/L	5	U	5	U	5	U

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TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
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REVIEW AVENUE GROUNDWATER MONITORING
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		Location ID	AMGW-10D		GAGW-02		GAGW-04D	
		Sample ID	AMGW-10D-2457742.833.42		GAGW-02-2457743.837.22		GAGW-04D-2457742.972.65	
		Sample Type	N		N		N	
		Sampe Date	12/20/2016		12/21/2016		12/20/2016	
		SDG	JC34064		JC34064		JC34064	
		Lab Sample ID	JC34064-1		JC34064-7		JC34064-4	
Method	**Parameter**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
SW8260C	Dibromochloromethane	ug/L	1	U	1	U	1	U
SW8260C	Dichlorodifluoromethane	ug/L	2	U	2	U	2	U
SW8260C	Ethylbenzene	ug/L	1	U	1	U	1	U
SW8260C	Freon 113	ug/L	5	U	5	U	5	U
SW8260C	Isopropylbenzene	ug/L	1	U	1	U	1	U
SW8260C	m,p-Xylenes	ug/L	1	U	1	U	1	U
SW8260C	Methyl Acetate	ug/L	5	U	5	U	5	U
SW8260C	Methyl Cyclohexane	ug/L	5	U	5	U	5	U
SW8260C	Methyl tert-Butyl Ether	ug/L	32		1	U	1	U
SW8260C	Methylene Chloride	ug/L	2	U	2	U	2	U
SW8260C	o-Xylene	ug/L	1	U	1	U	1	U
SW8260C	Styrene	ug/L	1	U	1	U	1	U
SW8260C	Tetrachloroethene	ug/L	0.4	J	1	U	14	
SW8260C	Toluene	ug/L	1	U	1	U	1	U
SW8260C	trans-1,2-Dichloroethene	ug/L	1.5		1	U	1	U
SW8260C	trans-1,3-Dichloropropene	ug/L	1	U	1	U	1	U
SW8260C	Trichloroethene	ug/L	26.5		1	U	0.76	J
SW8260C	Trichlorofluoromethane	ug/L	2	U	2	U	2	U
SW8260C	Vinyl Chloride	ug/L	0.69	J	1	U	1	U
SW8260C	Xylenes, Total	ug/L	1	U	1	U	1	U
SW8270D	1,2,4,5-Tetrachlorobenzene	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	1,4-Dioxane	ug/L	3.6	J	1.1	UJ	1.1	UJ
SW8270D	2,3,4,6-Tetrachlorophenol	ug/L	5.4	U	5.3	U	5.5	U
SW8270D	2,4,5-Trichlorophenol	ug/L	5.4	U	5.3	U	5.5	U
SW8270D	2,4,6-Trichlorophenol	ug/L	5.4	U	5.3	U	5.5	U

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DECEMBER 2016 GROUNDWATER SAMPLING EVENT
REVIEW AVENUE GROUNDWATER MONITORING
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		Location ID	AMGW-10D		GAGW-02		GAGW-04D	
		Sample ID	AMGW-10D-2457742.833.42		GAGW-02-2457743.837.22		GAGW-04D-2457742.972.65	
		Sample Type	N		N		N	
		Sampe Date	12/20/2016		12/21/2016		12/20/2016	
		SDG	JC34064		JC34064		JC34064	
		Lab Sample ID	JC34064-1		JC34064-7		JC34064-4	
Method	**Parameter**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
SW8270D	2,4-Dichlorophenol	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	2,4-Dimethylphenol	ug/L	5.4	U	5.3	UJ	5.5	U
SW8270D	2,4-Dinitrophenol	ug/L	11	U	11	U	11	U
SW8270D	2,4-Dinitrotoluene	ug/L	1.1	U	1.1	U	1.1	U
SW8270D	2,6-Dinitrotoluene	ug/L	1.1	U	1.1	U	1.1	U
SW8270D	2-Chloronaphthalene	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	2-Chlorophenol	ug/L	5.4	U	5.3	U	5.5	U
SW8270D	2-Methylnaphthalene	ug/L	1.1	U	1.1	U	1.1	U
SW8270D	2-Methylphenol	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	2-Nitroaniline	ug/L	5.4	U	5.3	U	5.5	U
SW8270D	2-Nitrophenol	ug/L	5.4	U	5.3	U	5.5	U
SW8270D	3,3'-Dichlorobenzidine	ug/L	2.2	UJ	2.1	R	2.2	UJ
SW8270D	3-Nitroaniline	ug/L	5.4	UJ	5.3	UJ	5.5	UJ
SW8270D	4,6-Dinitro-2-methylphenol	ug/L	5.4	U	5.3	U	5.5	U
SW8270D	4-Bromophenyl Phenyl Ether	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	4-Chloro-3-methylphenol	ug/L	5.4	U	5.3	U	5.5	U
SW8270D	4-Chloroaniline	ug/L	5.4	UJ	5.3	R	5.5	UJ
SW8270D	4-Chlorophenyl-phenylether	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	4-Methylphenol	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	4-Nitroaniline	ug/L	5.4	U	5.3	UJ	5.5	U
SW8270D	4-Nitrophenol	ug/L	11	U	11	U	11	U
SW8270D	Acetophenone	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	Atrazine	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	Benzaldehyde	ug/L	5.4	U	5.3	U	5.5	U
SW8270D	Biphenyl	ug/L	1.1	U	1.1	U	1.1	U

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		Location ID	AMGW-10D		GAGW-02		GAGW-04D	
		Sample ID	AMGW-10D-2457742.833.42		GAGW-02-2457743.837.22		GAGW-04D-2457742.972.65	
		Sample Type	N		N		N	
		Sampe Date	12/20/2016		12/21/2016		12/20/2016	
		SDG	JC34064		JC34064		JC34064	
		Lab Sample ID	JC34064-1		JC34064-7		JC34064-4	
Method	**Parameter**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
SW8270D	Bis(2-chloroethoxy)methane	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	Bis(2-chloroethyl) Ether	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	Bis(2-chloroisopropyl) Ether	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	Bis(2-ethylhexyl) Phthalate	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	Butylbenzyl Phthalate	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	Caprolactum	ug/L	2.2	UJ	2.1	UJ	2.2	UJ
SW8270D	Carbazole	ug/L	1.1	U	1.1	U	1.1	U
SW8270D	Dibenzofuran	ug/L	5.4	U	5.3	U	5.5	U
SW8270D	Diethyl Phthalate	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	Dimethyl Phthalate	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	Di-n-Butyl Phthalate	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	Di-n-octyl Phthalate	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	Hexachlorobenzene	ug/L	1.1	U	1.1	U	1.1	U
SW8270D	Hexachlorobutadiene	ug/L	1.1	UJ	1.1	UJ	1.1	UJ
SW8270D	Hexachlorocyclopentadiene	ug/L	11	U	11	UJ	11	U
SW8270D	Hexachloroethane	ug/L	2.2	UJ	2.1	U	2.2	UJ
SW8270D	Isophorone	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	Nitrobenzene	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	N-Nitroso-di-n-propylamine	ug/L	2.2	U	2.1	U	2.2	U
SW8270D	N-Nitrosodiphenylamine	ug/L	5.4	U	5.3	U	5.5	U
SW8270D	Pentachlorophenol	ug/L	4.3	U	4.3	U	4.4	U
SW8270D	Phenol	ug/L	2.2	UJ	2.1	U	2.2	UJ
SW8270D SIM	Acenaphthene	ug/L	0.11	U	0.11	U	0.11	U
SW8270D SIM	Acenaphthylene	ug/L	0.11	U	0.11	U	0.11	U
SW8270D SIM	Anthracene	ug/L	0.11	U	0.11	U	0.11	U

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		Location ID	AMGW-10D		GAGW-02		GAGW-04D	
		Sample ID	AMGW-10D-2457742.833.42		GAGW-02-2457743.837.22		GAGW-04D-2457742.972.65	
		Sample Type	N		N		N	
		Sampe Date	12/20/2016		12/21/2016		12/20/2016	
		SDG	JC34064		JC34064		JC34064	
		Lab Sample ID	JC34064-1		JC34064-7		JC34064-4	
Method	**Parameter**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
SW8270D SIM	Benzo[a]anthracene	ug/L	0.054	U	0.293		0.055	U
SW8270D SIM	Benzo[a]pyrene	ug/L	0.054	U	0.053	U	0.055	U
SW8270D SIM	Benzo[b]fluoranthene	ug/L	0.11	U	0.11	U	0.11	U
SW8270D SIM	Benzo[g,h,i]perylene	ug/L	0.11	U	0.11	U	0.11	U
SW8270D SIM	Benzo[k]fluoranthene	ug/L	0.11	U	0.11	U	0.11	U
SW8270D SIM	Chrysene	ug/L	0.11	U	0.151		0.11	U
SW8270D SIM	Dibenzo[a,h]anthracene	ug/L	0.11	U	0.11	U	0.11	U
SW8270D SIM	Fluoranthene	ug/L	0.11	U	0.199		0.11	U
SW8270D SIM	Fluorene	ug/L	0.11	U	0.11	U	0.11	U
SW8270D SIM	Indeno[1,2,3-cd]pyrene	ug/L	0.11	U	0.11	U	0.11	U
SW8270D SIM	Naphthalene	ug/L	0.11	U	0.11	U	0.11	U
SW8270D SIM	Phenanthrene	ug/L	0.11	U	0.11	U	0.11	U
SW8270D SIM	Pyrene	ug/L	0.11	U	0.925		0.11	U

Notes:
ug/L = microgram per liter
mg/L = milligram per liter
U = not detected
J = estimated value
R = result is rejected

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		Location ID	GAGW-05R		GAGW-06I		GAGW-08R	
		Sample ID	GAGW-05R-2457743.024.13		GAGW-06I-2457743.972.29		GAGW-08R-2457742.878.50	
		Sample Type	N		N		N	
		Sampe Date	12/20/2016		12/21/2016		12/20/2016	
		SDG	JC34064		JC34064		JC34064	
		Lab Sample ID	JC34064-5		JC34064-8		JC34064-2	
Method	**Parameter**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
E300	Chloride	mg/L	602		56.6		731	
E300	Sulfate	mg/L	105		14.5		211	
E353.2	Nitrogen, Nitrate-Nitrite	mg/L	6.2		0.1	U	6.9	
E353.2_4500NO2	Nitrate	mg/L	6.2		0.11	U	6.9	
RSK175	Ethane	ug/L	0.23	U	0.41		0.23	U
RSK175	Ethene	ug/L	0.31	U	0.31	U	0.31	U
RSK175	Methane	ug/L	0.37		6930		0.12	
SM2320B	Alkalinity, Total	mg/L	376		295		319	
SM2340C	Hardness	mg/L	606		283		788	
SM3500-Fe	Ferrous Iron	mg/L	0.2	U	13.4	J	3	
SM4500-NH3-C	Ammonia	mg/L	0.2	U	1.1		0.2	U
SM4500-NO2	Nitrite	mg/L	0.012		0.01	U	0.01	U
SM5310B	Total Organic Carbon	mg/L	1.3	U	9.1		1.6	U
SW6010C	Aluminum	ug/L	200	U	200	U	200	U
SW6010C	Antimony	ug/L	6	U	6	U	6	U
SW6010C	Arsenic	ug/L	3	U	7.9		8.6	
SW6010C	Barium	ug/L	200	U	207		200	U
SW6010C	Beryllium	ug/L	1	U	1	U	1	U
SW6010C	Cadmium	ug/L	3	U	3	U	3	U
SW6010C	Calcium	ug/L	182000		90400		214000	
SW6010C	Chromium	ug/L	10	U	10	U	10	U
SW6010C	Cobalt	ug/L	50	U	50	U	50	U
SW6010C	Copper	ug/L	10	U	10	U	10	U
SW6010C	Iron	ug/L	437	J	30900	J	4900	J
SW6010C	Lead	ug/L	3	U	3	U	3	U

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		Location ID	GAGW-05R		GAGW-06I		GAGW-08R	
		Sample ID	GAGW-05R-2457743.024.13		GAGW-06I-2457743.972.29		GAGW-08R-2457742.878.50	
		Sample Type	N		N		N	
		Sampe Date	12/20/2016		12/21/2016		12/20/2016	
		SDG	JC34064		JC34064		JC34064	
		Lab Sample ID	JC34064-5		JC34064-8		JC34064-2	
Method	**Parameter**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
SW6010C	Magnesium	ug/L	55900		20100		60800	
SW6010C	Manganese	ug/L	481		1530		199	
SW6010C	Nickel	ug/L	10	U	10	U	10	U
SW6010C	Potassium	ug/L	10000	U	10000	U	10000	U
SW6010C	Selenium	ug/L	10	U	10	U	10	U
SW6010C	Silver	ug/L	10	U	10	U	10	U
SW6010C	Sodium	ug/L	291000		36100		328000	
SW6010C	Thallium	ug/L	2	U	2	U	2	U
SW6010C	Vanadium	ug/L	50	U	50	U	50	U
SW6010C	Zinc	ug/L	20	U	20	U	20	U
SW7470A	Mercury	ug/L	0.2	U	0.2	U	0.2	U
SW8081B	4,4-DDD	ug/L	0.011	U	0.011	U	0.011	U
SW8081B	4,4-DDE	ug/L	0.011	U	0.011	U	0.011	U
SW8081B	4,4-DDT	ug/L	0.011	U	0.011	U	0.011	U
SW8081B	Aldrin	ug/L	0.011	U	0.011	U	0.011	U
SW8081B	alpha-BHC	ug/L	0.011	U	0.011	U	0.011	U
SW8081B	alpha-Chlordane	ug/L	0.011	U	0.011	U	0.011	U
SW8081B	alpha-Endosulfan	ug/L	0.011	U	0.011	U	0.011	U
SW8081B	beta-BHC	ug/L	0.011	U	0.011	U	0.011	U
SW8081B	beta-Endosulfan	ug/L	0.011	U	0.011	U	0.011	U
SW8081B	delta-BHC	ug/L	0.011	U	0.011	U	0.011	U
SW8081B	Dieldrin	ug/L	0.011	U	0.011	U	0.011	U
SW8081B	Endosulfan Sulfate	ug/L	0.011	U	0.011	U	0.011	U
SW8081B	Endrin	ug/L	0.011	U	0.011	U	0.011	U
SW8081B	Endrin Aldehyde	ug/L	0.011	U	0.011	U	0.011	U

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		Location ID	GAGW-05R		GAGW-06I		GAGW-08R	
		Sample ID	GAGW-05R-2457743.024.13		GAGW-06I-2457743.972.29		GAGW-08R-2457742.878.50	
		Sample Type	N		N		N	
		Sampe Date	12/20/2016		12/21/2016		12/20/2016	
		SDG	JC34064		JC34064		JC34064	
		Lab Sample ID	JC34064-5		JC34064-8		JC34064-2	
Method	**Parameter**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
SW8081B	Endrin Ketone	ug/L	0.011	U	0.011	U	0.011	U
SW8081B	gamma-BHC	ug/L	0.011	U	0.011	U	0.011	U
SW8081B	Heptachlor	ug/L	0.011	U	0.011	U	0.011	U
SW8081B	Heptachlor Epoxide	ug/L	0.011	U	0.011	U	0.011	U
SW8081B	Methoxychlor	ug/L	0.021	U	0.022	U	0.022	U
SW8081B	Toxaphene	ug/L	0.26	U	0.28	U	0.27	U
SW8081B	trans-Chlordane	ug/L	0.011	U	0.011	U	0.011	U
SW8082	Aroclor 1016	ug/L	0.53	U	0.56	U	0.54	U
SW8082	Aroclor 1221	ug/L	0.53	U	0.56	U	0.54	U
SW8082	Aroclor 1232	ug/L	0.53	U	0.56	U	0.54	U
SW8082	Aroclor 1242	ug/L	0.53	U	0.56	U	0.54	U
SW8082	Aroclor 1248	ug/L	0.53	U	0.56	U	0.54	U
SW8082	Aroclor 1254	ug/L	0.53	U	0.56	U	0.54	U
SW8082	Aroclor 1260	ug/L	0.53	U	0.56	U	0.54	U
SW8082	Aroclor 1262	ug/L	0.53	U	0.56	U	0.54	U
SW8082	Aroclor 1268	ug/L	0.53	U	0.56	U	0.54	U
SW8082	Polychlorinated Biphenyls	ug/L	0.53	U	0.56	U	0.54	U
SW8260C	1,1,1-Trichloroethane	ug/L	1	U	1	U	1	U
SW8260C	1,1,2,2-Tetrachloroethane	ug/L	1	U	1	U	1	U
SW8260C	1,1,2-Trichloroethane	ug/L	1	U	1	U	1	U
SW8260C	1,1-Dichloroethane	ug/L	1	U	1.1		1	U
SW8260C	1,1-Dichloroethene	ug/L	1	U	1	U	1	U
SW8260C	1,2,3-Trichlorobenzene	ug/L	1	U	1	U	1	U
SW8260C	1,2,4-Trichlorobenzene	ug/L	1	U	1	U	1	U
SW8260C	1,2-Dibromo-3-chloropropane	ug/L	2	U	2	U	2	U

Prepared by: MK 1/31/17
Checked by: JAR 1/31/17

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
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DECEMBER 2016 GROUNDWATER SAMPLING EVENT
REVIEW AVENUE GROUNDWATER MONITORING
LONG ISLAND CITY, NEW YORK

		Location ID	GAGW-05R		GAGW-06I		GAGW-08R	
		Sample ID	GAGW-05R-2457743.024.13		GAGW-06I-2457743.972.29		GAGW-08R-2457742.878.50	
		Sample Type	N		N		N	
		Sampe Date	12/20/2016		12/21/2016		12/20/2016	
		SDG	JC34064		JC34064		JC34064	
		Lab Sample ID	JC34064-5		JC34064-8		JC34064-2	
Method	**Parameter**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
SW8260C	1,2-Dibromoethane	ug/L	1	U	1	U	1	U
SW8260C	1,2-Dichlorobenzene	ug/L	1	U	1	U	1	U
SW8260C	1,2-Dichloroethane	ug/L	1	U	1	U	1	U
SW8260C	1,2-Dichloropropane	ug/L	1	U	1	U	1	U
SW8260C	1,3-Dichlorobenzene	ug/L	1	U	1	U	1	U
SW8260C	1,4-Dichlorobenzene	ug/L	1	U	1	U	1	U
SW8260C	1,4-Dioxane	ug/L	130	U	130	U	130	U
SW8260C	2-Butanone	ug/L	10	U	10	U	10	U
SW8260C	2-Hexanone	ug/L	5	U	5	U	5	U
SW8260C	4-Methyl-2-pentanone	ug/L	5	U	5	U	5	U
SW8260C	Acetone	ug/L	10	U	10	U	10	U
SW8260C	Benzene	ug/L	0.5	U	1.9		0.5	U
SW8260C	Bromochloromethane	ug/L	1	U	1	U	1	U
SW8260C	Bromodichloromethane	ug/L	1	U	1	U	1	U
SW8260C	Bromoform	ug/L	1	U	1	U	1	U
SW8260C	Bromomethane	ug/L	2	U	2	U	2	U
SW8260C	Carbon Disulfide	ug/L	2	U	2	U	2	U
SW8260C	Carbon Tetrachloride	ug/L	1	U	1	U	1	U
SW8260C	Chlorobenzene	ug/L	1	U	1	U	1	U
SW8260C	Chloroethane	ug/L	1	U	1	U	1	U
SW8260C	Chloroform	ug/L	1	U	1	U	1	U
SW8260C	Chloromethane	ug/L	1	UJ	1	U	1	UJ
SW8260C	cis-1,2-Dichloroethene	ug/L	1	U	3.9		1.5	
SW8260C	cis-1,3-Dichloropropene	ug/L	1	U	1	U	1	U
SW8260C	Cyclohexane	ug/L	5	U	15		5	U

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TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
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DECEMBER 2016 GROUNDWATER SAMPLING EVENT
REVIEW AVENUE GROUNDWATER MONITORING
LONG ISLAND CITY, NEW YORK

		Location ID	GAGW-05R		GAGW-06I		GAGW-08R	
		Sample ID	GAGW-05R-2457743.024.13		GAGW-06I-2457743.972.29		GAGW-08R-2457742.878.50	
		Sample Type	N		N		N	
		Sampe Date	12/20/2016		12/21/2016		12/20/2016	
		SDG	JC34064		JC34064		JC34064	
		Lab Sample ID	JC34064-5		JC34064-8		JC34064-2	
Method	**Parameter**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
SW8260C	Dibromochloromethane	ug/L	1	U	1	U	1	U
SW8260C	Dichlorodifluoromethane	ug/L	2	U	2	U	2	U
SW8260C	Ethylbenzene	ug/L	1	U	1	U	1	U
SW8260C	Freon 113	ug/L	5	U	5	U	5	U
SW8260C	Isopropylbenzene	ug/L	1	U	1.7		1	U
SW8260C	m,p-Xylenes	ug/L	1	U	1	U	1	U
SW8260C	Methyl Acetate	ug/L	5	U	5	U	5	U
SW8260C	Methyl Cyclohexane	ug/L	5	U	18.4		5	U
SW8260C	Methyl tert-Butyl Ether	ug/L	0.83	J	6.8		3.6	
SW8260C	Methylene Chloride	ug/L	2	U	2	U	2	U
SW8260C	o-Xylene	ug/L	1	U	0.61	J	1	U
SW8260C	Styrene	ug/L	1	U	1	U	1	U
SW8260C	Tetrachloroethene	ug/L	1	U	1	U	1	U
SW8260C	Toluene	ug/L	1	U	0.54	J	1	U
SW8260C	trans-1,2-Dichloroethene	ug/L	1	U	1	U	1	U
SW8260C	trans-1,3-Dichloropropene	ug/L	1	U	1	U	1	U
SW8260C	Trichloroethene	ug/L	0.63	J	1	U	8	
SW8260C	Trichlorofluoromethane	ug/L	2	U	2	U	2	U
SW8260C	Vinyl Chloride	ug/L	1	U	0.83	J	1	U
SW8260C	Xylenes, Total	ug/L	1	U	0.61	J	1	U
SW8270D	1,2,4,5-Tetrachlorobenzene	ug/L	2	U	2	U	2.2	U
SW8270D	1,4-Dioxane	ug/L	1	UJ	1	UJ	1.1	UJ
SW8270D	2,3,4,6-Tetrachlorophenol	ug/L	5	U	5	U	5.4	U
SW8270D	2,4,5-Trichlorophenol	ug/L	5	U	5	U	5.4	U
SW8270D	2,4,6-Trichlorophenol	ug/L	5	U	5	U	5.4	U

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TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
DECEMBER 2016 GROUNDWATER SAMPLING EVENT
REVIEW AVENUE GROUNDWATER MONITORING
LONG ISLAND CITY, NEW YORK

		Location ID	GAGW-05R		GAGW-06I		GAGW-08R	
		Sample ID	GAGW-05R-2457743.024.13		GAGW-06I-2457743.972.29		GAGW-08R-2457742.878.50	
		Sample Type	N		N		N	
		Sampe Date	12/20/2016		12/21/2016		12/20/2016	
		SDG	JC34064		JC34064		JC34064	
		Lab Sample ID	JC34064-5		JC34064-8		JC34064-2	
Method	**Parameter**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
SW8270D	2,4-Dichlorophenol	ug/L	2	U	2	U	2.2	U
SW8270D	2,4-Dimethylphenol	ug/L	5	U	5	U	5.4	U
SW8270D	2,4-Dinitrophenol	ug/L	10	U	10	U	11	U
SW8270D	2,4-Dinitrotoluene	ug/L	1	U	1	U	1.1	U
SW8270D	2,6-Dinitrotoluene	ug/L	1	U	1	U	1.1	U
SW8270D	2-Chloronaphthalene	ug/L	2	U	2	U	2.2	U
SW8270D	2-Chlorophenol	ug/L	5	U	5	U	5.4	U
SW8270D	2-Methylnaphthalene	ug/L	1	U	1	U	1.1	U
SW8270D	2-Methylphenol	ug/L	2	U	2	U	2.2	U
SW8270D	2-Nitroaniline	ug/L	5	U	5	U	5.4	U
SW8270D	2-Nitrophenol	ug/L	5	U	5	U	5.4	U
SW8270D	3,3'-Dichlorobenzidine	ug/L	2	UJ	2	U	2.2	UJ
SW8270D	3-Nitroaniline	ug/L	5	UJ	5	U	5.4	UJ
SW8270D	4,6-Dinitro-2-methylphenol	ug/L	5	U	5	U	5.4	U
SW8270D	4-Bromophenyl Phenyl Ether	ug/L	2	U	2	U	2.2	U
SW8270D	4-Chloro-3-methylphenol	ug/L	5	U	5	U	5.4	U
SW8270D	4-Chloroaniline	ug/L	5	UJ	5	UJ	5.4	UJ
SW8270D	4-Chlorophenyl-phenylether	ug/L	2	U	2	U	2.2	U
SW8270D	4-Methylphenol	ug/L	2	U	2	U	2.2	U
SW8270D	4-Nitroaniline	ug/L	5	U	5	U	5.4	U
SW8270D	4-Nitrophenol	ug/L	10	U	10	U	11	U
SW8270D	Acetophenone	ug/L	2	U	2	U	2.2	U
SW8270D	Atrazine	ug/L	2	U	2	U	2.2	U
SW8270D	Benzaldehyde	ug/L	5	U	5	U	5.4	U
SW8270D	Biphenyl	ug/L	1	U	1	U	1.1	U

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REVIEW AVENUE GROUNDWATER MONITORING
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		Location ID	GAGW-05R		GAGW-06I		GAGW-08R	
		Sample ID	GAGW-05R-2457743.024.13		GAGW-06I-2457743.972.29		GAGW-08R-2457742.878.50	
		Sample Type	N		N		N	
		Sampe Date	12/20/2016		12/21/2016		12/20/2016	
		SDG	JC34064		JC34064		JC34064	
		Lab Sample ID	JC34064-5		JC34064-8		JC34064-2	
Method	**Parameter**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
SW8270D	Bis(2-chloroethoxy)methane	ug/L	2	U	2	U	2.2	U
SW8270D	Bis(2-chloroethyl) Ether	ug/L	2	U	2	U	2.2	U
SW8270D	Bis(2-chloroisopropyl) Ether	ug/L	2	U	2	U	2.2	U
SW8270D	Bis(2-ethylhexyl) Phthalate	ug/L	2	U	2	U	2.2	U
SW8270D	Butylbenzyl Phthalate	ug/L	2	U	2	U	2.2	U
SW8270D	Caprolactum	ug/L	2	UJ	2	UJ	2.2	UJ
SW8270D	Carbazole	ug/L	1	U	1	U	1.1	U
SW8270D	Dibenzofuran	ug/L	5	U	5	U	5.4	U
SW8270D	Diethyl Phthalate	ug/L	2	U	2	U	2.2	U
SW8270D	Dimethyl Phthalate	ug/L	2	U	2	U	2.2	U
SW8270D	Di-n-Butyl Phthalate	ug/L	2	U	2	U	2.2	U
SW8270D	Di-n-octyl Phthalate	ug/L	2	U	2	U	2.2	U
SW8270D	Hexachlorobenzene	ug/L	1	U	1	U	1.1	U
SW8270D	Hexachlorobutadiene	ug/L	1	UJ	1	UJ	1.1	UJ
SW8270D	Hexachlorocyclopentadiene	ug/L	10	U	10	UJ	11	U
SW8270D	Hexachloroethane	ug/L	2	UJ	2	U	2.2	UJ
SW8270D	Isophorone	ug/L	2	U	2	U	2.2	U
SW8270D	Nitrobenzene	ug/L	2	U	2	U	2.2	U
SW8270D	N-Nitroso-di-n-propylamine	ug/L	2	U	2	U	2.2	U
SW8270D	N-Nitrosodiphenylamine	ug/L	5	U	5	U	5.4	U
SW8270D	Pentachlorophenol	ug/L	4	U	4	U	4.3	U
SW8270D	Phenol	ug/L	2	UJ	2	U	2.2	UJ
SW8270D SIM	Acenaphthene	ug/L	0.1	U	1.4		0.11	U
SW8270D SIM	Acenaphthylene	ug/L	0.1	U	0.1	U	0.11	U
SW8270D SIM	Anthracene	ug/L	0.1	U	0.576		0.11	U

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REVIEW AVENUE GROUNDWATER MONITORING
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		Location ID	GAGW-05R		GAGW-06I		GAGW-08R	
		Sample ID	GAGW-05R-2457743.024.13		GAGW-06I-2457743.972.29		GAGW-08R-2457742.878.50	
		Sample Type	N		N		N	
		Sampe Date	12/20/2016		12/21/2016		12/20/2016	
		SDG	JC34064		JC34064		JC34064	
		Lab Sample ID	JC34064-5		JC34064-8		JC34064-2	
Method	**Parameter**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
SW8270D SIM	Benzo[a]anthracene	ug/L	0.05	U	0.224		0.054	U
SW8270D SIM	Benzo[a]pyrene	ug/L	0.05	U	0.05	U	0.054	U
SW8270D SIM	Benzo[b]fluoranthene	ug/L	0.1	U	0.1	U	0.11	U
SW8270D SIM	Benzo[g,h,i]perylene	ug/L	0.1	U	0.1	U	0.11	U
SW8270D SIM	Benzo[k]fluoranthene	ug/L	0.1	U	0.1	U	0.11	U
SW8270D SIM	Chrysene	ug/L	0.1	U	0.116		0.11	U
SW8270D SIM	Dibenzo[a,h]anthracene	ug/L	0.1	U	0.1	U	0.11	U
SW8270D SIM	Fluoranthene	ug/L	0.1	U	0.15		0.11	U
SW8270D SIM	Fluorene	ug/L	0.1	U	0.497		0.11	U
SW8270D SIM	Indeno[1,2,3-cd]pyrene	ug/L	0.1	U	0.1	U	0.11	U
SW8270D SIM	Naphthalene	ug/L	0.1	U	0.1	U	0.11	U
SW8270D SIM	Phenanthrene	ug/L	0.1	U	0.354		0.11	U
SW8270D SIM	Pyrene	ug/L	0.1	U	0.491		0.11	U

Notes:
ug/L = microgram per liter
mg/L = milligram per liter
U = not detected
J = estimated value
R = result is rejected

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		Location ID	GAGW-08R	
		Sample ID	GAGW-DUP-2457742.878.58	
		Sample Type	FD	
		Sampe Date	12/20/2016	
		SDG	JC34064	
		Lab Sample ID	JC34064-3	
Method	**Parameter**	**Unit**	**Result**	**Q**
E300	Chloride	mg/L		
E300	Sulfate	mg/L		
E353.2	Nitrogen, Nitrate-Nitrite	mg/L		
E353.2_4500NO2	Nitrate	mg/L		
RSK175	Ethane	ug/L		
RSK175	Ethene	ug/L		
RSK175	Methane	ug/L		
SM2320B	Alkalinity, Total	mg/L		
SM2340C	Hardness	mg/L		
SM3500-Fe	Ferrous Iron	mg/L		
SM4500-NH3-C	Ammonia	mg/L		
SM4500-NO2	Nitrite	mg/L		
SM5310B	Total Organic Carbon	mg/L		
SW6010C	Aluminum	ug/L	200	U
SW6010C	Antimony	ug/L	6	U
SW6010C	Arsenic	ug/L	8.4	
SW6010C	Barium	ug/L	200	U
SW6010C	Beryllium	ug/L	1	U
SW6010C	Cadmium	ug/L	3	U
SW6010C	Calcium	ug/L	230000	
SW6010C	Chromium	ug/L	10	U
SW6010C	Cobalt	ug/L	50	U
SW6010C	Copper	ug/L	10	U
SW6010C	Iron	ug/L	3640	J
SW6010C	Lead	ug/L	3	U

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		Location ID	GAGW-08R	
		Sample ID	GAGW-DUP-2457742.878.58	
		Sample Type	FD	
		Sampe Date	12/20/2016	
		SDG	JC34064	
		Lab Sample ID	JC34064-3	
Method	**Parameter**	**Unit**	**Result**	**Q**
SW6010C	Magnesium	ug/L	66500	
SW6010C	Manganese	ug/L	204	
SW6010C	Nickel	ug/L	10	U
SW6010C	Potassium	ug/L	10000	U
SW6010C	Selenium	ug/L	10	U
SW6010C	Silver	ug/L	10	U
SW6010C	Sodium	ug/L	327000	
SW6010C	Thallium	ug/L	2	U
SW6010C	Vanadium	ug/L	50	U
SW6010C	Zinc	ug/L	20	U
SW7470A	Mercury	ug/L	0.2	U
SW8081B	4,4-DDD	ug/L	0.011	U
SW8081B	4,4-DDE	ug/L	0.011	U
SW8081B	4,4-DDT	ug/L	0.011	U
SW8081B	Aldrin	ug/L	0.011	U
SW8081B	alpha-BHC	ug/L	0.011	U
SW8081B	alpha-Chlordane	ug/L	0.011	U
SW8081B	alpha-Endosulfan	ug/L	0.011	U
SW8081B	beta-BHC	ug/L	0.011	U
SW8081B	beta-Endosulfan	ug/L	0.011	U
SW8081B	delta-BHC	ug/L	0.011	U
SW8081B	Dieldrin	ug/L	0.011	U
SW8081B	Endosulfan Sulfate	ug/L	0.011	U
SW8081B	Endrin	ug/L	0.011	U
SW8081B	Endrin Aldehyde	ug/L	0.011	U

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		Location ID	GAGW-08R	
		Sample ID	GAGW-DUP-2457742.878.58	
		Sample Type	FD	
		Sampe Date	12/20/2016	
		SDG	JC34064	
		Lab Sample ID	JC34064-3	
Method	**Parameter**	**Unit**	**Result**	**Q**
SW8081B	Endrin Ketone	ug/L	0.011	U
SW8081B	gamma-BHC	ug/L	0.011	U
SW8081B	Heptachlor	ug/L	0.011	U
SW8081B	Heptachlor Epoxide	ug/L	0.011	U
SW8081B	Methoxychlor	ug/L	0.022	U
SW8081B	Toxaphene	ug/L	0.28	U
SW8081B	trans-Chlordane	ug/L	0.011	U
SW8082	Aroclor 1016	ug/L	0.56	U
SW8082	Aroclor 1221	ug/L	0.56	U
SW8082	Aroclor 1232	ug/L	0.56	U
SW8082	Aroclor 1242	ug/L	0.56	U
SW8082	Aroclor 1248	ug/L	0.56	U
SW8082	Aroclor 1254	ug/L	0.56	U
SW8082	Aroclor 1260	ug/L	0.56	U
SW8082	Aroclor 1262	ug/L	0.56	U
SW8082	Aroclor 1268	ug/L	0.56	U
SW8082	Polychlorinated Biphenyls	ug/L	0.56	U
SW8260C	1,1,1-Trichloroethane	ug/L	1	U
SW8260C	1,1,2,2-Tetrachloroethane	ug/L	1	U
SW8260C	1,1,2-Trichloroethane	ug/L	1	U
SW8260C	1,1-Dichloroethane	ug/L	1	U
SW8260C	1,1-Dichloroethene	ug/L	1	U
SW8260C	1,2,3-Trichlorobenzene	ug/L	1	U
SW8260C	1,2,4-Trichlorobenzene	ug/L	1	U
SW8260C	1,2-Dibromo-3-chloropropane	ug/L	2	U

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REVIEW AVENUE GROUNDWATER MONITORING
LONG ISLAND CITY, NEW YORK

		Location ID	GAGW-08R	
		Sample ID	GAGW-DUP-2457742.878.58	
		Sample Type	FD	
		Sampe Date	12/20/2016	
		SDG	JC34064	
		Lab Sample ID	JC34064-3	
Method	**Parameter**	**Unit**	**Result**	**Q**
SW8260C	1,2-Dibromoethane	ug/L	1	U
SW8260C	1,2-Dichlorobenzene	ug/L	1	U
SW8260C	1,2-Dichloroethane	ug/L	1	U
SW8260C	1,2-Dichloropropane	ug/L	1	U
SW8260C	1,3-Dichlorobenzene	ug/L	1	U
SW8260C	1,4-Dichlorobenzene	ug/L	1	U
SW8260C	1,4-Dioxane	ug/L	130	U
SW8260C	2-Butanone	ug/L	10	U
SW8260C	2-Hexanone	ug/L	5	U
SW8260C	4-Methyl-2-pentanone	ug/L	5	U
SW8260C	Acetone	ug/L	10	U
SW8260C	Benzene	ug/L	0.5	U
SW8260C	Bromochloromethane	ug/L	1	U
SW8260C	Bromodichloromethane	ug/L	1	U
SW8260C	Bromoform	ug/L	1	U
SW8260C	Bromomethane	ug/L	2	U
SW8260C	Carbon Disulfide	ug/L	2	U
SW8260C	Carbon Tetrachloride	ug/L	1	U
SW8260C	Chlorobenzene	ug/L	1	U
SW8260C	Chloroethane	ug/L	1	U
SW8260C	Chloroform	ug/L	1	U
SW8260C	Chloromethane	ug/L	1	UJ
SW8260C	cis-1,2-Dichloroethene	ug/L	1.7	
SW8260C	cis-1,3-Dichloropropene	ug/L	1	U
SW8260C	Cyclohexane	ug/L	5	U

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Checked by: JAR 1/31/17

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
DECEMBER 2016 GROUNDWATER SAMPLING EVENT
REVIEW AVENUE GROUNDWATER MONITORING
LONG ISLAND CITY, NEW YORK

		Location ID	GAGW-08R	
		Sample ID	GAGW-DUP-2457742.878.58	
		Sample Type	FD	
		Sampe Date	12/20/2016	
		SDG	JC34064	
		Lab Sample ID	JC34064-3	
Method	**Parameter**	**Unit**	**Result**	**Q**
SW8260C	Dibromochloromethane	ug/L	1	U
SW8260C	Dichlorodifluoromethane	ug/L	2	U
SW8260C	Ethylbenzene	ug/L	1	U
SW8260C	Freon 113	ug/L	5	U
SW8260C	Isopropylbenzene	ug/L	1	U
SW8260C	m,p-Xylenes	ug/L	1	U
SW8260C	Methyl Acetate	ug/L	5	U
SW8260C	Methyl Cyclohexane	ug/L	5	U
SW8260C	Methyl tert-Butyl Ether	ug/L	3.9	
SW8260C	Methylene Chloride	ug/L	2	U
SW8260C	o-Xylene	ug/L	1	U
SW8260C	Styrene	ug/L	1	U
SW8260C	Tetrachloroethene	ug/L	1	U
SW8260C	Toluene	ug/L	1	U
SW8260C	trans-1,2-Dichloroethene	ug/L	1	U
SW8260C	trans-1,3-Dichloropropene	ug/L	1	U
SW8260C	Trichloroethene	ug/L	8.1	
SW8260C	Trichlorofluoromethane	ug/L	2	U
SW8260C	Vinyl Chloride	ug/L	1	U
SW8260C	Xylenes, Total	ug/L	1	U
SW8270D	1,2,4,5-Tetrachlorobenzene	ug/L	2.2	U
SW8270D	1,4-Dioxane	ug/L	1.1	UJ
SW8270D	2,3,4,6-Tetrachlorophenol	ug/L	5.5	U
SW8270D	2,4,5-Trichlorophenol	ug/L	5.5	U
SW8270D	2,4,6-Trichlorophenol	ug/L	5.5	U

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LONG ISLAND CITY, NEW YORK

		Location ID	GAGW-08R	
		Sample ID	GAGW-DUP-2457742.878.58	
		Sample Type	FD	
		Sampe Date	12/20/2016	
		SDG	JC34064	
		Lab Sample ID	JC34064-3	
Method	**Parameter**	**Unit**	**Result**	**Q**
SW8270D	2,4-Dichlorophenol	ug/L	2.2	U
SW8270D	2,4-Dimethylphenol	ug/L	5.5	U
SW8270D	2,4-Dinitrophenol	ug/L	11	U
SW8270D	2,4-Dinitrotoluene	ug/L	1.1	U
SW8270D	2,6-Dinitrotoluene	ug/L	1.1	U
SW8270D	2-Chloronaphthalene	ug/L	2.2	U
SW8270D	2-Chlorophenol	ug/L	5.5	U
SW8270D	2-Methylnaphthalene	ug/L	1.1	U
SW8270D	2-Methylphenol	ug/L	2.2	U
SW8270D	2-Nitroaniline	ug/L	5.5	U
SW8270D	2-Nitrophenol	ug/L	5.5	U
SW8270D	3,3'-Dichlorobenzidine	ug/L	2.2	UJ
SW8270D	3-Nitroaniline	ug/L	5.5	UJ
SW8270D	4,6-Dinitro-2-methylphenol	ug/L	5.5	U
SW8270D	4-Bromophenyl Phenyl Ether	ug/L	2.2	U
SW8270D	4-Chloro-3-methylphenol	ug/L	5.5	U
SW8270D	4-Chloroaniline	ug/L	5.5	UJ
SW8270D	4-Chlorophenyl-phenylether	ug/L	2.2	U
SW8270D	4-Methylphenol	ug/L	2.2	U
SW8270D	4-Nitroaniline	ug/L	5.5	U
SW8270D	4-Nitrophenol	ug/L	11	U
SW8270D	Acetophenone	ug/L	2.2	U
SW8270D	Atrazine	ug/L	2.2	U
SW8270D	Benzaldehyde	ug/L	5.5	U
SW8270D	Biphenyl	ug/L	1.1	U

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		Location ID	GAGW-08R	
		Sample ID	GAGW-DUP-2457742.878.58	
		Sample Type	FD	
		Sampe Date	12/20/2016	
		SDG	JC34064	
		Lab Sample ID	JC34064-3	
Method	**Parameter**	**Unit**	**Result**	**Q**
SW8270D	Bis(2-chloroethoxy)methane	ug/L	2.2	U
SW8270D	Bis(2-chloroethyl) Ether	ug/L	2.2	U
SW8270D	Bis(2-chloroisopropyl) Ether	ug/L	2.2	U
SW8270D	Bis(2-ethylhexyl) Phthalate	ug/L	2.2	U
SW8270D	Butylbenzyl Phthalate	ug/L	2.2	U
SW8270D	Caprolactum	ug/L	2.2	UJ
SW8270D	Carbazole	ug/L	1.1	U
SW8270D	Dibenzofuran	ug/L	5.5	U
SW8270D	Diethyl Phthalate	ug/L	2.2	U
SW8270D	Dimethyl Phthalate	ug/L	2.2	U
SW8270D	Di-n-Butyl Phthalate	ug/L	2.2	U
SW8270D	Di-n-octyl Phthalate	ug/L	2.2	U
SW8270D	Hexachlorobenzene	ug/L	1.1	U
SW8270D	Hexachlorobutadiene	ug/L	1.1	UJ
SW8270D	Hexachlorocyclopentadiene	ug/L	11	U
SW8270D	Hexachloroethane	ug/L	2.2	UJ
SW8270D	Isophorone	ug/L	2.2	U
SW8270D	Nitrobenzene	ug/L	2.2	U
SW8270D	N-Nitroso-di-n-propylamine	ug/L	2.2	U
SW8270D	N-Nitrosodiphenylamine	ug/L	5.5	U
SW8270D	Pentachlorophenol	ug/L	4.4	U
SW8270D	Phenol	ug/L	2.2	UJ
SW8270D SIM	Acenaphthene	ug/L	0.11	U
SW8270D SIM	Acenaphthylene	ug/L	0.11	U
SW8270D SIM	Anthracene	ug/L	0.11	U

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LONG ISLAND CITY, NEW YORK

		Location ID	GAGW-08R	
		Sample ID	GAGW-DUP-2457742.878.58	
		Sample Type	FD	
		Sampe Date	12/20/2016	
		SDG	JC34064	
		Lab Sample ID	JC34064-3	
Method	**Parameter**	**Unit**	**Result**	**Q**
SW8270D SIM	Benzo[a]anthracene	ug/L	0.055	U
SW8270D SIM	Benzo[a]pyrene	ug/L	0.055	U
SW8270D SIM	Benzo[b]fluoranthene	ug/L	0.11	U
SW8270D SIM	Benzo[g,h,i]perylene	ug/L	0.11	U
SW8270D SIM	Benzo[k]fluoranthene	ug/L	0.11	U
SW8270D SIM	Chrysene	ug/L	0.11	U
SW8270D SIM	Dibenzo[a,h]anthracene	ug/L	0.11	U
SW8270D SIM	Fluoranthene	ug/L	0.11	U
SW8270D SIM	Fluorene	ug/L	0.11	U
SW8270D SIM	Indeno[1,2,3-cd]pyrene	ug/L	0.11	U
SW8270D SIM	Naphthalene	ug/L	0.11	U
SW8270D SIM	Phenanthrene	ug/L	0.11	U
SW8270D SIM	Pyrene	ug/L	0.11	U

Notes:
ug/L = microgram per liter
mg/L = milligram per liter
U = not detected
J = estimated value
R = result is rejected

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TABLE 3 - SUMMARY OF QUALIFICATION ACTIONS
DATA USABILITY SUMMARY REPORT
DECEMBER 2016 GROUNDWATER SAMPLING EVENT
REVIEW AVENUE GROUNDWATER MONITORING
LONG ISLAND CITY, NEW YORK

SDG	Method	Location	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Final Result	Final Qualifier	Validation Reason Code	Units
JC34064	SM5310B	AMGW-10D	AMGW-10D-2457742.833.42	Total Organic Carbon	1.8		1.8	U	BL1	mg/L
JC34064	SW6010C	AMGW-10D	AMGW-10D-2457742.833.42	Zinc	75.1		75.1	J	SD	ug/L
JC34064	SW8260C	AMGW-10D	AMGW-10D-2457742.833.42	Chloromethane	1	U	1	UJ	LCS-L	ug/L
JC34064	SW8270D	AMGW-10D	AMGW-10D-2457742.833.42	Caprolactum	2.2	U	2.2	UJ	LCS-L	ug/L
JC34064	SW8270D	AMGW-10D	AMGW-10D-2457742.833.42	4-Chloroaniline	5.4	U	5.4	UJ	LCS-L	ug/L
JC34064	SW8270D	AMGW-10D	AMGW-10D-2457742.833.42	Phenol	2.2	U	2.2	UJ	LCS-L	ug/L
JC34064	SW8270D	AMGW-10D	AMGW-10D-2457742.833.42	1,4-Dioxane	3.6		3.6	J	LCS-L	ug/L
JC34064	SW8270D	AMGW-10D	AMGW-10D-2457742.833.42	Hexachloroethane	2.2	U	2.2	UJ	LCS-L	ug/L
JC34064	SW8270D	AMGW-10D	AMGW-10D-2457742.833.42	Hexachlorobutadiene	1.1	U	1.1	UJ	LCS-L	ug/L
JC34064	SW8270D	AMGW-10D	AMGW-10D-2457742.833.42	3,3'-Dichlorobenzidine	2.2	U	2.2	UJ	LCS-L	ug/L
JC34064	SW8270D	AMGW-10D	AMGW-10D-2457742.833.42	3-Nitroaniline	5.4	U	5.4	UJ	LCS-L	ug/L
JC34064	SM3500-Fe	GAGW-02	GAGW-02-2457743.837.22	Ferrous Iron	0.2	U	0.2	UJ	HT	mg/L
JC34064	SW6010C	GAGW-02	GAGW-02-2457743.837.22	Iron	978		978	J	FD	ug/L
JC34064	SW8270D	GAGW-02	GAGW-02-2457743.837.22	4-Nitroaniline	5.3	U	5.3	UJ	MS-L, MS-RPD	ug/L
JC34064	SW8270D	GAGW-02	GAGW-02-2457743.837.22	Caprolactum	2.1	U	2.1	UJ	LCS-L, MS-L	ug/L
JC34064	SW8270D	GAGW-02	GAGW-02-2457743.837.22	2,4-Dimethylphenol	5.3	U	5.3	UJ	MS-L, MS-RPD	ug/L
JC34064	SW8270D	GAGW-02	GAGW-02-2457743.837.22	4-Chloroaniline	5.3	U	5.3	R	LCS-L, MS-L	ug/L
JC34064	SW8270D	GAGW-02	GAGW-02-2457743.837.22	1,4-Dioxane	1.1	U	1.1	UJ	LCS-L, MS-L	ug/L
JC34064	SW8270D	GAGW-02	GAGW-02-2457743.837.22	Hexachlorocyclopentadiene	11	U	11	UJ	LCS-L, MS-L	ug/L
JC34064	SW8270D	GAGW-02	GAGW-02-2457743.837.22	Hexachlorobutadiene	1.1	U	1.1	UJ	LCS-L, MS-L	ug/L
JC34064	SW8270D	GAGW-02	GAGW-02-2457743.837.22	3,3'-Dichlorobenzidine	2.1	U	2.1	R	MS-L	ug/L
JC34064	SW8270D	GAGW-02	GAGW-02-2457743.837.22	3-Nitroaniline	5.3	U	5.3	UJ	MS-L, MS-RPD	ug/L
JC34064	SM5310B	GAGW-04D	GAGW-04D-2457742.972.65	Total Organic Carbon	1.3		1.3	U	BL1	mg/L
JC34064	SW6010C	GAGW-04D	GAGW-04D-2457742.972.65	Iron	550		550	J	FD	ug/L
JC34064	SW8260C	GAGW-04D	GAGW-04D-2457742.972.65	Chloromethane	1	U	1	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-04D	GAGW-04D-2457742.972.65	Caprolactum	2.2	U	2.2	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-04D	GAGW-04D-2457742.972.65	4-Chloroaniline	5.5	U	5.5	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-04D	GAGW-04D-2457742.972.65	Phenol	2.2	U	2.2	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-04D	GAGW-04D-2457742.972.65	1,4-Dioxane	1.1	U	1.1	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-04D	GAGW-04D-2457742.972.65	Hexachloroethane	2.2	U	2.2	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-04D	GAGW-04D-2457742.972.65	Hexachlorobutadiene	1.1	U	1.1	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-04D	GAGW-04D-2457742.972.65	3,3'-Dichlorobenzidine	2.2	U	2.2	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-04D	GAGW-04D-2457742.972.65	3-Nitroaniline	5.5	U	5.5	UJ	LCS-L	ug/L
JC34064	SM5310B	GAGW-05R	GAGW-05R-2457743.024.13	Total Organic Carbon	1.3		1.3	U	BL1	mg/L

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REVIEW AVENUE GROUNDWATER MONITORING
LONG ISLAND CITY, NEW YORK

SDG	Method	Location	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Final Result	Final Qualifier	Validation Reason Code	Units
JC34064	SW6010C	GAGW-05R	GAGW-05R-2457743.024.13	Iron	437		437	J	FD	ug/L
JC34064	SW8260C	GAGW-05R	GAGW-05R-2457743.024.13	Chloromethane	1	U	1	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-05R	GAGW-05R-2457743.024.13	Caprolactum	2	U	2	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-05R	GAGW-05R-2457743.024.13	4-Chloroaniline	5	U	5	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-05R	GAGW-05R-2457743.024.13	Phenol	2	U	2	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-05R	GAGW-05R-2457743.024.13	1,4-Dioxane	1	U	1	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-05R	GAGW-05R-2457743.024.13	Hexachloroethane	2	U	2	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-05R	GAGW-05R-2457743.024.13	Hexachlorobutadiene	1	U	1	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-05R	GAGW-05R-2457743.024.13	3,3'-Dichlorobenzidine	2	U	2	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-05R	GAGW-05R-2457743.024.13	3-Nitroaniline	5	U	5	UJ	LCS-L	ug/L
JC34064	SM3500-Fe	GAGW-06I	GAGW-06I-2457743.972.29	Ferrous Iron	13.4		13.4	J	HT	mg/L
JC34064	SW6010C	GAGW-06I	GAGW-06I-2457743.972.29	Iron	30900		30900	J	FD	ug/L
JC34064	SW8270D	GAGW-06I	GAGW-06I-2457743.972.29	Caprolactum	2	U	2	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-06I	GAGW-06I-2457743.972.29	4-Chloroaniline	5	U	5	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-06I	GAGW-06I-2457743.972.29	1,4-Dioxane	1	U	1	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-06I	GAGW-06I-2457743.972.29	Hexachlorocyclopentadiene	10	U	10	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-06I	GAGW-06I-2457743.972.29	Hexachlorobutadiene	1	U	1	UJ	LCS-L	ug/L
JC34064	SM5310B	GAGW-08R	GAGW-08R-2457742.878.50	Total Organic Carbon	1.6		1.6	U	BL1	mg/L
JC34064	SW6010C	GAGW-08R	GAGW-08R-2457742.878.50	Iron	4900		4900	J	FD	ug/L
JC34064	SW8260C	GAGW-08R	GAGW-08R-2457742.878.50	Chloromethane	1	U	1	UJ	LCS-L, MS-L	ug/L
JC34064	SW8270D	GAGW-08R	GAGW-08R-2457742.878.50	Caprolactum	2.2	U	2.2	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-08R	GAGW-08R-2457742.878.50	4-Chloroaniline	5.4	U	5.4	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-08R	GAGW-08R-2457742.878.50	Phenol	2.2	U	2.2	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-08R	GAGW-08R-2457742.878.50	1,4-Dioxane	1.1	U	1.1	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-08R	GAGW-08R-2457742.878.50	Hexachloroethane	2.2	U	2.2	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-08R	GAGW-08R-2457742.878.50	Hexachlorobutadiene	1.1	U	1.1	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-08R	GAGW-08R-2457742.878.50	3,3'-Dichlorobenzidine	2.2	U	2.2	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-08R	GAGW-08R-2457742.878.50	3-Nitroaniline	5.4	U	5.4	UJ	LCS-L	ug/L
JC34064	SW6010C	GAGW-08R	GAGW-DUP-2457742.878.58	Iron	3640		3640	J	FD	ug/L
JC34064	SW8260C	GAGW-08R	GAGW-DUP-2457742.878.58	Chloromethane	1	U	1	UJ	LCS-L, MS-L	ug/L
JC34064	SW8270D	GAGW-08R	GAGW-DUP-2457742.878.58	Caprolactum	2.2	U	2.2	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-08R	GAGW-DUP-2457742.878.58	4-Chloroaniline	5.5	U	5.5	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-08R	GAGW-DUP-2457742.878.58	Phenol	2.2	U	2.2	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-08R	GAGW-DUP-2457742.878.58	1,4-Dioxane	1.1	U	1.1	UJ	LCS-L	ug/L

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REVIEW AVENUE GROUNDWATER MONITORING
LONG ISLAND CITY, NEW YORK

SDG	Method	Location	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Final Result	Final Qualifier	Validation Reason Code	Units
JC34064	SW8270D	GAGW-08R	GAGW-DUP-2457742.878.58	Hexachloroethane	2.2	U	2.2	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-08R	GAGW-DUP-2457742.878.58	Hexachlorobutadiene	1.1	U	1.1	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-08R	GAGW-DUP-2457742.878.58	3,3'-Dichlorobenzidine	2.2	U	2.2	UJ	LCS-L	ug/L
JC34064	SW8270D	GAGW-08R	GAGW-DUP-2457742.878.58	3-Nitroaniline	5.5	U	5.5	UJ	LCS-L	ug/L

Notes:
HT = preparation or analysis holding time exceeded
BL1 = method blank contamination
LCS-L = laboratory control sample recovery less than limit
MS-L = matrix spike recovery less than limit
MS-RPD = matrix spike/matrix spike duplicate precision goal not met
FD = field duplicate precision goal not met
SD = serial dlution precision goal not met

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Checked by: JAR 1/31/17

ATTACHMENT A
SUMMARY OF VALIDATION QC LIMITS FOR SURROGATES, SPIKES, AND DUPLICATES
BASED ON THE REGION 2 VALIDATION GUIDELINES

PARAMETER	QC TEST	ANALYTE	Soil (%R)	Soil (RPD)	WATER (%R)	Water (RPD)
Volatiles	Surrogate	All Surrogate Compounds	70 - 130		80 - 120	
	LCS	All Target Compounds	70 - 130		70 - 130	
	MS/MSD	All Target Compounds	70 - 130	35	70 - 130	20
	Field Duplicate	All Target Compounds		100		50
Semivolatiles	Surrogate	All BN Compounds	50 - 140		50 - 140	
		All Acid Compounds	30 - 140		30 - 140	
	LCS	All BN Compounds	50 - 140		50 - 140	
		All Acid Compounds	30 - 140		30 - 140	
	MS/MSD	All BN Compounds	50 - 140	35	50 - 140	20
		All Acid Compounds	30 - 140	35	30 - 140	20
	Field Duplicate	All Target Compounds		100		50
PCBs	Surrogate	All Surrogate Compounds	30 - 150		30 - 150	
	LCS	All Target Analytes	50 - 150		50 - 150	
	MS/MSD[1]	All Target Analytes	29 - 135	20	29 - 135	20
	Field Duplicate	All Target Analytes		100		50
Pesticides	Surrogate	All Surrogate Compounds	30 - 150		30 - 150	
	LCS	All Target Analytes	Lab Limits[3]		Lab Limits[3]	
	MS/MSD	All Target Analytes	Lab Limits[3]	Lab Limits[3]	Lab Limits[3]	Lab Limits[3]
	Field Duplicate	All Target Analytes		100		50
Inorganics-Metals	LCS	All Target Analytes	80 - 120		80 - 120	
	MS/MSD	All Target Analytes	75 -125	35	75 -125	20
	Lab Duplicate[2]	All Target Analytes		35		20
	Field Duplicate[2]	All Target Analytes		35		20

Notes:
LCS - Laboratory Control Sample
MS/MSD - Matrix spike/ Matrix Spike Duplicate
RPD = Relative percent difference
%R = percent recovery
QC Limits are based on USEPA Region II Data Validation Guidelines and Project QA/QC Objectives
1. RPD limit for Aroclcor 1016 = 15.
2. See additional duplicate criteria in USEPA Region II guideline.
3. Use Laboratory Limits. Use limits listed in SOP HW-44 Oct 2006 if no laboratory limits are listed.

ATTACHMENT B

VOCs

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Review Ave
Method: 8260C
Laboratory: SGS New Jersey **SDG(s):** JC34064
Date: 1/16/17
Reviewer: Julie Ricardi

Review Level [X] NYSDEC DUSR USEPA Region II Guideline

1. [✓] **Case Narrative Review and COC/Data Package Completeness** COMMENTS
   Were problems noted? See attached
   Are Field Sample IDs and Locations assigned correctly? (YES) NO (circle one)
   Were all the samples on the COC analyzed for the requested analyses? (YES) NO (circle one)

2. [✓] **Holding time and Sample Collection**
   All samples were analyzed within the 14 day holding time. (YES) NO (circle one)

3. [✓] **QC Blanks**
   Are method blanks free of contamination? YES (NO) (circle one) JR 1/16/17

   Are Trip blanks free of contamination? (YES) NO (circle one)

   Are Rinse blanks free of contamination? YES NO (NA) (circle one)

4. [✓] **Instrument Tuning – Data Package Narrative Review**
   Did the laboratory narrative identify any results that were not within method criteria? YES (NO) (circle one)
   If yes, use professional judgment to evaluate data and qualify results if needed

5. [✓] **Instrument Calibration – Data Package Narrative Review**
   Did the laboratory narrative identify compounds that were not within criteria in the initial and/or continuing calibration standards? YES (NO) (circle one)

   Initial Calibration %RSD = 20% **(30% for 1,1-DCE, chloroform, 1,2-DCP, toluene, ethylbenzene, VC)**
   Initial Avg RRF and Continuing RRF should be ≥ 0.05 and 0.10 for Chloromethane, 1,1-Dichloroethane, Bromoform and 0.30 for Chlorobenzene and 1,1,2,2-Tetrachloroethane

   Continuing Calibration %D = 20%

   Did the laboratory qualify results based on initial or continuing calibration exceedances? YES (NO)
   If yes to above, use professional judgment to evaluate data and qualify results if needed

6. [✓] **Internal Standards – Data Package Narrative Review**
   (Area Limits = -50% to +100%, RTs within 30 seconds of daily CCAL standard (or ICAL mid-point if samples follow ICAL)
   Did the laboratory narrative identify any sample internal standards that were not within criteria?
   YES (NO) (circle one)

   Did the laboratory qualify results based on internal standard exceedances? YES (NO)
   If yes to above, use professional judgment to evaluate data and qualify results if needed

7. [✓] **Surrogate Recovery** - Region II limits (water 80-120%, soil 70-130%)

   Were all results within Region II limits? (YES) NO (circle one)

8. [✓] **Matrix Spike** - Region II limits (water and soil 70-130%, water RPD 20, soil RPD 35)

   Were MS/MSDs submitted/analyzed? (YES) NO
   GAGW-08R MS ! See attached (qual) apply to sample & DUP
   Were all results within the Region II limits? YES (NO) NA (circle one)

9. ☑ **Duplicates** - Region II Limits (water RPD 50, soil RPD 100)

Were Field Duplicates submitted/analyzed? (YES) NO
GAGW-08R / GAGW-DUP ; All OK
Were all results within Region II limits? (soil RPD<100, water RPD<50) (YES) NO NA
Lab Dup GAGW-08R; All OK

10. ☑ **Laboratory Control Sample Results** - Region II (Water and soil 70-130%)

Were all results were within Region II control limits? YES (NO) (circle one)
See attached for (quals)

11. ☑ **Raw Data Review and Calculation Checks**
See attached

12. ☑ **Electronic Data Review and Edits**
Does the EDD match the Form Is? (YES) NO (circle one)

13. ☑ **Tables and TIC Review**
Table 1 (Samples and Analytical Methods)
Table 2 (Analytical Results)
Table 3 (Qualification Actions)
Were all tables produced and reviewed? (YES) NO (circle one)

Table 4 (TICs) Did lab report TICs? YES (NO) (circle one)

Sample Summary

AMEC Environment & Infrastructure, Inc.

Job No: JC34064

Review Avenue GWM, Long Island City, NY
Project No: 3480160502 / PO#CO12700305

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
JC34064-1	12/20/16	08:00	JL	12/20/16	AQ	Ground Water	AMGW-10D
JC34064-2	12/20/16	09:05	JL	12/20/16	AQ	Ground Water	GAGW-08R
JC34064-3	12/20/16	09:05	JL	12/20/16	AQ	Ground Water	GAGW-DUP
JC34064-4	12/20/16	11:20	JL	12/20/16	AQ	Ground Water	GAGW-04D
JC34064-5	12/20/16	12:35	JL	12/20/16	AQ	Ground Water	GAGW-05R
JC34064-6	12/20/16	12:35	JL	12/20/16	AQ	Trip Blank Water	TRIP BLANK
JC34064-7	12/21/16	08:05	JL	12/21/16	AQ	Ground Water	GAGW-02
JC34064-8	12/21/16	11:20	JL	12/21/16	AQ	Ground Water	GAGW-06I
JC34064-9	12/21/16	06:50	JL	12/21/16	AQ	Equipment Blank	EQUIPMENT BLANK
JC34064-10	12/21/16	11:20	JL	12/21/16	AQ	Trip Blank Water	TRIP BLANK

CASE NARRATIVE / CONFORMANCE SUMMARY

2

Client: AMEC Environment & Infrastructure, Inc. **Job No** JC34064

Site: Review Avenue GWM, Long Island City, NY **Report Date** 1/9/2017 4:45:24 PM

Between 12/20/2016 and 12/21/2016, 7 Sample(s), 2 Trip Blank(s) and 1 Equipment Blank(s) were received at SGS Accutest at a maximum corrected temperature of 4 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC34064 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.

Volatiles by GCMS By Method SW846 8260C

Matrix: AQ **Batch ID:** VA8646

- All samples were analyzed within the recommended method holding time.
- Sample(s) JC34064-2MS, JC34064-3DUP were used as the QC samples indicated. ✓
- All method blanks for this batch meet method specific criteria.

Matrix: AQ **Batch ID:** VA8647

- All samples were analyzed within the recommended method holding time.
- Sample(s) JC34054-3MS, JC34054-3MSD were used as the QC samples indicated. N/A
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Cyclohexane, Methylene chloride are outside control limits. Outside control limits due to matrix interference. N/A
- Matrix Spike Duplicate Recovery(s) for Cyclohexane, Methylene chloride are outside control limits. Outside control limits due to matrix interference. ↓

Matrix: AQ **Batch ID:** VA8649

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC49235-8MS, MC49235-8MSD were used as the QC samples indicated. N/A
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Benzene are outside control limits. Outside control limits due to high level in sample relative to spike amount. N/A
- Matrix Spike Duplicate Recovery(s) for Benzene are outside control limits. Outside control limits due to high level in sample relative to spike amount. ↓

JR 1/18/17

Blank Spike Summary

Job Number: JC34064
Account: HLANJPR AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA8646-BS	A228789.D	1	12/31/16	GA	n/a	n/a	VA8646

The QC reported here applies to the following samples: Method: SW846 8260C

TB

JC34064-1, JC34064-2, JC34064-3, JC34064-4, JC34064-5, JC34064-10

70-130

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	51.2	102	49-137
71-43-2	Benzene	50	50.4	101	80-118
74-97-5	Bromochloromethane	50	54.0	108	84-120
75-27-4	Bromodichloromethane	50	51.9	104	83-119
75-25-2	Bromoform	50	57.1	114	77-126
74-83-9	Bromomethane	50	42.6	85	57-133
78-93-3	2-Butanone (MEK)	50	57.0	114	71-127
75-15-0	Carbon disulfide	50	51.2	102	61-144
56-23-5	Carbon tetrachloride	50	53.9	108	77-134
108-90-7	Chlorobenzene	50	53.0	106	85-116
75-00-3	Chloroethane	50	42.4	85	62-133
67-66-3	Chloroform	50	53.4	107	84-125
74-87-3	Chloromethane J(U)	50	34.3	(69)	51-134
110-82-7	Cyclohexane	50	49.4	99	60-134
96-12-8	1,2-Dibromo-3-chloropropane	50	54.1	108	71-124
124-48-1	Dibromochloromethane	50	55.9	112	82-121
106-93-4	1,2-Dibromoethane	50	55.7	111	79-120
95-50-1	1,2-Dichlorobenzene	50	54.4	109	84-117
541-73-1	1,3-Dichlorobenzene	50	53.8	108	83-114
106-46-7	1,4-Dichlorobenzene	50	50.7	101	83-115
75-71-8	Dichlorodifluoromethane	50	37.1	74	43-135
75-34-3	1,1-Dichloroethane	50	52.3	105	79-124
107-06-2	1,2-Dichloroethane	50	60.3	121	81-127
75-35-4	1,1-Dichloroethene	50	54.8	110	69-136
156-59-2	cis-1,2-Dichloroethene	50	52.0	104	79-118
156-60-5	trans-1,2-Dichloroethene	50	53.8	108	73-125
78-87-5	1,2-Dichloropropane	50	52.8	106	81-118
10061-01-5	cis-1,3-Dichloropropene	50	53.6	107	86-119
10061-02-6	trans-1,3-Dichloropropene	50	56.6	113	84-121
123-91-1	1,4-Dioxane	1250	1370	110	58-143
100-41-4	Ethylbenzene	50	51.5	103	84-115
76-13-1	Freon 113	50	64.0	128	67-159
591-78-6	2-Hexanone	50	52.5	105	71-125
98-82-8	Isopropylbenzene	50	52.0	104	80-121
79-20-9	Methyl Acetate	50	57.7	115	69-126
108-87-2	Methylcyclohexane	50	48.2	96	61-138

All else OK

* = Outside of Control Limits.

gr 1/16/17

6.2.1

6

Blank Spike Summary

Job Number: JC34064
Account: HLANJPR AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA8647-BS	A228823.D	1	01/03/17	GA	n/a	n/a	VA8647

The QC reported here applies to the following samples: Method: SW846 8260C

TB
JC34064-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	48.2	96	49-137
71-43-2	Benzene	50	49.8	100	80-118
74-97-5	Bromochloromethane	50	50.4	101	84-120
75-27-4	Bromodichloromethane	50	51.7	103	83-119
75-25-2	Bromoform	50	59.7	119	77-126
74-83-9	Bromomethane	50	40.0	80	57-133
78-93-3	2-Butanone (MEK)	50	54.0	108	71-127
75-15-0	Carbon disulfide	50	58.5	117	61-144
56-23-5	Carbon tetrachloride	50	56.4	113	77-134
108-90-7	Chlorobenzene	50	52.2	104	85-116
75-00-3	Chloroethane TB; no qual needed	50	41.3	83	62-133
67-66-3	Chloroform	50	51.6	103	84-125
74-87-3	Chloromethane J/UJ	50	30.4	61	51-134
110-82-7	Cyclohexane	50	46.5	93	60-134
96-12-8	1,2-Dibromo-3-chloropropane	50	51.9	104	71-124
124-48-1	Dibromochloromethane	50	54.8	110	82-121
106-93-4	1,2-Dibromoethane	50	53.8	108	79-120
95-50-1	1,2-Dichlorobenzene	50	51.6	103	84-117
541-73-1	1,3-Dichlorobenzene	50	52.5	105	83-114
106-46-7	1,4-Dichlorobenzene	50	50.6	101	83-115
75-71-8	Dichlorodifluoromethane	50	34.8	70	43-135
75-34-3	1,1-Dichloroethane	50	49.6	99	79-124
107-06-2	1,2-Dichloroethane	50	58.2	116	81-127
75-35-4	1,1-Dichloroethene	50	55.9	112	69-136
156-59-2	cis-1,2-Dichloroethene	50	51.1	102	79-118
156-60-5	trans-1,2-Dichloroethene	50	53.8	108	73-125
78-87-5	1,2-Dichloropropane	50	50.8	102	81-118
10061-01-5	cis-1,3-Dichloropropene	50	54.3	109	86-119
10061-02-6	trans-1,3-Dichloropropene	50	59.0	118	84-121
123-91-1	1,4-Dioxane	1250	1430	114	58-143
100-41-4	Ethylbenzene	50	50.0	100	84-115
76-13-1	Freon 113 J+	50	67.0	134	67-159
591-78-6	2-Hexanone	50	58.1	116	71-125
98-82-8	Isopropylbenzene	50	49.8	100	80-121
79-20-9	Methyl Acetate	50	55.5	111	69-126
108-87-2	Methylcyclohexane	50	49.3	99	61-138

70-130

TB; no quals applied

gr 1/16/17

* = Outside of Control Limits.

6.2.2

6

Blank Spike Summary

Job Number: JC34064
Account: HLANJPR AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA8647-BS	A228823.D	1	01/03/17	GA	n/a	n/a	VA8647

The QC reported here applies to the following samples: Method: SW846 8260C

TB
JC34064-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
1634-04-4	Methyl Tert Butyl Ether	100	111	111	80-121
108-10-1	4-Methyl-2-pentanone(MIBK)	50	55.7	111	77-123
75-09-2	Methylene chloride	50	53.4	107	75-122
100-42-5	Styrene	50	53.1	106	86-118
79-34-5	1,1,2,2-Tetrachloroethane	50	49.5	99	74-119
127-18-4	Tetrachloroethene	50	52.0	104	70-134
108-88-3	Toluene	50	50.7	101	84-117
87-61-6	1,2,3-Trichlorobenzene	50	48.4	97	73-130
120-82-1	1,2,4-Trichlorobenzene	50	50.4	101	79-129
71-55-6	1,1,1-Trichloroethane	50	55.7	111	83-134
79-00-5	1,1,2-Trichloroethane	50	51.7	103	84-119
79-01-6	Trichloroethene	50	53.9	108	84-120
75-69-4	Trichlorofluoromethane	50	48.4	97	63-133
75-01-4	Vinyl chloride	50	33.7	(67)	55-121
	m,p-Xylene	100	103	103	85-117
95-47-6	o-Xylene	50	49.7	99	85-119
1330-20-7	Xylene (total)	150	152	101	85-117

70-130

TB; no qual applied

J/UJ

1/18/17

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	76-120%
17060-07-0	1,2-Dichloroethane-D4	106%	73-122%
2037-26-5	Toluene-D8	102%	84-119%
460-00-4	4-Bromofluorobenzene	99%	78-117%

* = Outside of Control Limits.

6.2.2

6

Blank Spike Summary

Job Number: JC34064
Account: HLANJPR AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA8649-BS	A228865.D	1	01/04/17	GA	n/a	n/a	VA8649

The QC reported here applies to the following samples: Method: SW846 8260C

JC34064-7, JC34064-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	44.4	89	49-137
71-43-2	Benzene	50	51.3	103	80-118
74-97-5	Bromochloromethane	50	54.6	109	84-120
75-27-4	Bromodichloromethane	50	50.8	102	83-119
75-25-2	Bromoform	50	54.9	110	77-126
74-83-9	Bromomethane	50	44.7	89	57-133
78-93-3	2-Butanone (MEK)	50	52.4	105	71-127
75-15-0	Carbon disulfide	50	57.8	116	61-144
56-23-5	Carbon tetrachloride	50	56.7	113	77-134
108-90-7	Chlorobenzene	50	52.3	105	85-116
75-00-3	Chloroethane	50	44.0	88	62-133
67-66-3	Chloroform	50	53.4	107	84-125
74-87-3	Chloromethane	50	35.4	71 ✓	51-134
110-82-7	Cyclohexane	50	53.8	108	60-134
96-12-8	1,2-Dibromo-3-chloropropane	50	53.4	107	71-124
124-48-1	Dibromochloromethane	50	53.7	107	82-121
106-93-4	1,2-Dibromoethane	50	52.5	105	79-120
95-50-1	1,2-Dichlorobenzene	50	53.0	106	84-117
541-73-1	1,3-Dichlorobenzene	50	52.7	105	83-114
106-46-7	1,4-Dichlorobenzene	50	52.0	104	83-115
75-71-8	Dichlorodifluoromethane	50	39.3	79	43-135
75-34-3	1,1-Dichloroethane	50	53.0	106	79-124
107-06-2	1,2-Dichloroethane	50	56.9	114	81-127
75-35-4	1,1-Dichloroethene	50	58.4	117	69-136
156-59-2	cis-1,2-Dichloroethene	50	52.5	105	79-118
156-60-5	trans-1,2-Dichloroethene	50	55.1	110	73-125
78-87-5	1,2-Dichloropropane	50	51.3	103	81-118
10061-01-5	cis-1,3-Dichloropropene	50	53.7	107	86-119
10061-02-6	trans-1,3-Dichloropropene	50	54.8	110	84-121
123-91-1	1,4-Dioxane	1250	1380	110	58-143
100-41-4	Ethylbenzene	50	50.2	100	84-115
76-13-1	Freon 113 JT (ND)	50	70.5	141	67-159
591-78-6	2-Hexanone	50	52.8	106	71-125
98-82-8	Isopropylbenzene	50	50.9	102	80-121
79-20-9	Methyl Acetate	50	49.6	99	69-126
108-87-2	Methylcyclohexane	50	49.0	98	61-138

70-130

All else OK

1/16/17

* = Outside of Control Limits.

6.2.3

Matrix Spike Summary

Job Number: JC34064
Account: HLANJPR AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC34064-2MS	A228797.D	1	12/31/16	GA	n/a	n/a	VA8646
JC34064-2	A228791.D	1	12/31/16	GA	n/a	n/a	VA8646

GAGW-08R | GAGW-DUP

The QC reported here applies to the following samples: Method: SW846 8260C

JC34064-1, JC34064-2, JC34064-3, JC34064-4, JC34064-5, JC34064-10

CAS No.	Compound	JC34064-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
67-64-1	Acetone	ND		50	53.2	106	39-143
71-43-2	Benzene	ND		50	54.4	109	54-138
74-97-5	Bromochloromethane	ND		50	52.3	105	79-123
75-27-4	Bromodichloromethane	ND		50	54.3	109	78-123
75-25-2	Bromoform	ND		50	56.5	113	71-128
74-83-9	Bromomethane	ND		50	37.7	75	52-140
78-93-3	2-Butanone (MEK)	ND		50	59.6	119	57-141
75-15-0	Carbon disulfide	ND		50	58.7	117	51-156
56-23-5	Carbon tetrachloride	ND		50	59.9	120	65-148
108-90-7	Chlorobenzene	ND		50	55.6	111	76-125
75-00-3	Chloroethane	ND		50	40.3	81	55-142
67-66-3	Chloroform	ND		50	54.6	109	77-131
74-87-3	Chloromethane J MS	ND		50	31.3	63	43-144
110-82-7	Cyclohexane	ND		50	53.0	106	41-160
96-12-8	1,2-Dibromo-3-chloropropane	ND		50	50.4	101	66-128
124-48-1	Dibromochloromethane	ND		50	57.4	115	77-124
106-93-4	1,2-Dibromoethane	ND		50	55.5	111	77-119
95-50-1	1,2-Dichlorobenzene	ND		50	52.9	106	78-122
541-73-1	1,3-Dichlorobenzene	ND		50	53.8	108	77-120
106-46-7	1,4-Dichlorobenzene	ND		50	51.9	104	75-122
75-71-8	Dichlorodifluoromethane	ND		50	39.8	80	31-155
75-34-3	1,1-Dichloroethane	ND		50	52.6	105	71-131
107-06-2	1,2-Dichloroethane	ND		50	60.4	121	72-135
75-35-4	1,1-Dichloroethene	ND		50	58.8	118	57-149
156-59-2	cis-1,2-Dichloroethene	1.5		50	52.8	103	59-134
156-60-5	trans-1,2-Dichloroethene	ND		50	56.1	112	64-134
78-87-5	1,2-Dichloropropane	ND		50	55.9	112	76-122
10061-01-5	cis-1,3-Dichloropropene	ND		50	56.4	113	80-124
10061-02-6	trans-1,3-Dichloropropene	ND		50	56.8	114	78-124
123-91-1	1,4-Dioxane	ND		1250	1220	98	53-143
100-41-4	Ethylbenzene	ND		50	56.0	112	48-143
76-13-1	Freon 113	ND		50	64.6	129	56-179
591-78-6	2-Hexanone	ND		50	58.9	118	63-135
98-82-8	Isopropylbenzene	ND		50	57.1	114	70-131
79-20-9	Methyl Acetate	ND		50	52.1	104	60-127
108-87-2	Methylcyclohexane	ND		50	52.1	104	43-163

All else OK

* = Outside of Control Limits.

jm 1/16/17

6.3.1

6

Sample Calc

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\A\va8646\
Data File : A228796.D
Acq On : 31 Dec 2016 2:53 pm
Operator : Gabriela
Sample : jc34064-1
Misc : MS10935,VA8646,5,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 03 15:34:49 2017
Quant Method : C:\MSDCHEM\1\METHODS\MA8641.m
Quant Title : SW 846 8260C DB624 60m x 0.25mm x 1.4um
QLast Update : Fri Dec 30 08:41:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.849	65	584156	500.00	ug/L	-0.02
4) pentafluorobenzene	10.218	168	231584	50.00	ug/L	0.00
53) 1,4-difluorobenzene	11.160	114	351978	50.00	ug/L	0.00
84) chlorobenzene-d5	14.554	117	324074	50.00	ug/L	0.00
100) 1,4-dichlorobenzene-d4	17.159	152	182378	50.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	10.245	113	130982	51.82	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 103.64%			
47) 1,2-dichloroethane-d4 (s)	10.684	65	159302	53.91	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 107.82%			
76) toluene-d8 (s)	12.901	98	412328	50.17	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 100.34%			
103) 4-bromofluorobenzene (s)	15.851	95	165012	52.11	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 104.22%			
Target Compounds						Qvalue
10) vinyl chloride	4.837	62	6042	0.69	ug/L	90
20) 1,1-dichloroethene	7.143	61	2613	0.56	ug/L #	66
28) methyl tert butyl ether	8.278	73	355890	32.02	ug/L	100
29) trans-1,2-dichloroethene	8.304	61	5959	1.54	ug/L	87
35) 1,1-dichloroethane	8.895	63	2168	0.44	ug/L	68
41) cis-1,2-dichloroethene	9.659	96	43876 ✓	15.15	ug/L #	81
64) 1,2-dichloroethane	10.778	62	4667	1.36	ug/L	94
66) trichloroethene	11.510	95	59415	26.46	ug/L	92
85) tetrachloroethene	13.623	166	928	0.40	ug/L	86

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.1.1

7

$$\text{Cis-1,2-DCE} = \frac{43876}{231584} \times \frac{50}{.625} = 15.157 \ \frac{ug}{L}$$

OK

JC 1/30/17

SVOC

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Review Ave.
Method: 8270D / 8270D-SIM
Laboratory: SGS New Jersey **SDG(s):** JC34064
Date: 1/16/17
Reviewer: Julie Ricardi

Review Level [X] NYSDEC DUSR USEPA Region II Guideline

1. [✓] **Case Narrative Review and Data Package Completeness** COMMENTS
   Were problems noted? See attached
   Were all the samples on the COC analyzed for the requested analyses? (YES) NO (circle one)
   Are Field Sample IDs and Locations assigned correctly? (YES) NO (circle one)

2. [✓] **Holding time and Sample Collection**
   Soil: 14 days from collection to extraction; 40 days from extraction to analysis
   Water: 7 days from collection to extraction; 40 days from extraction to analysis
   Hold time met for all samples? (YES) NO (circle one)

3. [✓] **QC Blanks**
   Are method blanks free of contamination? YES (NO) (circle one)
   Are Rinse blanks free of contamination? (YES) NO NA (circle one)
   Butylbenzyl phthalate 1.6 J ug/L; sample result ND & no quals

4. [✓] **Instrument Tuning – Data Package Narrative Review**
   Did the laboratory narrative identify any results that were not within method criteria? YES (NO) (circle one)
   If yes, use professional judgment to evaluate data and qualify results if needed

5. [✓] **Internal Standards – Data Package Narrative Review**
   (Area Limits = -50% to +100%, RTs within 30 seconds of daily CCAL standard (or ICAL mid-point if samples follow ICAL))
   Did the laboratory narrative identify any sample internal standards that were not within criteria? YES (NO) (circle one)

   Did the laboratory qualify results based on internal standard exceedances? YES (NO)
   If yes to above, use professional judgment to evaluate data and qualify results if needed

6. [✓] **Instrument Calibration – Data Package Narrative Review**
   Did the laboratory narrative identify compounds that were not within criteria in the initial and/or continuing calibration standards? YES (NO) (circle one)

   Control Limits (Region II HW-22): Initial Calibration %RSD = 15%, Continuing Calibration %D = 20%
   Average RRF should be ≥ 0.05 (or reject NDs, J detects or use professional judgment to J/UJ)

   Did the laboratory qualify results based on initial or continuing calibration exceedances? YES (NO)
   If yes to above, use professional judgment to evaluate data and qualify results if needed

7. [✓] **Surrogate Recovery** (water and soil limits: Base/Neutral 50-140%, Acid 30-140%)
   Were all results within limits? YES (NO) (circle one) 8270-SIM all OK; see attached for 8270D summary
   Were any recoveries < 10%? (Reject fraction compounds if recoveries are < 10%)
   No qual needed; 2 of 3 surrogates per fraction are in control.

8. [✓] **Matrix Spike** (water & soil limits: Base/Neutral 50-140%, Acid 30-140%) (RPD soil=35,water=20)
   Were MS/MSDs submitted/analyzed? (YES) NO
   GAGW-02 MS/MSD; See attached for (quals) to GAGW-02
   Were all results within limits? YES (NO) NA (circle one)

9. ☑ **Duplicates** (RPD limits = water:50, soil:100)
Were Field Duplicates submitted/analyzed? (YES) NO
GAGW-08R / GAGW-DUP; Both ND
Were RPDs within criteria? (YES) NO NA (circle one)

10. ☑ **Laboratory Control Sample Results** (water&soil limits: Base/Neutral 50-140%, Acid 30-140%)
Were all results within limits? YES (NO) (circle one)
See attached for quals

11. ☑ **Raw Data Review and Calculation Checks**
See attached

12. ☑ **Electronic Data Review and Edits**
Does the EDD match the Form Is? (YES) NO (circle one)

13. ☑ **Tables and TIC Review**
Table 1 (Samples and Analytical Methods)
Table 2 (Analytical Results)
Table 3 (Qualification Actions)
Were all tables produced and reviewed? (YES) NO (circle one)

Table 4 (TICs) Did lab report TICs? YES (NO) (circle one)

Sample Summary

AMEC Environment & Infrastructure, Inc.

Job No: JC34064

Review Avenue GWM, Long Island City, NY
Project No: 3480160502 / PO#CO12700305

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
JC34064-1	12/20/16	08:00	JL	12/20/16	AQ	Ground Water	AMGW-10D
JC34064-2	12/20/16	09:05	JL	12/20/16	AQ	Ground Water	GAGW-08R
JC34064-3	12/20/16	09:05	JL	12/20/16	AQ	Ground Water	GAGW-DUP
JC34064-4	12/20/16	11:20	JL	12/20/16	AQ	Ground Water	GAGW-04D
JC34064-5	12/20/16	12:35	JL	12/20/16	AQ	Ground Water	GAGW-05R
JC34064-6	12/20/16	12:35	JL	12/20/16	AQ	Trip Blank Water	TRIP BLANK
JC34064-7	12/21/16	08:05	JL	12/21/16	AQ	Ground Water	GAGW-02
JC34064-8	12/21/16	11:20	JL	12/21/16	AQ	Ground Water	GAGW-06I
JC34064-9	12/21/16	06:50	JL	12/21/16	AQ	Equipment Blank	EQUIPMENT BLANK
JC34064-10	12/21/16	11:20	JL	12/21/16	AQ	Trip Blank Water	TRIP BLANK

Extractables by GCMS By Method SW846 8270D

Matrix: AQ	Batch ID: OP99456

- All samples were extracted within the recommended method holding time.
- Sample(s) JC33987-12MS, JC33987-12MSD were used as the QC samples indicated. N/A
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Phenol are outside control limits. Outside control limits due to matrix interference. N/A
- Matrix Spike Duplicate Recovery(s) for 2-Chloronaphthalene, 2-Chlorophenol, 2-Methylphenol, Phenol are outside control limits. Outside control limits due to matrix interference. N/A

Matrix: AQ	Batch ID: OP99513

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-7MS, JC34064-7MSD were used as the QC samples indicated. ✓
- Matrix Spike Recovery(s) for 2,4-Dimethylphenol, 3,3'-Dichlorobenzidine, 4-Chloroaniline, 4-Nitroaniline are outside control limits. Outside control limits due to matrix interference. See checklist
- Matrix Spike Duplicate Recovery(s) for 3,3'-Dichlorobenzidine, 3-Nitroaniline, 4-Chloroaniline, 2,4-Dimethylphenol, 4-Nitroaniline are outside control limits. Outside control limits due to matrix interference.
- RPD(s) for MSD for 2,4-Dimethylphenol, 4-Nitroaniline are outside control limits for sample OP99513-MSD. Outside of in house control limits.

Extractables by GCMS By Method SW846 8270D BY SIM

Matrix: AQ	Batch ID: OP99456A

- All samples were extracted within the recommended method holding time.
- Sample(s) JC34146-3MS, JC34146-3MSD were used as the QC samples indicated. N/A
- All method blanks for this batch meet method specific criteria.

Matrix: AQ	Batch ID: OP99513A

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34180-1MS, JC34180-1MSD were used as the QC samples indicated. N/A
- Matrix Spike / Matrix Spike Duplicate Recovery(s) for Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Chrysene, Fluoranthene, Fluorene, Naphthalene, Phenanthrene, Pyrene are outside control limits. Outside control limits due to matrix interference. N/A
- Matrix Spike Duplicate Recovery(s) for Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Fluoranthene, Benzo(b)fluoranthene are outside control limits. Outside control limits due to matrix interference.
- RPD(s) for MSD for Acenaphthene, Acenaphthylene, Anthracene, Benzo(b)fluoranthene, Fluorene, Phenanthrene are outside control limits for sample OP99513A-MSD. Analytical precision exceeds in-house control limits.

Volatiles by GC By Method RSK-175

1/18/17

Matrix: AQ	Batch ID: GAA1103

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) LA28864-1DUP were used as the QC samples indicated.
- RPD(s) for Duplicate for Ethene, Methane are outside control limits for sample LA28864-1DUP. Outside in house control limits.

Semivolatile Surrogate Recovery Summary

Job Number: JC34064
Account: HLANJPR AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

Method: SW846 8270D Matrix: AQ

Samples and QC shown here apply to the above method 50-140 / 30-140

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
JC34064-1	Z117716.D	55	39	101	82	74	80
JC34064-2	2M90354.D	49	30	81	69	74	81
JC34064-3	2M90355.D	42	(29)	75	58	62	81
JC34064-4	2M90356.D	43	(28)	79	64	70	73
JC34064-5	2M90357.D	36	(25)	87	70	75	74
JC34064-7	2M90369.D	50	33	87	73	80	89
JC34064-8	2M90293.D	47	32	98	76	86	92
JC34064-9	2M90294.D	45 EB	(27)	83	66	72	105
OP99456-BS1	6P33470.D	42	30	80	68	69	80
OP99456-MB1	6P33469.D	42	27	72	66	62	72
OP99456-MB1	2M90349.D	39	25	65	58	59	72
OP99456-MB1	Z117713.D	44	30	81	67	60	72
OP99456-MS	6P33479.D	41	28	75	68	62	51
OP99456-MSD	6P33480.D	38	26	65	59	53	47
OP99513-BS1	2M90285.D	51	38	91	66	85	99
OP99513-MB1	2M90284.D	42	29	76	62	68	102
OP99513-MB1	2M90348.D	44	29	76	62	67	100
OP99513-MB1	M130504.D	48	30	95	71	74	99
OP99513-MS	2M90291.D	68	60	89	66	82	94
OP99513-MSD	2M90292.D	69	61	86	64	82	93

OK; only 1 of 3 acid surrs out; no qualr needed

8.6.1

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	14-88%
S2 = Phenol-d5	10-110%
S3 = 2,4,6-Tribromophenol	39-149%
S4 = Nitrobenzene-d5	32-128%
S5 = 2-Fluorobiphenyl	35-119%
S6 = Terphenyl-d14	10-126%

Blank Spike Summary

Job Number: JC34064
Account: HLANJPR AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99456-BS1	6P33470.D	1	12/28/16	RL	12/27/16	OP99456	E6P1542

The QC reported here applies to the following samples: Method: SW846 8270D

JC34064-1, JC34064-2, JC34064-3, JC34064-4, JC34064-5

50-140 / 30-140

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
95-57-8	2-Chlorophenol	50	25.3	51	48-106
59-50-7	4-Chloro-3-methyl phenol	50	34.9	70	49-113
120-83-2	2,4-Dichlorophenol	50	32.2	64	49-111
105-67-9	2,4-Dimethylphenol	50	36.7	73	42-117
51-28-5	2,4-Dinitrophenol	100	78.4	78	37-132
534-52-1	4,6-Dinitro-o-cresol	50	39.4	79	49-119
95-48-7	2-Methylphenol	50	26.5	53	42-103
	3&4-Methylphenol	50	26.0	52	39-110
88-75-5	2-Nitrophenol	50	32.3	65	49-114
100-02-7	4-Nitrophenol	50	26.2	52	16-95
87-86-5	Pentachlorophenol	50	34.2	68	30-136
108-95-2	Phenol J (UJ)	50	14.4	(29)	10-110
58-90-2	2,3,4,6-Tetrachlorophenol	50	33.1	66	47-118
95-95-4	2,4,5-Trichlorophenol	50	34.8	70	55-116
88-06-2	2,4,6-Trichlorophenol	50	35.8	72	56-115
98-86-2	Acetophenone	50	32.4	65	52-111
1912-24-9	Atrazine	50	39.8	80	62-134
100-52-7	Benzaldehyde	50	26.6	53	40-129
101-55-3	4-Bromophenyl phenyl ether	50	35.3	71	54-121
85-68-7	Butyl benzyl phthalate	50	37.6	75	20-143
92-52-4	1,1'-Biphenyl	50	34.8	70	51-106
91-58-7	2-Chloronaphthalene	50	32.0	64	48-104
106-47-8	4-Chloroaniline J (UJ)	50	17.7	(35)	10-110
86-74-8	Carbazole	50	36.4	73	56-110
105-60-2	Caprolactam J (UJ)	50	8.4	(17)	10-110
111-91-1	bis(2-Chloroethoxy)methane	50	30.5	61	47-117
111-44-4	bis(2-Chloroethyl)ether	50	29.4	59	48-115
108-60-1	bis(2-Chloroisopropyl)ether	50	25.8	52	44-112
7005-72-3	4-Chlorophenyl phenyl ether	50	35.0	70	50-117
121-14-2	2,4-Dinitrotoluene	50	39.7	79	57-122
606-20-2	2,6-Dinitrotoluene	50	38.9	78	58-122
91-94-1	3,3'-Dichlorobenzidine J (UJ) 100		44.1	(44)	10-110
123-91-1	1,4-Dioxane (J UJ)	50	14.9	(30)	10-110
132-64-9	Dibenzofuran	50	35.9	72	55-108
84-74-2	Di-n-butyl phthalate	50	38.3	77	45-123
117-84-0	Di-n-octyl phthalate	50	37.2	74	37-144

JR 1/16/17

* = Outside of Control Limits.

8.2.1 8

Blank Spike Summary

Job Number: JC34064
Account: HLANJPR AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99456-BS1	6P33470.D	1	12/28/16	RL	12/27/16	OP99456	E6P1542

The QC reported here applies to the following samples: Method: SW846 8270D

JC34064-1, JC34064-2, JC34064-3, JC34064-4, JC34064-5

50-140 | 30-140

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
84-66-2	Diethyl phthalate	50	37.6	75	23-130
131-11-3	Dimethyl phthalate	50	36.5	73	10-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	36.6	73	36-138
118-74-1	Hexachlorobenzene	50	35.4	71	49-122
87-68-3	Hexachlorobutadiene J | qJ	50	24.5	49	24-112
77-47-4	Hexachlorocyclopentadiene	100	50.1	50	14-119
67-72-1	Hexachloroethane J | qJ	50	23.0	46	31-107
78-59-1	Isophorone	50	33.2	66	52-119
91-57-6	2-Methylnaphthalene	50	31.2	62	45-107
88-74-4	2-Nitroaniline	50	38.4	77	51-127
99-09-2	3-Nitroaniline J | qJ	50	23.8	48	10-110
100-01-6	4-Nitroaniline	50	34.3	69	50-112
98-95-3	Nitrobenzene	50	32.1	64	44-116
621-64-7	N-Nitroso-di-n-propylamine	50	31.0	62	49-117
86-30-6	N-Nitrosodiphenylamine	50	35.0	70	51-113
95-94-3	1,2,4,5-Tetrachlorobenzene	50	33.9	68	36-114

dr 1/16/17

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	42%	14-88%
4165-62-2	Phenol-d5	30%	10-110%
118-79-6	2,4,6-Tribromophenol	80%	39-149%
4165-60-0	Nitrobenzene-d5	68%	32-128%
321-60-8	2-Fluorobiphenyl	69%	35-119%
1718-51-0	Terphenyl-d14	80%	10-126%

8.2.1 8

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC34064
Account: HLANJPR AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99513-BS1	2M90285.D	1	12/30/16	CS	12/28/16	OP99513	E2M4007

The QC reported here applies to the following samples: Method: SW846 8270D

JC34064-7, JC34064-8, JC34064-9

50-140 | 30-140

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
95-57-8	2-Chlorophenol	50	35.0	70	48-106
59-50-7	4-Chloro-3-methyl phenol	50	38.5	77	49-113
120-83-2	2,4-Dichlorophenol	50	36.3	73	49-111
105-67-9	2,4-Dimethylphenol	50	37.7	75	42-117
51-28-5	2,4-Dinitrophenol	100	89.1	89	37-132
534-52-1	4,6-Dinitro-o-cresol	50	51.2	102	49-119
95-48-7	2-Methylphenol	50	35.6	71	42-103
	3&4-Methylphenol	50	34.6	69	39-110
88-75-5	2-Nitrophenol	50	37.0	74	49-114
100-02-7	4-Nitrophenol	50	25.8	52	16-95
87-86-5	Pentachlorophenol	50	26.2	52	30-136
108-95-2	Phenol	50	20.0	40 ✓	10-110
58-90-2	2,3,4,6-Tetrachlorophenol	50	34.8	70	47-118
95-95-4	2,4,5-Trichlorophenol	50	42.3	85	55-116
88-06-2	2,4,6-Trichlorophenol	50	47.1	94	56-115
98-86-2	Acetophenone	50	43.7	87	52-111
1912-24-9	Atrazine	50	54.7	109	62-134
100-52-7	Benzaldehyde	50	35.4	71	40-129
101-55-3	4-Bromophenyl phenyl ether	50	42.6	85	54-121
85-68-7	Butyl benzyl phthalate	50	54.4	109	20-143
92-52-4	1,1'-Biphenyl	50	43.6	87	51-106
91-58-7	2-Chloronaphthalene	50	41.8	84	48-104
106-47-8	4-Chloroaniline J | UJ	50	16.4	(33)	10-110
86-74-8	Carbazole	50	48.9	98	56-110
105-60-2	Caprolactam J | UJ	50	10.3	(21)	10-110
111-91-1	bis(2-Chloroethoxy)methane	50	31.1	62	47-117
111-44-4	bis(2-Chloroethyl)ether	50	40.5	81	48-115
108-60-1	bis(2-Chloroisopropyl)ether	50	35.9	72	44-112
7005-72-3	4-Chlorophenyl phenyl ether	50	44.8	90	50-117
121-14-2	2,4-Dinitrotoluene	50	55.3	111	57-122
606-20-2	2,6-Dinitrotoluene	50	51.1	102	58-122
91-94-1	3,3'-Dichlorobenzidine	100	62.9	63	10-110
123-91-1	1,4-Dioxane J | UJ	50	13.7	(27)	10-110
132-64-9	Dibenzofuran	50	45.9	92	55-108
84-74-2	Di-n-butyl phthalate	50	51.8	104	45-123
117-84-0	Di-n-octyl phthalate	50	56.3	113	37-144

JR 1/16/17

* = Outside of Control Limits.

8.2.2

8

Blank Spike Summary

Job Number: JC34064
Account: HLANJPR AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99513-BS1	2M90285.D	1	12/30/16	CS	12/28/16	OP99513	E2M4007

The QC reported here applies to the following samples: Method: SW846 8270D

JC34064-7, JC34064-8, JC34064-9

50-140 / 30-140

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
84-66-2	Diethyl phthalate	50	47.9	96	23-130
131-11-3	Dimethyl phthalate	50	46.0	92	10-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	51.3	103	36-138
118-74-1	Hexachlorobenzene	50	42.0	84	49-122
87-68-3	Hexachlorobutadiene J/MJ	50	23.5	47	24-112
77-47-4	Hexachlorocyclopentadiene J/MJ	100	30.5	31	14-119
67-72-1	Hexachloroethane	50	30.3	61	31-107
78-59-1	Isophorone	50	33.2	66	52-119
91-57-6	2-Methylnaphthalene	50	35.9	72	45-107
88-74-4	2-Nitroaniline	50	48.3	97	51-127
99-09-2	3-Nitroaniline	50	30.4	61	10-110
100-01-6	4-Nitroaniline	50	49.0	98	50-112
98-95-3	Nitrobenzene	50	31.9	64	44-116
621-64-7	N-Nitroso-di-n-propylamine	50	38.0	76	49-117
86-30-6	N-Nitrosodiphenylamine	50	46.7	93	51-113
95-94-3	1,2,4,5-Tetrachlorobenzene	50	43.0	86	36-114

JR 1/16/17

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	51%	14-88%
4165-62-2	Phenol-d5	38%	10-110%
118-79-6	2,4,6-Tribromophenol	91%	39-149%
4165-60-0	Nitrobenzene-d5	66%	32-128%
321-60-8	2-Fluorobiphenyl	85%	35-119%
1718-51-0	Terphenyl-d14	99%	10-126%

8.2.2

8

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC34064
Account: HLANJPR AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99513-MS	2M90291.D	1	12/30/16	CS	12/28/16	OP99513	E2M4007
OP99513-MSD	2M90292.D	1	12/30/16	CS	12/28/16	OP99513	E2M4007
JC34064-7	2M90369.D	1	01/03/17	AN	12/28/16	OP99513	E2M4010

GAGW-02

The QC reported here applies to the following samples: Method: SW846 8270D 50-140 / 30-140 |RPD| ≤ 20

JC34064-7, JC34064-8, JC34064-9

CAS No.	Compound	JC34064-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
95-57-8	2-Chlorophenol	ND		109	77.5	71	109	77.0	71	1	49-110/20
59-50-7	4-Chloro-3-methyl phenol	ND		109	83.9	77	109	82.2	76	2	44-121/18
120-83-2	2,4-Dichlorophenol	ND		109	77.0	71	109	73.4	68	5	42-120/19
105-67-9	2,4-Dimethylphenol J|UJ	ND		109	23.6	22* a	109	17.9	16* a	27* b	33-132/23
51-28-5	2,4-Dinitrophenol	ND		217	204	94	217	196	90	4	21-145/26
534-52-1	4,6-Dinitro-o-cresol	ND		109	115	106	109	111	102	4	25-134/27
95-48-7	2-Methylphenol	ND		109	76.1	70	109	74.2	68	3	47-112/18
	3&4-Methylphenol	ND		109	76.6	70	109	71.2	66	7	44-113/19
88-75-5	2-Nitrophenol	ND		109	83.7	77	109	82.8	76	1	45-118/20
100-02-7	4-Nitrophenol	ND		109	93.3	86	109	88.3	81	6	23-144/28
87-86-5	Pentachlorophenol	ND		109	62.8	58	109	55.8	51	12	25-151/25
108-95-2	Phenol	ND		109	66.6	61	109	66.2	61	1	22-100/22
58-90-2	2,3,4,6-Tetrachlorophenol	ND		109	71.7	66	109	70.3	65	2	44-122/21
95-95-4	2,4,5-Trichlorophenol	ND		109	88.5	81	109	90.4	83	2	51-124/20
88-06-2	2,4,6-Trichlorophenol	ND		109	96.4	89	109	96.0	88	0	53-120/21
98-86-2	Acetophenone	ND		109	89.8	83	109	84.2	77	6	31-141/23
1912-24-9	Atrazine	ND		109	114	105	109	109	100	4	42-152/23
100-52-7	Benzaldehyde	ND		109	72.1	66	109	71.8	66	0	10-164/30
101-55-3	4-Bromophenyl phenyl ether	ND		109	92.9	85	109	90.6	83	3	51-124/23
85-68-7	Butyl benzyl phthalate	ND		109	110	101	109	108	99	2	21-146/28
92-52-4	1,1'-Biphenyl	ND		109	94.7	87	109	94.1	87	1	27-142/23
91-58-7	2-Chloronaphthalene	ND		109	90.3	83	109	89.7	83	1	51-109/23
106-47-8	4-Chloroaniline J+ |R NJ	ND		109	ND	0* a	109	ND	0* a	nc	10-110/55
86-74-8	Carbazole	ND		109	97.9	90	109	92.5	85	6	52-116/22
105-60-2	Caprolactam J|UJ	ND		109	37.9	35	109	38.4	35	1	10-106/34
111-91-1	bis(2-Chloroethoxy)methane	ND		109	68.5	63	109	65.9	61	4	46-120/24
111-44-4	bis(2-Chloroethyl)ether	ND		109	79.5	73	109	76.8	71	3	42-123/28
108-60-1	bis(2-Chloroisopropyl)ether	ND		109	73.1	67	109	70.7	65	3	41-117/25
7005-72-3	4-Chlorophenyl phenyl ether	ND		109	96.0	88	109	93.5	86	3	48-121/21
121-14-2	2,4-Dinitrotoluene	ND		109	116	107	109	113	104	3	54-123/27
606-20-2	2,6-Dinitrotoluene	ND		109	107	98	109	104	96	3	55-125/26
91-94-1	3,3'-Dichlorobenzidine J+|R	ND		217	ND	0* a	217	ND	0* a	nc	10-107/47
123-91-1	1,4-Dioxane J|UJ	ND		109	33.5	31	109	37.1	34	10	10-119/31
132-64-9	Dibenzofuran	ND		109	95.6	88	109	93.5	86	2	53-112/22
84-74-2	Di-n-butyl phthalate	ND		109	111	102	109	105	97	6	38-129/23
117-84-0	Di-n-octyl phthalate	ND		109	126	116	109	123	113	2	35-145/26

* = Outside of Control Limits.

1/16/17

8.3.2 8

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC34064
Account: HLANJPR AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99513-MS	2M90291.D	1	12/30/16	CS	12/28/16	OP99513	E2M4007
OP99513-MSD	2M90292.D	1	12/30/16	CS	12/28/16	OP99513	E2M4007
JC34064-7	2M90369.D	1	01/03/17	AN	12/28/16	OP99513	E2M4010

GAGW-02

The QC reported here applies to the following samples: Method: SW846 8270D

50-140 | 30-140 RPD < 20

JC34064-7, JC34064-8, JC34064-9

CAS No.	Compound	JC34064-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
84-66-2	Diethyl phthalate	ND		109	102	94	109	100	92	2	16-136/30
131-11-3	Dimethyl phthalate	ND		109	96.2	89	109	95.8	88	0	10-143/39
117-81-7	bis(2-Ethylhexyl)phthalate	ND		109	108	99	109	108	99	0	34-141/28
118-74-1	Hexachlorobenzene	ND		109	89.3	82	109	87.3	80	2	46-125/24
87-68-3	Hexachlorobutadiene J (LJ)	ND		109	54.6	50	109	52.1	48	5	26-121/24
77-47-4	Hexachlorocyclopentadiene	ND	J (LJ)	217	83.9	39	217	71.1	33	17	10-133/31
67-72-1	Hexachloroethane	ND		109	63.2	58	109	59.7	55	6	35-111/26
78-59-1	Isophorone	ND		109	71.6	66	109	70.9	65	1	47-126/23
91-57-6	2-Methylnaphthalene	ND		109	78.5	72	109	76.6	70	2	34-123/24
88-74-4	2-Nitroaniline	ND		109	83.0	76	109	80.0	74	4	46-137/23
99-09-2	3-Nitroaniline J (LJ) (prot. ND) (vds)	ND		109	11.8	11	109	8.6	8* [a]	31	10-110/50
100-01-6	4-Nitroaniline J (LJ)	ND		109	31.3	29* [a]	109	22.1	20* [a]	34* [b]	38-118/25
98-95-3	Nitrobenzene	ND		109	96.7	89	109	100	92	3	35-130/25
621-64-7	N-Nitroso-di-n-propylamine	ND		109	77.3	71	109	74.1	68	4	45-123/22
86-30-6	N-Nitrosodiphenylamine	ND		109	94.8	87	109	86.6	80	9	46-123/24
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		109	97.7	90	109	98.3	90	1	25-142/24

CAS No.	Surrogate Recoveries	MS	MSD	JC34064-7	Limits
367-12-4	2-Fluorophenol	68%	69%	50%	14-88%
4165-62-2	Phenol-d5	60%	61%	33%	10-110%
118-79-6	2,4,6-Tribromophenol	89%	86%	87%	39-149%
4165-60-0	Nitrobenzene-d5	66%	64%	73%	32-128%
321-60-8	2-Fluorobiphenyl	82%	82%	80%	35-119%
1718-51-0	Terphenyl-d14	94%	93%	89%	10-126%

Dr 1/16/17

(a) Outside control limits due to matrix interference.
(b) Outside of in house control limits.

* = Outside of Control Limits.

8.3.2

8

Sample Calc

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\EZ5850\
Data File : z117716.D
Acq On : 4 Jan 2017 1:18 am
Operator : chriss2
Sample : jc34064-1
Misc : op99456,ez5850,930
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 04 09:03:28 2017
Quant Method : C:\MSDCHEM\1\METHODS\MZ5841.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Tue Jan 03 15:45:34 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.483	152	85095	40.00	ppm	-0.04
24) Naphthalene-d8	5.402	136	320840	40.00	ppm	-0.04
47) Acenaphthene-d10	6.726	164	194926	40.00	ppm	-0.04
69) Phenanthrene-d10	8.254	188	351506	40.00	ppm	-0.05
83) Chrysene-d12	11.999	240	373478	40.00	ppm	-0.04
91) Perylene-d12	14.072	264	360832	40.00	ppm	-0.03
101) 1,4-Dichlorobenzene-d4a	4.483	152	85095	40.00	ppm	-0.04
103) Phenanthrene-d10a	8.254	188	351506	40.00	ppm	-0.04
107) Chrysene-d12a	11.999	240	373478	40.00	ppm	-0.04
109) Acenaphthene-d10a	6.726	164	194926	40.00	ppm	-0.04
111) Naphthalene-d8a	5.402	136	320840	40.00	ppm	-0.04
113) Chrysene-d12b	11.999	240	373478	40.00	ppm	-0.04
System Monitoring Compounds						
5) 2-Fluorophenol	3.510	112	83667	27.59	ppm	-0.03
Spiked Amount 50.000			Recovery =	55.18%		
8) Phenol-d5	4.237	99	70570	19.53	ppm	-0.02
Spiked Amount 50.000			Recovery =	39.06%		
25) Nitrobenzene-d5	4.883	82	114890	40.85	ppm	-0.04
Spiked Amount 50.000			Recovery =	81.70%		
51) 2-Fluorobiphenyl	6.176	172	251890	37.07	ppm	-0.04
Spiked Amount 50.000			Recovery =	74.14%		
73) 2,4,6-Tribromophenol	7.480	330	48761	50.35	ppm	-0.04
Spiked Amount 50.000			Recovery =	100.70%		
85) Terphenyl-d14	10.455	244	310816	39.86	ppm	-0.04
Spiked Amount 50.000			Recovery =	79.72%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	1.972	88	3976	✓3.36	ppm	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

$$\text{Conc} = \frac{3976}{85095} \times \frac{40}{.556} \times \frac{1}{.930} = 3.61 \frac{ug}{L}$$

1,4-dioxane

OK

JR 11/30/17

9.1.1 9

No Qual
JR 1/17/17

PESTICIDES

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Review Ave.
Method: 8081B
Laboratory: SGS New Jersey **SDG(s):** JC34064
Date: 1/17/17
Reviewer: Julia Riordi

Review Level [X] NYSDEC DUSR USEPA Region II Guideline

1. ☑ **Case Narrative Review and Data Package Completeness** COMMENTS
   Were problems noted? No problems affecting sample results
   Are Field Sample IDs and Locations assigned correctly? (YES) NO (circle one)
   Were all the samples on the COC analyzed for the requested analyses? (YES) NO (circle one)
2. ☑ **Holding time (HT) and Sample Collection**

   Soil: 14 days from collection to extraction; 40 days from extraction to analysis
   Water: 7 days from collection to extraction; 40 days from extraction to analysis
   Hold time met for all samples? (YES) NO (circle one)

3. ☑ **QC Blanks**
   Are method blanks free of contamination? (YES) NO (circle one)
   Are Rinse blanks free of contamination? (YES) NO NA (circle one)

4. ☑ **Second Column Confirmation – Data Package Narrative Review**
   Did the laboratory narrative identify sample results for which the percent difference between columns was ≥ 25 (Region II criteria) for PCBs? YES (NO) NA (circle one)
   All samples ND
   Did the laboratory qualify results based on the percent difference between columns? YES (NO)
   If yes to above, use professional judgment to evaluate data and qualify results if needed

5. ☑ **Instrument Calibration – Data Package Narrative Review**
   Did the laboratory narrative identify compounds that were not within criteria in the initial and/or continuing calibration standards? YES NO (circle one)

   Initial Calibration criteria %RSD=20 (alpha-BHC, delta-BHC = 25, Toxaphene = 30)
   Continuing Calibration criteria %D=20

   Did the laboratory qualify results based on initial or continuing calibration exceedances? YES NO
   If yes to above, use professional judgment to evaluate data and qualify results if needed

6. ☑ **Surrogate Recovery** (soil and water limits: 30-150%)

   Were all results within limits? (YES) NO (circle one) Conf. run for GAGW-06I had high RMX recovery but no impact on reported results (ND), and reported from initial run)

7. ☑ **Matrix Spike** (Use lab limits; refer to limits listed in SOP HW-44 Oct 2006 if no lab limits are listed)

   Were MS/MSDs submitted/analyzed? YES (NO)

   Were all results within laboratory limits? YES NO (NA) (circle one)

8. ☑ **Field Duplicates** (RPD limits for soil=100, water = 50)

   Were Field Duplicates submitted/analyzed? (YES) NO
   GAGW-08R / GAGW-DUP1 Both ND
   Were RPDs within the limits? (YES) NO NA (circle one)

9. ☑ **Laboratory Control Samples** (Use lab limits; refer to limits in SOP HW-44 Oct 2006 if no lab limits)

Were all results within laboratory limits? (YES) NO (circle one)
Limits used were: Lab Limits (Region II SOP HW-44 Oct 2006) (circle one)

10. ☑ **Raw Data Review and Calculation Checks**

8/13/17 ~~See attached~~ All ND; chromatograms OK

11. ☑ **Electronic Data Review and Edits**

Does the EDD match the Form Is? (YES) NO (circle one)

12. ☑ **Tables Review**

Table 1 (Samples and Analytical Methods)
Table 2 (Analytical Results)
Table 3 (Qualification Actions)
Were all tables produced and reviewed? (YES) NO (circle one)

Extractables by GC By Method SW846 8081B

Matrix: AQ	Batch ID: OP99449

- All samples were extracted within the recommended method holding time.
- Sample(s) LA28801-1MS, LA28801-1MSD, OP99449-MSMSD were used as the QC samples indicated. N/A
- All method blanks for this batch meet method specific criteria.
- JC34064-8: Confirmation run for internal standard areas. out on one of two columns but all pesticides ND in sample; no qual
- JC34064-8 for Tetrachloro-m-xylene: High percent recoveries and no positive found in the sample. per (pat) jvds 1/17/17

Extractables by GC By Method SW846 8082A

Matrix: AQ	Batch ID: OP99448

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34069-1AMS, JC34069-1AMSD, OP99448-MSMSD were used as the QC samples indicated.

Metals By Method SW846 6010C

Matrix: AQ	Batch ID: MP97836

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-1MS, JC34064-1MSD, JC34064-1SDL were used as the QC samples for metals.
- Matrix Spike / Matrix Spike Duplicate Recovery(s) for Sodium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- RPD(s) for Serial Dilution for Aluminum, Arsenic, Beryllium, Cadmium, Chromium, Cobalt, Copper, Nickel, Silver are outside control limits for sample MP97836-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP97836-SD1 for Zinc: Serial dilution indicates possible matrix interference.

Metals By Method SW846 7470A

Matrix: AQ	Batch ID: MP97844

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC33920-6MS, JC33920-6MSD were used as the QC samples for metals.

Matrix: AQ	Batch ID: MP97846

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-7MS, JC34064-7MSD were used as the QC samples for metals.

Wet Chemistry By Method EPA 300/SW846 9056A

Matrix: AQ	Batch ID: GP2516

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC33997-1DUP, JC33997-1MS were used as the QC samples for Chloride, Sulfate, Chloride.

Matrix: AQ	Batch ID: GP2526

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-7DUP, JC34064-7MS, JC34064-8MS, JC34064-7DUP were used as the QC samples for Chloride, Sulfate.

No Quals
JR 1/17/17

PCBs

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Review Ave.
Method: 8082
Laboratory: SGS New Jersey **SDG(s):** JC34064
Date: 1/17/17
Reviewer: Julia Ricardi

Review Level [X] NYSDEC DUSR USEPA Region II Guideline

1. **Case Narrative Review and Data Package Completeness** COMMENTS
   Were problems noted? No
   Are Field Sample IDs and Locations assigned correctly? (YES) NO (circle one)
   Were all the samples on the COC analyzed for the requested analyses? (YES) NO (circle one)

2. **Holding time and Sample Collection**

   Soil: 14 days from collection to extraction; 40 days from extraction to analysis
   Water: 7 days from collection to extraction; 40 days from extraction to analysis
   Hold time met for all samples? (YES) NO (circle one)

3. **QC Blanks**

   Are method blanks free of contamination? (YES) NO (circle one)

   Are Rinse blanks free of contamination? (YES) NO NA (circle one)

4. **Second Column Confirmation – Data Package Narrative Review**
   Did the laboratory narrative identify sample results for which the percent difference between columns was ≥ 25 (Region II criteria) for PCBs? YES (NO) NA (circle one)
   All samples ND
   Did the laboratory qualify results based on the percent difference between columns? YES (NO)
   If yes to above, use professional judgment to evaluate data and qualify results if needed

5. **Instrument Calibration – Data Package Narrative Review**
   Did the laboratory narrative identify compounds that were not within criteria in the initial and/or continuing calibration standards? YES (NO) (circle one)

   Aroclors ICAL %RSD criteria = 20
   Aroclors Continuing Calibration %D criteria = 15

   Did the laboratory qualify results based on initial or continuing calibration exceedances? YES (NO)
   If yes to above, use professional judgment to evaluate data and qualify results if needed

6. **Surrogate Recovery**

   Were all percent recoveries within limits? (30-150 project limits) (YES) NO (circle one)

7. **Matrix Spike**

   Were MS/MSDs submitted/analyzed? YES (NO)

   Were all percent recoveries and RPDs within limits? (soil and water project limit 29-135, RPD<20) YES NO (NA) (circle one)

PCB p. 2 of 2

8. **Duplicates**

Were Field Duplicates submitted/analyzed? (YES) NO
GAGW-08R / GAGW-DUP 1 OK
Were all results within Region II limits? (soil RPD<100, water RPD<50) Yes, both ND

9. **Laboratory Control Sample Results**

Were all results within limits? (50-150 project limits) (YES) NO (circle one)

10. **Raw Data Review and Calculation Checks**

dv 1/30/13 ~~See attached~~ AM ND; chromatograms ND

11. **Electronic Data Review and Edits**

Does the EDD match the Form Is? (YES) NO (circle one)

12. **Tables Review**

Table 1 (Samples and Analytical Methods)
Table 2 (Analytical Results)
Table 3 (Qualification Actions)
Were all tables produced and reviewed? (YES) NO (circle one)

Extractables by GC By Method SW846 8081B

Matrix: AQ	Batch ID: OP99449

- All samples were extracted within the recommended method holding time.
- Sample(s) LA28801-1MS, LA28801-1MSD, OP99449-MSMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- JC34064-8: Confirmation run for internal standard areas.
- JC34064-8 for Tetrachloro-m-xylene: High percent recoveries and no positive found in the sample.

Extractables by GC By Method SW846 8082A

Matrix: AQ	Batch ID: OP99448

- All samples were extracted within the recommended method holding time. ✓
- All method blanks for this batch meet method specific criteria. ✓
- Sample(s) JC34069-1AMS, JC34069-1AMSD, OP99448-MSMSD were used as the QC samples indicated. N/A

Metals By Method SW846 6010C

Matrix: AQ	Batch ID: MP97836

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-1MS, JC34064-1MSD, JC34064-1SDL were used as the QC samples for metals.
- Matrix Spike / Matrix Spike Duplicate Recovery(s) for Sodium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- RPD(s) for Serial Dilution for Aluminum, Arsenic, Beryllium, Cadmium, Chromium, Cobalt, Copper, Nickel, Silver are outside control limits for sample MP97836-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP97836-SD1 for Zinc: Serial dilution indicates possible matrix interference.

Metals By Method SW846 7470A

Matrix: AQ	Batch ID: MP97844

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC33920-6MS, JC33920-6MSD were used as the QC samples for metals.

Matrix: AQ	Batch ID: MP97846

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-7MS, JC34064-7MSD were used as the QC samples for metals.

Wet Chemistry By Method EPA 300/SW846 9056A

Matrix: AQ	Batch ID: GP2516

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC33997-1DUP, JC33997-1MS were used as the QC samples for Chloride, Sulfate, Chloride.

Matrix: AQ	Batch ID: GP2526

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-7DUP, JC34064-7MS, JC34064-8MS, JC34064-7DUP were used as the QC samples for Chloride, Sulfate.

METALS

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Review Ave.
Method(s): 6010C / 7470A
Laboratory: SGS New Jersey **SDG(s):** JC34064
Date: 1/16/17
Reviewer: Julie Rizzardi

Review Level [X] NYSDEC DUSR USEPA Region II Guideline

1. [✓] **Case Narrative Review and Data Package Completeness** COMMENTS
Were problems noted? See attached
Were all the samples on the COC analyzed for the requested analyses? YES NO (circle one)
Samples AMGW-10D, GAGW-08R, GAGW-DUP, GAGW-04D, GAGW-05R were sp not specified for metals on COC but metals were reported; results were evaluated as reported by the lab. Lab contacted via email 1/17/17 for documentation (attached)
Are Field Sample IDs and Locations assigned correctly? YES NO (circle one)

2. [✓] **Holding time and Sample Collection**
Were all samples were all prepped and analyzed with the holding time (6 month) (YES) NO

3. [✓] **QC Blanks**
Are method blanks clean? YES (NO) (circle one)
All sample results > 5x action level or ND
Are Initial and continuing calibration blanks clean? YES (NO) (circle one)
No impact on sample results

4. [✓] **Instrument Calibration – Data Package Narrative Review**
Did the laboratory narrative identify any results that were not within criteria in the initial and/or continuing calibration standards? YES (NO) (circle one)

Initial calibration criteria based on method guidance and continuing calibration standards recovery 90-110% (80-120% Hg)

Did the laboratory qualify results based on initial or continuing calibration exceedances? YES (NO)
If yes to above, use professional judgment to evaluate data and qualify results if needed

5. [✓] **Laboratory Control Sample Results**
Were all results were within 80-120% limits? (YES) NO (circle one)

6. [✓] **Matrix Spike**
Were MS/MSDs submitted/analyzed? (YES) NO
AMGW-10D MS/MSD
Were all results were within 75-125% limits? (YES) NO NA (circle one)

7. [✓] **Duplicates**
Were Field Duplicates submitted/analyzed? (YES) NO
GAGW-08R/GAGW-DUP: All w/in RPD 20 except Fe: RPD = 30 (J) all Fe result for GAGW samples
Aqueous RPD within limit? (20%) YES NO NA (circle one)
Soil RPD within limit? (35%) YES NO (NA) (circle one)
Lab Dup RPD <20% for water, 35% for soil values > 5X the CRQL (or ± CRQL) YES NO (NA)

8. [✓] Were both **Total and Dissolved** metals reported? YES (NO) NA (circle one)
If the dissolved concentration is > 20% of the total concentration then estimate (J) both results using professional judgment

9. [✓] **Percent solids** < 50% for any soil/sediment sample? YES NO (NA) (circle one)
If yes, estimate all results using professional judgment

- Serial dilution as noted in narrative (outside scope of review) - see attached summary for 2n (Qual)
- Na reported over curve w/ "HH" qualifier; lab contacted & reanalyzed & submitted revised report & EDD - all Na results (Qual)

10. ☑ **Raw Data Review and Calculation Checks**

See attached

11. ☑ **Electronic Data Review and Edits**

Does the EDD match the Form Is? (YES) NO (circle one)

12. ☑ **DUSR Tables Review**

Table 1 (Samples and Analytical Methods)
Table 2 (Analytical Results)
Table 3 (Qualification Actions)

Were all tables produced and reviewed? (YES) NO (circle one)

1

Sample Summary

AMEC Environment & Infrastructure, Inc.

Job No: JC34064

Review Avenue GWM, Long Island City, NY
Project No: 3480160502 / PO#CO12700305

Sample Number	Collected Date	Time By	Received	Matrix Code	Matrix Type	Client Sample ID
JC34064-1	12/20/16	08:00 JL	12/20/16	AQ	Ground Water	AMGW-10D
JC34064-2	12/20/16	09:05 JL	12/20/16	AQ	Ground Water	GAGW-08R
JC34064-3	12/20/16	09:05 JL	12/20/16	AQ	Ground Water	GAGW-DUP
JC34064-4	12/20/16	11:20 JL	12/20/16	AQ	Ground Water	GAGW-04D
JC34064-5	12/20/16	12:35 JL	12/20/16	AQ	Ground Water	GAGW-05R
JC34064-6	12/20/16	12:35 JL	12/20/16	AQ	Trip Blank Water	TRIP BLANK
JC34064-7	12/21/16	08:05 JL	12/21/16	AQ	Ground Water	GAGW-02
JC34064-8	12/21/16	11:20 JL	12/21/16	AQ	Ground Water	GAGW-06I
JC34064-9	12/21/16	06:50 JL	12/21/16	AQ	Equipment Blank	EQUIPMENT BLANK
JC34064-10	12/21/16	11:20 JL	12/21/16	AQ	Trip Blank Water	TRIP BLANK

Extractables by GC By Method SW846 8081B

Matrix: AQ	Batch ID: OP99449

- All samples were extracted within the recommended method holding time.
- Sample(s) LA28801-1MS, LA28801-1MSD, OP99449-MSMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- JC34064-8: Confirmation run for internal standard areas.
- JC34064-8 for Tetrachloro-m-xylene: High percent recoveries and no positive found in the sample.

Extractables by GC By Method SW846 8082A

Matrix: AQ	Batch ID: OP99448

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34069-1AMS, JC34069-1AMSD, OP99448-MSMSD were used as the QC samples indicated.

Metals By Method SW846 6010C

Matrix: AQ	Batch ID: MP97836

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-1MS, JC34064-1MSD, JC34064-1SDL were used as the QC samples for metals. ✓
- Matrix Spike / Matrix Spike Duplicate Recovery(s) for Sodium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information. See checklist
- RPD(s) for Serial Dilution for Aluminum, Arsenic, Beryllium, Cadmium, Chromium, Cobalt, Copper, Nickel, Silver are outside control limits for sample MP97836-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL). ✓
- MP97836-SD1 for Zinc: Serial dilution indicates possible matrix interference. See checklist

Metals By Method SW846 7470A

Matrix: AQ	Batch ID: MP97844

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC33920-6MS, JC33920-6MSD were used as the QC samples for metals. N/A

Matrix: AQ	Batch ID: MP97846

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-7MS, JC34064-7MSD were used as the QC samples for metals. ✓

JM 1/11/17

Wet Chemistry By Method EPA 300/SW846 9056A

Matrix: AQ	Batch ID: GP2516

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC33997-1DUP, JC33997-1MS were used as the QC samples for Chloride, Sulfate, Chloride.

Matrix: AQ	Batch ID: GP2526

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-7DUP, JC34064-7MS, JC34064-8MS, JC34064-7DUP were used as the QC samples for Chloride, Sulfate.

Ricardi, Julie A

From: Komar, Diane (Dayton) <Diane.Komar@sgs.com>
Sent: Thursday, December 22, 2016 12:04 PM
To: Logan, Jazmin
Cc: Komar, Diane (Dayton); Axelrod, Daniel (Dayton)
Subject: RE: Review Avenue Samples

Jazmin – I realized I had never sent a reply to you regarding your message below.

I had already instructed the lab to log in the Fe2 analysis on those samples where we received volume, but, it wasn't checked off on the coc hours before I had received your message below.

Fe2 is an "immediate" analysis test for the lab, I didn't want to add delays, when I knew it was required.

In the end if it wasn't needed, we simply would of cancelled it, we always try to err on the side of caution when holding times are ticking away.

All samples are currently logged in correctly, please let us know if there is anything else that you need. Thank you.

Diane M. Komar
Environment, Health and Safety
Business Development Manager

Phone: +1 732 329 0200 ext 1504
Mobile: +1 732-397-7782

Email: diane.komar@sgs.com

From: Logan, Jazmin [mailto:jazmin.logan@amecfw.com]
Sent: Tuesday, December 20, 2016 7:07 PM
To: Komar, Diane (Dayton)
Subject: Review Avenue Samples

Hi Diane,

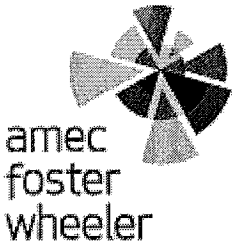
I was looking over my chains and noticed that I skipped over Tal Metals and Ferrous Iron for the analysis on

AMGW-10D
GAGW-08R
GAGW-DUP (only TAL Metals; no ferrous iron)
GAGW-04D
GAGW-05R

The bottles for those are filled up but I just missed listing them on the COCs. These samples were taken today Tuesday; 12/20. Can you please make sure that those are added on? Please call me if there are any questions.

Jazmin Logan
Project Geologist

Amec Foster Wheeler
Environment & Infrastructure
1979 Marcus Avenue, Suite 210
Lake Success, NY 11042
Office: (516) 622-2254 Mobile: (347) 351-2009 Email: jazmin.logan@amecfw.com amecfw.com



BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC34064
Account: HLANJPR - AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

QC Batch ID: MP97836
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:				12/26/16		12/26/16		
Metal	RL	IDL	MDL	MB raw	final	MB raw	final	
Aluminum	200	20	21	5.1	<200	6.5	<200	
Antimony	6.0	1.2	3.3	2.7	<6.0	1.6	<6.0	ND
Arsenic	3.0	1.5	2.2	-0.30	<3.0	-1.2	<3.0	
Barium	200	.5	.44	-0.30	<200	0.0	<200	
Beryllium	1.0	.3	.25	0.0	<1.0	0.10	<1.0	
Bismuth	20	2.3	2.9					
Boron	100	1.9	3.9					
Cadmium	3.0	.2	.4	0.30	<3.0	0.30	<3.0	ND
Calcium	5000	8.2	33	6.6	<5000	14.3	<5000	> 5x
Chromium	10	.6	.81	0.10	<10	0.70	<10	ND or > 5x
Cobalt	50	.2	.69	0.20	<50	0.10	<50	ND
Copper	10	.8	2.4	-0.10	<10	-0.50	<10	
Iron	100	8.9	12	2.7	<100	5.1	<100	
Lead	3.0	1	2.3	1.5	<3.0	0.10	<3.0	ND
Lithium	20	2.9	4					
Magnesium	5000	88	85	6.6	<5000	0.0	<5000	
Manganese	15	.1	.39	0.10	<15	0.30	<15	> 5x
Molybdenum	20	.3	.88					
Nickel	10	.4	.76	0.40	<10	-0.10	<10	ND
Palladium	50	2.1	3.7					
Potassium	10000	78	120	-15	<10000	25.8	<10000	
Selenium	10	2.6	4.1	-2.0	<10	2.4	<10	
Silicon	200	2.6	29					
Silver	10	.7	.88	0.80	<10	-0.20	<10	ND
Sodium	10000	20	24	63.0	<10000	81.3	<10000	> 5x ✓ dr 1/14/17
Sulfur	50	4.8	6.9					
Strontium	10	.2	.22					
Thallium	2.0	1.2	1.9	-0.70	<2.0	-0.30	<2.0	
Tin	10	.5	2.3					No quals dr 1/11/17
Titanium	10	.7	.99					
Tungsten	50	1.1	3.2					
Vanadium	50	.5	.66	0.10	<50	0.20	<50	
Zinc	20	.1	1.3	1.0	<20	0.80	<20	ND or > 5x

14.5.1 14

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC34064
Account: HLANJPR - AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

QC Batch ID: MP97836
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 12/26/16

Metal	JC34064-1 Original	MS	Spikelot MPSPK1	% Rec	QC Limits
Aluminum	55.8	23500	25000	93.8	75-125
Antimony	0.0	1800	2000	90.0	75-125
Arsenic	4.1	1790	2000	89.3	75-125
Barium	79.7	1900	2000	91.0	75-125
Beryllium	0.40	1850	2000	92.5	75-125
Bismuth					
Boron					
Cadmium	0.50	1810	2000	90.5	75-125
Calcium	194000	220000	25000	104.0	75-125
Chromium	3.6	1810	2000	90.3	75-125
Cobalt	0.80	1770	2000	88.5	75-125
Copper	3.7	1810	2000	90.3	75-125
Iron	1010	24500	25000	94.0	75-125
Lead	0.0	1760	2000	88.0	75-125
Lithium					
Magnesium	66300	90100	25000	95.2	75-125
Manganese	956	2790	2000	91.7	75-125
Molybdenum					
Nickel	4.0	1770	2000	88.3	75-125
Palladium					
Potassium	5570	29000	25000	93.7	75-125
Selenium	0.0	1770	2000	88.5	75-125
Silicon					
Silver	1.7	230	250	91.3	75-125
Sodium	334000	371000	25000	148.0(a) OK	75-125
Sulfur					
Strontium					
Thallium	0.0	1730	2000	86.5	75-125
Tin					
Titanium					
Tungsten					
Vanadium	0.0	1820	2000	91.0	75-125
Zinc	75.1	1810	2000	86.7	75-125

(4x) — reanalyzed due to Na over curve in original analysis
JR 11/17/17 new %R = 80 OK

JR 11/19/17

14.5.2 14

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC34064
Account: HLANJPR - AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

QC Batch ID: MP97836
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 12/26/16

Metal	JC34064-1 Original	MSD	Spikelot MPSPK1	% Rec	MSD RPD	QC Limit
Aluminum	55.8	23400	25000	93.4	0.4	20
Antimony	0.0	1810	2000	90.5	0.6	20
Arsenic	4.1	1800	2000	89.8	0.6	20
Barium	79.7	1900	2000	91.0	0.0	20
Beryllium	0.40	1850	2000	92.5	0.0	20
Bismuth						
Boron						
Cadmium	0.50	1820	2000	91.0	0.6	20
Calcium	194000	217000	25000	92.0	1.4	20
Chromium	3.6	1810	2000	90.3	0.0	20
Cobalt	0.80	1780	2000	89.0	0.6	20
Copper	3.7	1810	2000	90.3	0.0	20
Iron	1010	24400	25000	93.6	0.4	20
Lead	0.0	1770	2000	88.5	0.6	20
Lithium						
Magnesium	66300	89800	25000	94.0	0.3	20
Manganese	956	2770	2000	90.7	0.7	20
Molybdenum						
Nickel	4.0	1780	2000	88.8	0.6	20
Palladium						
Potassium	5570	29000	25000	93.7	0.0	20
Selenium	0.0	1790	2000	89.5	1.1	20
Silicon						
Silver	1.7	230	250	91.3	0.0	20
Sodium	334000	367000	25000	132.0(a)	1.1	20
Sulfur						
Strontium						
Thallium	0.0	1740	2000	87.0	0.6	20
Tin						
Titanium						
Tungsten						
Vanadium	0.0	1820	2000	91.0	0.0	20
Zinc	75.1	1820	2000	87.2	0.6	20

(a) QC

(4x) → re-analyzed due to Na over curve in original run; still no impact since sample conc > 4x spike (new recovery = 60%)

JR 1/17/17

JR 1/19/17

14.5.2 14

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC34064
Account: HLANJPR - AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

QC Batch ID: MP97836
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 12/26/16

Metal	JC34064-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum	55.8	0.00	100.0(a)	0-10
Antimony	0.00	0.00	NC	0-10
Arsenic	4.10	0.00	100.0(a)	0-10
Barium	79.7	78.0	2.1	0-10
Beryllium	0.400	0.00	100.0(a)	0-10
Bismuth				
Boron				
Cadmium	0.500	0.00	100.0(a)	0-10
Calcium	194000	202000	4.5	0-10
Chromium	3.60	6.60	83.3 (a)	0-10
Cobalt	0.800	0.00	100.0(a)	0-10
Copper	3.70	4.30	16.2 (a)	0-10
Iron	1010	1040	2.6	0-10
Lead	0.00	0.00	NC	0-10
Lithium				
Magnesium	66300	69600	5.0	0-10
Manganese	956	977	2.2	0-10
Molybdenum				
Nickel	4.00	4.70	17.5 (a)	0-10
Palladium				
Potassium	5570	5860	5.3	0-10
Selenium	0.00	0.00	NC	0-10
Silicon				
Silver	1.70	0.00	100.0(a)	0-10
Sodium	334000	354000	5.9	0-10
Sulfur				
Strontium				
Thallium	0.00	0.00	NC	0-10
Tin				
Titanium				
Tungsten				
Vanadium	0.00	0.00	NC	0-10
Zinc (J)	75.1 <	84.2	12.1*(b)	0-10

→ Re-analyzed; new SD 1.1 OK (due to Na over curve)

On 1/17/17

potential low bias for reported Zn results; qualify sample only based on prof. judgment & since serial dilution eval is outside scope of DUSR review.

14.5.4 14

SGS ACCUTEST JC34064

Inst QC: MA41067

Sample Calc

Zoom In Zoom Out

Sample Name: ccb Acquired: 12/29/2016 20:49:28 Type: QC
Method: Accutest XPress(v183) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ba4554	Be3130	Cd2288	Co2286	Cr2677	Cu3247	Mn2576	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0004	.0001	.0002	.0001	-.0001	.0005	.0001	.0010
Stddev	.0001	.0001	.0002	.0000	.0003	.0002	.0000	.0001	.0003
%RSD	15.94	32.65	156.0	15.42	423.0	223.6	4.926	73.58	29.18
#1	.0005	.0005	.0003	.0003	.0003	-.0003	.0005	.0000	.0012
#2	.0004	.0003	-.0000	.0002	-.0001	.0001	.0005	.0002	.0008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	V_2924	Zn2062	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0006	.0012	-.0003	.0013	-.0012	.0005	.0156	.0069
Stddev	.0003	.0002	.0006	.0000	.0004	.0003	.0001	.0065	.0027
%RSD	76.98	36.80	51.13	11.13	32.30	25.60	21.66	41.78	38.73
#1	.0006	.0008	.0016	-.0004	.0010	-.0010	.0004	.0110	.0087
#2	.0002	.0005	.0007	-.0003	.0016	-.0014	.0005	.0202	.0050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Fe2599	Mg2790	K_7664	Na5895	B_2089	Mo2020	Pd3404	Si2124	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0079	.0096	.0489	.2925	F .0123	.0002	-.0014	-.0019	.0017
Stddev	.0021	.0035	.0876	.0138	.0005	.0001	.0005	.0002	.0005
%RSD	26.21	36.28	179.0	4.704	4.437	38.62	37.35	11.50	31.06
#1	.0094	.0121	.1108	.3022	.0127	.0002	-.0018	-.0021	.0013
#2	.0064	.0072	-.0130	.2828	.0119	.0003	-.0010	-.0018	.0020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					.0100				
Low Limit					-.0100				

Zoom In Zoom Out

Sample Name: ccb Acquired: 12/29/2016 20:49:28 Type: QC
Method: Accutest XPress(v183) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sr4077	Ti3349	W_2079	Zr3391	S_1820	Bi2230	Li6707	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0005	.0009	.0002	-.0015	.0020	.0025	-.0040
Stddev	.0000	.0000	.0007	.0001	.0026	.0010	.0016	.0032
%RSD	3.767	5.441	69.62	42.58	170.9	50.32	66.95	79.03
#1	.0003	.0004	.0014	.0002	.0003	.0013	.0013	-.0062
#2	.0003	.0005	.0005	.0003	-.0033	.0027	.0036	-.0018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	206270.	32770.	4699.5	9663.6
Stddev	8676.	1319.	21.0	39.0
%RSD	4.2063	4.0251	.44723	.40399
#1	212410.	33703.	4684.7	9636.0
#2	200140.	31837.	4714.4	9691.2

Zoom In Zoom Out

Sample Name: jc34064-3 Acquired: 12/29/2016 20:59:48 Type: Unk
Method: Accutest XPress(v183) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Conc = 204 ug/L

Elem	Ba4554	Be3130	Cd2288	Co2286	Cr2677	Cu3247	Mn2576	Ni2316
Avg	.0612	.0001	.0000	-.0003	.0017	.0012	.2040	.0017
Stddev	.0001	.0000	.0000	.0003	.0001	.0001	.0009	.0005
%RSD	.2122	56.18	818.6	97.22	6.372	10.98	.4222	31.12
#1	.0613	.0000	-.0000	-.0005	.0018	.0013	.2046	.0013
#2	.0611	.0001	.0000	-.0001	.0016	.0011	.2034	.0020

Elem	Ag3280	V_2924	Zn2062	As1890	Tl1908	Pb2203	Se1960	Sb2068
Avg	.0015	.0005	.0069	.0084	.0006	.0009	.0018	.0013
Stddev	.0002	.0001	.0000	.0009	.0005	.0003	.0029	.0005
%RSD	12.98	23.93	.5886	10.49	89.35	28.57	161.0	37.14
#1	.0014	.0006	.0069	.0078	.0002	.0011	.0038	.0009
#2	.0016	.0005	.0069	.0091	.0009	.0007	-.0002	.0016

Conc = 3640. ug/L

OK

Elem	Al3961	Ca3179	Fe2599	Mg2790	K_7664	Na5895	B_2089	Mo2020
Avg	.0131	230.0	3.640	66.54	4.973	F 359.9	.3099	.0001
Stddev	.0038	1.3	.019	.38	.036	.0	.0012	.0002
%RSD	29.27	.5581	.5110	.5639	.7223	.0048	.3921	209.2
#1	.0158	230.9	3.653	66.81	4.998	359.9	.3090	-.0000
#2	.0104	229.1	3.627	66.28	4.947	359.9	.3107	.0002

Elem	Pd3404	Si2124	Sn1899	Sr4077	Ti3349	W_2079	Zr3391	S_1820
Avg	.0059	23.69	-.0029	.5954	-.0015	.0253	F -.0124	68.51
Stddev	.0003	.02	.0005	.0046	.0005	.0002	.0001	.06
%RSD	5.795	.0791	17.20	.7691	30.68	.6231	.4501	.0853
#1	.0057	23.70	-.0026	.5986	-.0019	.0252	-.0123	68.46
#2	.0062	23.68	-.0033	.5921	-.0012	.0254	-.0124	68.55

Elem	Bi2230	Li6707	P_1774
Avg	.0040	.0183	.1124
Stddev	.0015	.0010	.0011
%RSD	38.01	5.490	1.016
#1	.0051	.0176	.1116
#2	.0029	.0190	.1132

Zoom In Zoom Out

Sample Name: jc34064-3 Acquired: 12/29/2016 20:59:48 Type: Unk
Method: Accutest XPress(v183) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_3600	Y_3710	Y_2243	In2306
Avg	181900.	31817.	4276.0	8584.9
Stddev	244.	41.	13.3	26.7
%RSD	.13399	.13008	.31079	.31052
#1	181730.	31787.	4266.6	8566.1
#2	182070.	31846.	4285.4	8603.8

OK
JR 11/30/17

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GENERAL CHEMISTRY
and RSK-175 Gases

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Review Ave.
Method : See Table 1
Laboratory: SGS New Jersey **SDG(s):** JC 340064
Date: 1/16/17
Reviewer: Julie Rizardi

Review Level [X] NYSDEC DUSR USEPA Region II Guideline

1. ☑ **Case Narrative Review and Data Package Completeness** COMMENTS
   Were problems noted? See attached and below for QC problems noted
   Were all the samples on the COC analyzed for the requested analyses? (YES) NO (circle one)
   Are Field Sample IDs and Locations assigned correctly? (YES) NO (circle one)

2. ☑ **Holding time and Sample Collection**
   Were all samples were all prepped and analyzed with the method holding time? YES (NO)
   (ferrous Iron: HT of 24 hrs used for evaluation (prof judgment in absence of regulated HT) – samples GAGW-02 and GAGW-08I analyzed after 24 hrs (~30-33 hrs); quality result estimated (J/UJ). Call others analyzed w/in 24 hrs (~10-14 hrs))

3. ☑ **QC Blanks**
   Are method blanks clean? YES (NO) (circle one) RSK-175: ND
   Are Initial and continuing calibration blanks clean? YES (NO) (circle one)
   See attached summary for qual)

4. ☑ **Instrument Calibration – Data Package Narrative Review**
   Did the laboratory narrative identify analytes that were not within criteria in the initial and/or continuing calibration standards? YES (NO)
   Did the laboratory qualify results based on initial or continuing calibration exceedances? YES (NO)
   If yes to above, use professional judgment to evaluate data and qualify results if needed

5. ☑ **Laboratory Control Sample Results**
   Were all results were within 80-120% limits? (YES) NO (circle one)
   RSK-175: OK

6. ☑ **Matrix Spike**
   Were MS/MSDs submitted/analyzed? (YES) NO All OK
   RSK-175: None

   Were all results were within 75-125% limits? (YES) NO NA (circle one)

7. ☑ **Duplicates**
   Were Field Duplicates submitted/analyzed? YES (NO)

   Aqueous RPD within limit? (20%) YES NO (NA) (circle one)
   Soil RPD within limit? (35%) YES NO (NA) (circle one)
   Lab dup RPD <20% for water, 35% for soil values > 5X the CRQL (or ± CRQL) (YES) NO NA

8. ☑ Were both **Total and Dissolved** parameters reported? YES (NO) NA (circle one)
   If the dissolved concentration is > 20% of the total concentration then estimate (J) both results

9. ☑ **Percent Solids** < 50% for any soil/sediment sample? YES NO (NA) (circle one)
   If yes, use professional judgment

10. ☑ **Raw Data Review and Calculation Checks**
    See attached

11. ☑ **Electronic Data Review and Edits** Does the EDD match the Form Is? (YES) NO (circle one)

12. ☑ **DUSR Table Review**
    Table 1 (Samples and Analytical Methods)
    Table 2 (Analytical Results)
    Table 3 (Qualification Actions)
    Were all tables produced and reviewed? (YES) NO (circle one)

1

Sample Summary

AMEC Environment & Infrastructure, Inc.

Job No: JC34064

Review Avenue GWM, Long Island City, NY
Project No: 3480160502 / PO#CO12700305

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
JC34064-1	12/20/16	08:00	JL	12/20/16	AQ	Ground Water	AMGW-10D
JC34064-2	12/20/16	09:05	JL	12/20/16	AQ	Ground Water	GAGW-08R
JC34064-3	12/20/16	09:05	JL	12/20/16	AQ	Ground Water	~~GAGW-DUP~~
JC34064-4	12/20/16	11:20	JL	12/20/16	AQ	Ground Water	GAGW-04D
JC34064-5	12/20/16	12:35	JL	12/20/16	AQ	Ground Water	GAGW-05R
JC34064-6	12/20/16	12:35	JL	12/20/16	AQ	Trip Blank Water	~~TRIP BLANK~~
JC34064-7	12/21/16	08:05	JL	12/21/16	AQ	Ground Water	GAGW-02
JC34064-8	12/21/16	11:20	JL	12/21/16	AQ	Ground Water	GAGW-06I
JC34064-9	12/21/16	06:50	JL	12/21/16	AQ	Equipment Blank	~~EQUIPMENT BLANK~~
JC34064-10	12/21/16	11:20	JL	12/21/16	AQ	Trip Blank Water	~~TRIP BLANK~~

Extractables by GCMS By Method SW846 8270D

Matrix: AQ	Batch ID: OP99456

- All samples were extracted within the recommended method holding time.
- Sample(s) JC33987-12MS, JC33987-12MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Phenol are outside control limits. Outside control limits due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for 2-Chloronaphthalene, 2-Chlorophenol, 2-Methylphenol, Phenol are outside control limits. Outside control limits due to matrix interference.

Matrix: AQ	Batch ID: OP99513

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-7MS, JC34064-7MSD were used as the QC samples indicated.
- Matrix Spike Recovery(s) for 2,4-Dimethylphenol, 3,3'-Dichlorobenzidine, 4-Chloroaniline, 4-Nitroaniline are outside control limits. Outside control limits due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for 3,3'-Dichlorobenzidine, 3-Nitroaniline, 4-Chloroaniline, 2,4-Dimethylphenol, 4-Nitroaniline are outside control limits. Outside control limits due to matrix interference.
- RPD(s) for MSD for 2,4-Dimethylphenol, 4-Nitroaniline are outside control limits for sample OP99513-MSD. Outside of in house control limits.

Extractables by GCMS By Method SW846 8270D BY SIM

Matrix: AQ	Batch ID: OP99456A

- All samples were extracted within the recommended method holding time.
- Sample(s) JC34146-3MS, JC34146-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ	Batch ID: OP99513A

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34180-1MS, JC34180-1MSD were used as the QC samples indicated.
- Matrix Spike / Matrix Spike Duplicate Recovery(s) for Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Chrysene, Fluoranthene, Fluorene, Naphthalene, Phenanthrene, Pyrene are outside control limits. Outside control limits due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Fluoranthene, Benzo(b)fluoranthene are outside control limits. Outside control limits due to matrix interference.
- RPD(s) for MSD for Acenaphthene, Acenaphthylene, Anthracene, Benzo(b)fluoranthene, Fluorene, Phenanthrene are outside control limits for sample OP99513A-MSD. Analytical precision exceeds in-house control limits.

Volatiles by GC By Method RSK-175

Matrix: AQ	Batch ID: GAA1103

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) LA28864-1DUP were used as the QC samples indicated. N/A
- RPD(s) for Duplicate for Ethene, Methane are outside control limits for sample LA28864-1DUP. Outside in house control limits. N/A

DN 1/18/17

Extractables by GC By Method SW846 8081B

Matrix: AQ	Batch ID: OP99449

- All samples were extracted within the recommended method holding time.
- Sample(s) LA28801-1MS, LA28801-1MSD, OP99449-MSMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- JC34064-8: Confirmation run for internal standard areas.
- JC34064-8 for Tetrachloro-m-xylene: High percent recoveries and no positive found in the sample.

Extractables by GC By Method SW846 8082A

Matrix: AQ	Batch ID: OP99448

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34069-1AMS, JC34069-1AMSD, OP99448-MSMSD were used as the QC samples indicated.

Metals By Method SW846 6010C

Matrix: AQ	Batch ID: MP97836

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-1MS, JC34064-1MSD, JC34064-1SDL were used as the QC samples for metals.
- Matrix Spike / Matrix Spike Duplicate Recovery(s) for Sodium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- RPD(s) for Serial Dilution for Aluminum, Arsenic, Beryllium, Cadmium, Chromium, Cobalt, Copper, Nickel, Silver are outside control limits for sample MP97836-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP97836-SD1 for Zinc: Serial dilution indicates possible matrix interference.

Metals By Method SW846 7470A

Matrix: AQ	Batch ID: MP97844

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC33920-6MS, JC33920-6MSD were used as the QC samples for metals.

Matrix: AQ	Batch ID: MP97846

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-7MS, JC34064-7MSD were used as the QC samples for metals.

Wet Chemistry By Method EPA 300/SW846 9056A

Matrix: AQ	Batch ID: GP2516

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC33997-1DUP, JC33997-1MS were used as the QC samples for Chloride, Sulfate, Chloride. N/A

Matrix: AQ	Batch ID: GP2526

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-7DUP, JC34064-7MS, JC34064-8MS, JC34064-7DUP were used as the QC samples for Chloride, Sulfate. ✓

Wet Chemistry By Method EPA 353.2/LACHAT

Matrix: AQ	Batch ID: GP2414

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34080-2DUP, JC34080-2MS were used as the QC samples for Nitrogen, Nitrate + Nitrite.
- Matrix Spike Recovery(s) for Nitrogen, Nitrate + Nitrite are outside control limits. Spike recovery indicates possible matrix interference. OK; unrelated sample

Matrix: AQ	Batch ID: GP2416

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-7DUP, JC34064-7MS were used as the QC samples for Nitrogen, Nitrate + Nitrite.
- Matrix Spike Recovery(s) for Nitrogen, Nitrate + Nitrite are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information. See checklist

Wet Chemistry By Method EPA353.2/SM4500NO2B

Matrix: AQ	Batch ID: R160457

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC34064-1 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Matrix: AQ	Batch ID: R160458

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC34064-2 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Matrix: AQ	Batch ID: R160459

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC34064-4 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Matrix: AQ	Batch ID: R160460

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC34064-5 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Matrix: AQ	Batch ID: R160492

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC34064-7 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Matrix: AQ	Batch ID: R160493

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JC34064-8 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Wet Chemistry By Method SM2320 B-11

Matrix: AQ	Batch ID: GN57311

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC33997-1DUP were used as the QC samples for Alkalinity, Total as CaCO3. N/A

Matrix: AQ	Batch ID: GN57316

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-1DUP were used as the QC samples for Alkalinity, Total as CaCO3. ✓

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Wet Chemistry By Method SM2340 C-11

Matrix: AQ	Batch ID: GN57319

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-1DUP, JC34064-1MS were used as the QC samples for Hardness, Total as CaCO3.

Wet Chemistry By Method SM3500FE B-11

Matrix: AQ	Batch ID: GN56906

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-1DUP were used as the QC samples for Iron, Ferrous.
- JC34064-5 for Iron, Ferrous: Field analysis required. Received out of hold time and analyzed by request.
- JC34064-4 for Iron, Ferrous: Field analysis required. Received out of hold time and analyzed by request.
- JC34064-2 for Iron, Ferrous: Field analysis required. Received out of hold time and analyzed by request.
- JC34064-1 for Iron, Ferrous: Field analysis required. Received out of hold time and analyzed by request.

eval. for HT ; see checklist

Matrix: AQ	Batch ID: GN57036

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-7DUP were used as the QC samples for Iron, Ferrous. ✓
- RPD(s) for Duplicate for Iron, Ferrous are outside control limits for sample GN57036-D1. RPD acceptable due to low duplicate and sample concentrations. ✓
- JC34064-7 for Iron, Ferrous: Field analysis required. Received out of hold time and analyzed by request.
- JC34064-8 for Iron, Ferrous: Field analysis required. Received out of hold time and analyzed by request.

eval. for HT ; see checklist

Wet Chemistry By Method SM4500NH3 H-11LACHAT

Matrix: AQ	Batch ID: GP2404

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34080-2DUP, JC34080-2MS, JC34080-2MSD were used as the QC samples for Nitrogen, Ammonia. N/A

Wet Chemistry By Method SM4500NO2 B-11

Matrix: AQ	Batch ID: GN56908

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC33997-1DUP, JC33997-1MS were used as the QC samples for Nitrogen, Nitrite. N/A

Matrix: AQ	Batch ID: GN57067

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34264-6DUP, JC34264-6MS were used as the QC samples for Nitrogen, Nitrite. N/A

1/11/17

Wet Chemistry By Method SM5310 B-11

Matrix: AQ	Batch ID: GP2327

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34064-2MS, JC34064-2MSD were used as the QC samples for Total Organic Carbon. ✓

Matrix: AQ	Batch ID: GP2353

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC34466-1MS, JC34466-1MSD were used as the QC samples for Total Organic Carbon. N/A

gr 1/11/17

SGS Accutest 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 Accutest 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 Accutest indicated via signature on the report cover

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC34064
Account: HLANJPR - AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO3	GN57311			mg/l	250	248	99.2	90-110%
Alkalinity, Total as CaCO3	GN57311	5.0	0.0	mg/l	50	48.5	97.0	90-110%
Alkalinity, Total as CaCO3	GN57316			mg/l	250	249	99.6	90-110%
Alkalinity, Total as CaCO3	GN57316	5.0	0.0	mg/l	50	48.5	97.0	90-110%
Chloride	GP2516/GN57672	2.0	0.91	mg/l	80	82.8	103.5	90-110%
Chloride	GP2516/GN57702	2.0	0.0	mg/l	80	82.9	103.6	90-110%
Chloride	GP2526/GN57702	2.0	0.0	mg/l	80	82.2	102.8	90-110%
Chloride	GP2526/GN57716	2.0	0.17	mg/l	80	82.6	103.3	90-110%
Hardness, Total as CaCO3	GN57319	4.0	0.0	mg/l	160	152	95.0	80-120%
Hardness, Total as CaCO3	GN57319			mg/l	80	76.8	96.0	80-120%
Hardness, Total as CaCO3	GN57319			mg/l	160	152	95.0	80-120%
Hardness, Total as CaCO3	GN57319			mg/l	80	76.8	96.0	80-120%
Iron, Ferrous	GN56906	0.20	0.0	mg/l	2	2.17	108.5	90-110%
Iron, Ferrous	GN57036	0.20	0.021	mg/l				
Iron, Ferrous	GN57036	0.20	0.021	mg/l				
Nitrogen, Ammonia	GP2404/GN57448	0.20	0.0	mg/l	1	0.969	96.9	80-120%
Nitrogen, Nitrate + Nitrite	GP2414/GN57456	0.10	0.036	mg/l	2	2.03	101.5	90-110%
Nitrogen, Nitrate + Nitrite	GP2416/GN57456	0.10	0.021	mg/l	2	1.97	98.5	90-110%
Nitrogen, Nitrite	GN56908	0.010	0.0	mg/l	.040	0.036	90.0	90-110%
Nitrogen, Nitrite	GN57067	0.010	0.0	mg/l	.040	0.038	95.0	90-110%
Sulfate	GP2516/GN57672	10	0.0	mg/l	80	80.8	101.0	90-110%
Sulfate	GP2516/GN57702	10	0.0	mg/l	80	80.7	100.9	90-110%
Sulfate	GP2526/GN57702	10	0.0	mg/l	80	79.7	99.6	90-110%
Sulfate	GP2526/GN57716	10	0.0	mg/l	80	83.9	104.9	90-110%
Total Organic Carbon	GP2327/GN57271	1.0	0.0	mg/l	10	9.82	98.2	90-110%
Total Organic Carbon	GP2353/GN57332	1.0	0.0	mg/l	10	10.1	101.0	90-110%

Associated Samples:
Batch GP2327: JC34064-1, JC34064-2, JC34064-4, JC34064-5
Batch GP2353: JC34064-7, JC34064-8
Batch GP2404: JC34064-1, JC34064-2, JC34064-4, JC34064-5, JC34064-7, JC34064-8
Batch GP2414: JC34064-1, JC34064-2, JC34064-4, JC34064-5
Batch GP2416: JC34064-7, JC34064-8
Batch GP2516: JC34064-1, JC34064-2, JC34064-4, JC34064-5
Batch GP2526: JC34064-7, JC34064-8
Batch GN56906: JC34064-1, JC34064-2, JC34064-4, JC34064-5
Batch GN56908: JC34064-1, JC34064-2, JC34064-4, JC34064-5
Batch GN57036: JC34064-7, JC34064-8
Batch GN57067: JC34064-7, JC34064-8
Batch GN57311: JC34064-7, JC34064-8
Batch GN57316: JC34064-1, JC34064-2, JC34064-4, JC34064-5
Batch GN57319: JC34064-1, JC34064-2, JC34064-4, JC34064-5, JC34064-7, JC34064-8
(*) Outside of QC limits

All sample results are ND or were > 5x blank conc. ∴ no quals needed
JR
1/18/17

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DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC34064
Account: HLANJPR - AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN57311	JC33997-1	mg/l	0.0	0.0	0.0	0-12%
Alkalinity, Total as CaCO3	GN57316	JC34064-1	mg/l	305	307	0.7	0-12%
Chloride	GP2516/GN57672	JC33997-1	mg/l	14.8	15.1	2.0	0-20%
Chloride	GP2526/GN57716	JC34064-7	mg/l	470	463	5.5	0-20%
Hardness, Total as CaCO3	GN57319	JC34064-1	mg/l	782	778	0.5	0-10%
Iron, Ferrous	GN56906	JC34064-1	mg/l	0.59	0.61	3.3	0-20%
Iron, Ferrous	GN57036	JC34064-7	mg/l	0.030	0.021	35.3(a) ✓	0-20%
Nitrogen, Ammonia	GP2404/GN57448	JC34080-2	mg/l	0.0	0.0	0.0	0-20%
Nitrogen, Nitrate + Nitrite	GP2414/GN57456	JC34080-2	mg/l	2.4	2.2	8.7	0-22%
Nitrogen, Nitrate + Nitrite	GP2416/GN57456	JC34064-7	mg/l	9.3	9.2	9.1	0-22%
Nitrogen, Nitrite	GN56908	JC33997-1	mg/l	0.0	0.0	0.0	0-20%
Nitrogen, Nitrite	GN57067	JC34264-6	mg/l	0.0	0.0	0.0	0-20%
Sulfate	GP2516/GN57672	JC33997-1	mg/l	0.0	0.0	0.0	0-20%
Sulfate	GP2526/GN57702	JC34064-7	mg/l	113	114	0.9	0-20%
Sulfate	GP2526/GN57702	JC34064-7	mg/l	115	114	0.9	0-20%

no qual

Associated Samples:
Batch GP2404: JC34064-1, JC34064-2, JC34064-4, JC34064-5, JC34064-7, JC34064-8
Batch GP2414: JC34064-1, JC34064-2, JC34064-4, JC34064-5
Batch GP2416: JC34064-7, JC34064-8
Batch GP2516: JC34064-1, JC34064-2, JC34064-4, JC34064-5
Batch GP2526: JC34064-7, JC34064-8
Batch GN56906: JC34064-1, JC34064-2, JC34064-4, JC34064-5
Batch GN56908: JC34064-1, JC34064-2, JC34064-4, JC34064-5
Batch GN57036: JC34064-7, JC34064-8
Batch GN57067: JC34064-7, JC34064-8
Batch GN57311: JC34064-7, JC34064-8
Batch GN57316: JC34064-1, JC34064-2, JC34064-4, JC34064-5
Batch GN57319: JC34064-1, JC34064-2, JC34064-4, JC34064-5, JC34064-7, JC34064-8
(*) Outside of QC limits
(a) RPD acceptable due to low duplicate and sample concentrations. ✓

JR
1/18/17

15.2
15

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC34064
Account: HLANJPR - AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chloride	GP2516/GN57672	JC33997-1	mg/l	14.8	80	97.2	103.0	80-120%
Chloride	GP2526/GN57702	JC34064-8	mg/l	56.6	80	134	96.8	80-120%
Chloride	GP2526/GN57716	JC34064-7	mg/l	470	320	796	95.9	80-120%
Hardness, Total as CaCO3	GN57319	JC34064-1	mg/l	782	160	955	108.1	73-125%
Nitrogen, Ammonia	GP2404/GN57448	JC34080-2	mg/l	0.0	1	1.1	110.0	75-125%
Nitrogen, Nitrate + Nitrite	GP2414/GN57456	JC34080-2	mg/l	2.4	1	3.0	60.0N(a)	90-110%
Nitrogen, Nitrate + Nitrite	GP2416/GN57456	JC34064-7	mg/l	9.3	1	10.4	200.0(b)	90-110%
Nitrogen, Nitrite	GN56908	JC33997-1	mg/l	0.0	.040	0.035	87.5	32-147%
Nitrogen, Nitrite	GN57067	JC34264-6	mg/l	0.0	0.04	0.035	87.5	32-147%
Sulfate	GP2516/GN57672	JC33997-1	mg/l	0.0	80	80.0	100.0	80-120%
Sulfate	GP2526/GN57702	JC34064-7	mg/l	113	80	187	90.0	80-120%
Sulfate	GP2526/GN57702	JC34064-7	mg/l	115	80	187	90.0	80-120%
Sulfate	GP2526/GN57702	JC34064-8	mg/l	14.5	80	91.4	96.1	80-120%
Total Organic Carbon	GP2327/GN57271	JC34064-2	mg/l	1.6	10	11.4	98.0	77-122%
Total Organic Carbon	GP2353/GN57332	JC34466-1	mg/l	5.8	10	15.3	95.0	77-122%

N/A N/A* OK

Associated Samples:
Batch GP2327: JC34064-1, JC34064-2, JC34064-4, JC34064-5
Batch GP2353: JC34064-7, JC34064-8
Batch GP2404: JC34064-1, JC34064-2, JC34064-4, JC34064-5, JC34064-7, JC34064-8
Batch GP2414: JC34064-1, JC34064-2, JC34064-4, JC34064-5
Batch GP2416: JC34064-7, JC34064-8
Batch GP2516: JC34064-1, JC34064-2, JC34064-4, JC34064-5
Batch GP2526: JC34064-7, JC34064-8
Batch GN56908: JC34064-1, JC34064-2, JC34064-4, JC34064-5
Batch GN57067: JC34064-7, JC34064-8
Batch GN57319: JC34064-1, JC34064-2, JC34064-4, JC34064-5, JC34064-7, JC34064-8
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Spike recovery indicates possible matrix interference.
(b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

* unrelated sample spiked; no qual needed
DR 1/18/17

15.3
15

Instrument QC Summary
Inorganics Analyses

Login Number: JC34064
Account: HLANJPR - AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

File ID: E61228W1.TXT Date Analyzed: 12/28/16 Methods: SM5310 B-11
Run ID: GN57271 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN57271-ICV1	Total Organic Carbon	20.7	1.0	0.42	20	103.5	90-110
GN57271-ICB1	Total Organic Carbon	0.42 U	1.0	0.42			
GN57271-CCV1	Total Organic Carbon	24.6	1.0	0.42	25	98.4	90-110
GN57271-CCB1	Total Organic Carbon	0.42 U	1.0	0.42			
GN57271-CCVA1	Total Organic Carbon	50.3	1.0	0.42	50	100.6	
GN57271-CCB2	Total Organic Carbon	0.42 U	1.0	0.42			
GN57271-CCV2	Total Organic Carbon	25.0	1.0	0.42	25	100.0	90-110
GN57271-CCB3	Total Organic Carbon	0.42 U	1.0	0.42			
GN57271-CCVA2	Total Organic Carbon	49.9	1.0	0.42	50	99.8	
GN57271-CCB4	Total Organic Carbon	0.55	1.0	0.42			
GN57271-CCV3	Total Organic Carbon	25.0	1.0	0.42	25	100.0	90-110
GN57271-CCB5	Total Organic Carbon	0.42 U	1.0	0.42			
GN57271-CCVA3	Total Organic Carbon	49.9	1.0	0.42	50	99.8	
GN57271-CCB6	Total Organic Carbon	0.42 U	1.0	0.42			
GN57271-CCV4	Total Organic Carbon	24.5	1.0	0.42	25	98.0	90-110
GN57271-CCB7	Total Organic Carbon	0.62	1.0	0.42	5x = 3.1 mg/L		
GN57271-CCVA4	Total Organic Carbon	50.2	1.0	0.42	50	100.4	
GN57271-CCB8	Total Organic Carbon	0.42 U	1.0	0.42			
GN57271-CCV5	Total Organic Carbon	24.8	1.0	0.42	25	99.2	90-110
GN57271-CCB9	Total Organic Carbon	0.42 U	1.0	0.42			

(!) Outside of QC limits

Applies to
- 1, 2, 4, 5 (analyzed between CCB6
(M) all above and CCB7)

gn
1/18/17

15.5
15

Instrument QC Summary
Inorganics Analyses

Login Number: JC34064
Account: HLANJPR - AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

File ID: E010217W1.NO32 Date Analyzed: 01/02/17 Methods: EPA 353.2/LACHAT
Run ID: GN57456 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN57456-ICV1	Nitrogen, Nitrate + Nitrite	2.0	0.10	0.0059	2	100.0	90-110
GN57456-ICB1	Nitrogen, Nitrate + Nitrite	0.017	0.10	0.0059			
GN57456-CCV1	Nitrogen, Nitrate + Nitrite	2.3	0.10	0.0059	2.5	92.0	90-110
GN57456-CCB1	Nitrogen, Nitrate + Nitrite	0.0097	0.10	0.0059			
GN57456-CCV2	Nitrogen, Nitrate + Nitrite	2.5	0.10	0.0059	2.5	100.0	90-110
GN57456-CCB2	Nitrogen, Nitrate + Nitrite	0.025	0.10	0.0059			
GN57456-CCV3	Nitrogen, Nitrate + Nitrite	2.3	0.10	0.0059	2.5	92.0	90-110
GN57456-CCB3	Nitrogen, Nitrate + Nitrite	0.024	0.10	0.0059			
GN57456-CCV4	Nitrogen, Nitrate + Nitrite	2.3	0.10	0.0059	2.5	92.0	90-110
GN57456-CCB4	Nitrogen, Nitrate + Nitrite	0.011	0.10	0.0059			
GN57456-CCV5	Nitrogen, Nitrate + Nitrite	2.7	0.10	0.0059	2.5	108.0	90-110
GN57456-CCB5	Nitrogen, Nitrate + Nitrite	0.0092	0.10	0.0059			
GN57456-CCV6	Nitrogen, Nitrate + Nitrite	2.6	0.10	0.0059	2.5	104.0	90-110
GN57456-CCB6	Nitrogen, Nitrate + Nitrite	0.020	0.10	0.0059			
GN57456-CCV7	Nitrogen, Nitrate + Nitrite	2.5	0.10	0.0059	2.5	100.0	90-110
GN57456-CCB7	Nitrogen, Nitrate + Nitrite	0.023	0.10	0.0059			
GN57456-CCV8	Nitrogen, Nitrate + Nitrite	2.5	0.10	0.0059	2.5	100.0	90-110
GN57456-CCB8	Nitrogen, Nitrate + Nitrite	0.024	0.10	0.0059			
GN57456-CCV9	Nitrogen, Nitrate + Nitrite	2.5	0.10	0.0059	2.5	100.0	90-110
GN57456-CCB9	Nitrogen, Nitrate + Nitrite	0.019	0.10	0.0059			
GN57456-CCV10	Nitrogen, Nitrate + Nitrite	2.5	0.10	0.0059	2.5	100.0	90-110
GN57456-CCB10	Nitrogen, Nitrate + Nitrite	0.0089	0.10	0.0059			
GN57456-CCV11	Nitrogen, Nitrate + Nitrite	2.5	0.10	0.0059	2.5	100.0	90-110
GN57456-CCB11	Nitrogen, Nitrate + Nitrite	0.011	0.10	0.0059			
GN57456-CCV12	Nitrogen, Nitrate + Nitrite	2.5	0.10	0.0059	2.5	100.0	90-110
GN57456-CCB12	Nitrogen, Nitrate + Nitrite	0.022	0.10	0.0059			
GN57456-CCV13	Nitrogen, Nitrate + Nitrite	2.5	0.10	0.0059	2.5	100.0	90-110
GN57456-CCB13	Nitrogen, Nitrate + Nitrite	0.023	0.10	0.0059			
GN57456-CCV14	Nitrogen, Nitrate + Nitrite	2.5	0.10	0.0059	2.5	100.0	90-110
GN57456-CCB14	Nitrogen, Nitrate + Nitrite	0.018	0.10	0.0059			

(!) Outside of QC limits

* 5x = 0.125 mg/L All samples ND or > action level :, no qual

OK 1/18/17

15.8
15

Instrument QC Summary
Inorganics Analyses

Login Number: JC34064
Account: HLANJPR - AMEC Environment & Infrastructure, Inc.
Project: Review Avenue GWM, Long Island City, NY

File ID: 317010701.TXT Date Analyzed: 01/07/17 Methods: EPA 300/SW846 9056A
Run ID: GN57702 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN57702-ICV1	Chloride	99.8	2.0	0.17	100	99.8	90-110
GN57702-ICV1	Sulfate	97.9	10	0.45	100	97.9	90-110
GN57702-CCV1	Chloride	196	2.0	0.17	200	98.0	90-110
GN57702-CCV1	Sulfate	192	10	0.45	200	96.0	90-110
GN57702-CCB1	Chloride	0.17 U	2.0	0.17			
GN57702-CCB1	Sulfate	0.45 U	10	0.45			
GN57702-CCV2	Chloride	197	2.0	0.17	200	98.5	90-110
GN57702-CCV2	Sulfate	193	10	0.45	200	96.5	90-110
GN57702-CCB2	Chloride	0.17 U	2.0	0.17			
GN57702-CCB2	Sulfate	0.45 U	10	0.45			
GN57702-CCV3	Chloride	197	2.0	0.17	200	98.5	90-110
GN57702-CCV3	Sulfate	191	10	0.45	200	95.5	90-110
GN57702-CCB3	Chloride	0.17 U	2.0	0.17			
GN57702-CCB3	Sulfate	0.45 U	10	0.45			
GN57702-CCV4	Chloride	197	2.0	0.17	200	98.5	90-110
GN57702-CCV4	Sulfate	192	10	0.45	200	96.0	90-110
GN57702-CCB4	Chloride	0.17 U	2.0	0.17			
GN57702-CCB4	Sulfate	0.45 U	10	0.45			
GN57702-CCV5	Chloride	196	2.0	0.17	200	98.0	90-110
GN57702-CCV5	Sulfate	193	10	0.45	200	96.5	90-110
GN57702-CCB5	Chloride	0.17 U	2.0	0.17			
GN57702-CCB5	Sulfate	0.47	10	0.45			

(!) Outside of QC limits

All samples > 5x action level
∴ no qual
JR 1/18/17

15.10 15

Sample Calc

Quantitation Report (QT Reviewed)

Data Path : C:\MSDCHEM\1\DATA\
Data File : AA56626.d
Signal(s) : FID1A.ch
Acq On : 29 Dec 2016 1:53 pm
Operator : LUISM1
Sample : JC34064-1
Misc : GC49805,GAA1103,,,,,1
ALS Vial : 12 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 30 09:18:22 2016
Quant Method : C:\msdchem\1\methods\maa611.m
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Wed Aug 17 09:21:43 2016
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df

Compound	R.T.	Response	Conc Units
Target Compounds			
1) Methane	1.336	95256	3.634 PPMV ✓

(f)=RT Delta > 1/2 Window (m)=manual int.

$$\text{Conc}_{\text{Methane}} = \frac{95256}{26210} * 3.63 \text{ ppmv}$$

OK

JR 1/30/17

11.1.1

11

ACCUTEST LABORATORIES

Test:
Product:
Method:
Ave Sulfuric Normality:

GN Batch: GN57316
Date: 12/28/16
Ave. ml for blank: 100

Analyst: CB
Reporting Limit: 5.0
pH Meter ID: 58

Units: mg/L

Calculation for samples > 20 mg/l
ALK = A x N x 50000 / Sample Vol

Calculation for samples < 20 mg/l
ALK = (2A-C) x N x 50000 / Sample Vol

Reagent Ids - See attached page
Spike Prep.: 1 ml of 5000 ppm Na+ phosphate dibasic to 100 ml DI H2O = 50ppm
Spike Prep.: 5 ml of 5000 ppm Na+ phosphate dibasic to 100 ml DI H2O = 250ppm

QC Summary:

Dup Sample ID:	JC34064-1	Original:	304.95	Duplicate:	306.63	RPD:	0.55	Units
Prep Blank Date	GN57316-MB1	Result:	<5	RL:	5.00	<MDL?	N	mg/l
Spike Blank Prep Date:	GN57316-B1	Amt Spiked:	50.00	Result:	48.50	% REC	97.0	mg/l

Bottle #	Sample ID	Sample Volume in ml	Initial pH	Initial Reading for titrant in ml (D)	Final pH 4.5 Reading for titrant in ml (E)	Total vol of Titrant to pH 4.5 in ml (E - D = A)	volume used from 4.5 to 4.2 in mls (F)	Total vol of Titrant to pH 4.2 in ml (F + A = C)	Result (mg/l)	Final Result (mg/l)	RL	Analysis Time
CHECK	pH 4.0 check (± 0.05)	NA	3.97	NA	NA	NA	NA	NA	NA	NA	NA	20:40
CHECK	pH 7.0 check (± 0.05)	NA	6.97	NA	NA	NA	NA	NA	NA	NA	NA	
CHECK	pH 10.0 check (± 0.05)	NA	9.98	NA	NA	NA	NA	NA	NA	NA	NA	
MB	GN57316-MB1	100	3.97	0.00	0.00	0.00	0.00	0.000	0.00	<5	5.0	
BSP	GN57316-B1	100	7.44	0.00	4.35	4.35			48.50	48.503	5.0	
BSP	GN57316-B2	100	8.19	0.00	22.30	22.30			248.65	248.645	5.0	
9	GN57316-D1	100	6.93	0.00	27.50	27.50			306.63	306.625	5.0	
9	JC34212-10	100	6.87	0.00	19.00	19.00			211.85	211.850	5.0	
7	JC34212-11	100	6.11	0.00	20.55	20.55			229.13	229.133	5.0	
7	JC34212-12	100	6.57	0.00	30.00	30.00			334.50	334.500	5.0	
7	JC34212-13	100	6.73	0.00	22.50	22.50			250.88	250.875	5.0	
7	JC34212-16	100	6.43	0.00	12.50	12.50			139.38	139.375	5.0	
9	JC34064-1	100	6.90	0.00	27.35	27.35			304.95	304.953	5.0	
CHECK	pH 4.0 check (± 0.2)	NA	4.03	NA	NA	NA	NA	NA	NA	NA	NA	
9	JC34064-2	100	6.67	0.00	28.65	28.65			319.45	319.448	5.0	
9	JC34064-4	100	6.91	0.00	22.50	22.50			250.88	250.875	5.0	
9	JC34064-5	100	6.95	0.00	33.70	33.70			375.76	375.755	5.0	
8	JC34080-1	100	5.53	0.00	0.10	0.10	0.10	0.200	0.00	<5	5.0	
9	JC34080-2	100	5.35	0.00	0.60	0.60	0.20	0.800	4.46	<5	5.0	
8	JC34080-3	100	4.93	0.00	0.25	0.25	0.10	0.350	1.67	<5	5.0	
8	JC34080-4	100	3.98	0.00	0.00	0.00	0.00	0.000	0.00	<5	5.0	
8	JC34080-5	100	4.65	0.00	0.10	0.10	0.05	0.150	0.56	<5	5.0	
8	JC34080-6	100	5.29	0.00	1.00	1.00	0.30	1.300	7.81	7.805	5.0	
8	JC34080-7	100	4.42	0.00	0.00	0.00	0.00	0.000	0.00	<5	5.0	
CHECK	pH 4.0 check (± 0.2)	NA	4.04	NA	NA	NA	NA	NA	NA	NA	NA	
8	JC34080-8	100	3.98	0.00	0.00	0.00	0.00	0.000	0.00	<5	5.0	
8	JC34080-9	100	5.04	0.00	1.50	1.50	0.25	1.750	13.94	13.938	5.0	
8	JC34080-10	100	6.56	0.00	28.00	28.00			312.20	312.200	5.0	
CHECK	pH 4.0 check (± 0.2)	NA	4.04	NA	NA	NA	NA	NA	NA	NA	NA	21:15

305 mg/L OK JR 1/30/17

Comments:

Validated By: N. Cole
Validated Date: 1/7/2013
Document Control #: AGN-ALK-02

GN57316 Sample calc

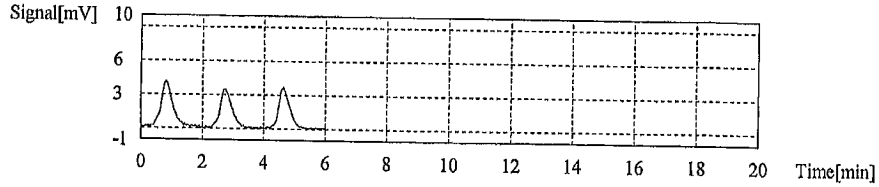
Sample calc

TOC-Control L Report

e61229w1.toc.tlx

No.	Area	Conc.	Inj. Vol.	Dil.	Calib. File	Date/Time
1	10.56	1.482mg/L	100uL	1.000	e61228w1.2016_12_28_06_50_37.cal	12/29/2016 5:23:07 PM
2	8.953	1.236mg/L	100uL	1.000	e61228w1.2016_12_28_06_50_37.cal	12/29/2016 5:25:12 PM
3	9.309	1.291mg/L	100uL	1.000	e61228w1.2016_12_28_06_50_37.cal	12/29/2016 5:27:39 PM

Mean Conc. 1.336mg/L
CV Conc 9.66%



Sample

Sample Name: JC34064-8
Sample ID:
Origin: TOCAQ.met
Status Completed
Chk. Result

Type	Name	Inj. Vol.	Result
Unknown	NPOC	1.000	NPOC:9.088mg/L

1. Det

Anal.: NPOC

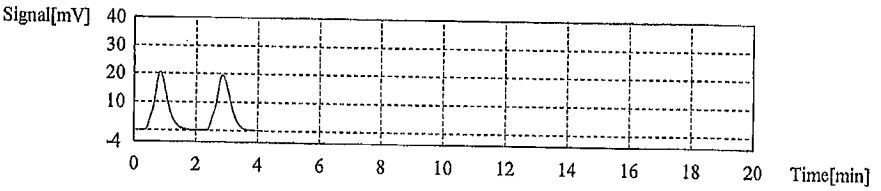
No.	Area	Conc.	Inj. Vol.	Dil.	Calib. File	Date/Time
1	59.36	8.943mg/L	100uL	1.000	e61228w1.2016_12_28_06_50_37.cal	12/29/2016 5:34:22 PM
2	61.26	9.234mg/L	100uL	1.000	e61228w1.2016_12_28_06_50_37.cal	12/29/2016 5:36:43 PM

Mean Conc. 9.088mg/L
CV Conc 2.26%

9.1 mg/L

OK

12/30/17



Sample

Sample Name: JC34097-1
Sample ID:
Origin: TOCAQ.met
Status Completed
Chk. Result

Type	Name	Inj. Vol.	Result
Unknown	NPOC	1.000	NPOC:1.023mg/L

1. Det

Anal.: NPOC

179

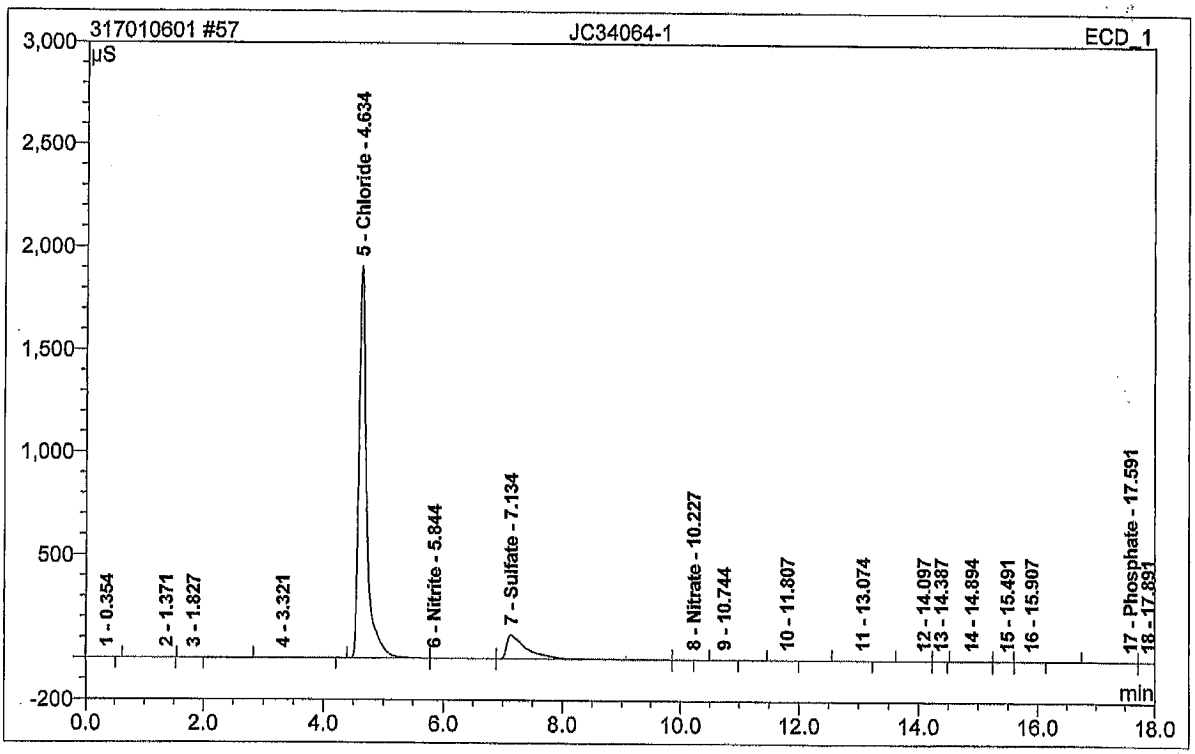
17

Sample Calc

Operator:Chemistry Timebase:ACCUTEST_SYS#3 Sequence:317010601

57 JC34064-1

Sample Name:	**JC34064-1**	*Injection Volume:*	**20.0**
Vial Number:	**35**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions3_ASDV**	*Bandwidth:*	**n.a.**
Quantif. Method:	**System3Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/7/2017 7:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**21.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	0.35	n.a.	0.014	0.003	0.00	n.a.	BMB
2	1.37	n.a.	0.019	0.009	0.00	n.a.	BMB
3	1.83	n.a.	0.005	0.001	0.00	n.a.	BMB
4	3.32	n.a.	0.490	0.093	0.03	n.a.	BMB
5	4.63	Chloride	1904.814	286.855	86.05	797.433	BM
6	5.84	Nitrite	1.024	0.672	0.20	0.925	M
7	7.13	Sulfate	114.783	45.661	13.70	167.748	M
8	10.23	Nitrate	0.000	0.007	0.00	0.029	MB
9	10.74	n.a.	0.006	0.001	0.00	n.a.	BMB
10	11.81	n.a.	0.006	0.002	0.00	n.a.	BMB
11	13.07	n.a.	0.014	0.004	0.00	n.a.	BMB

168 mg/L

OK

17.12 17

anionssystem3/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SR9a Build 2680 (163077)

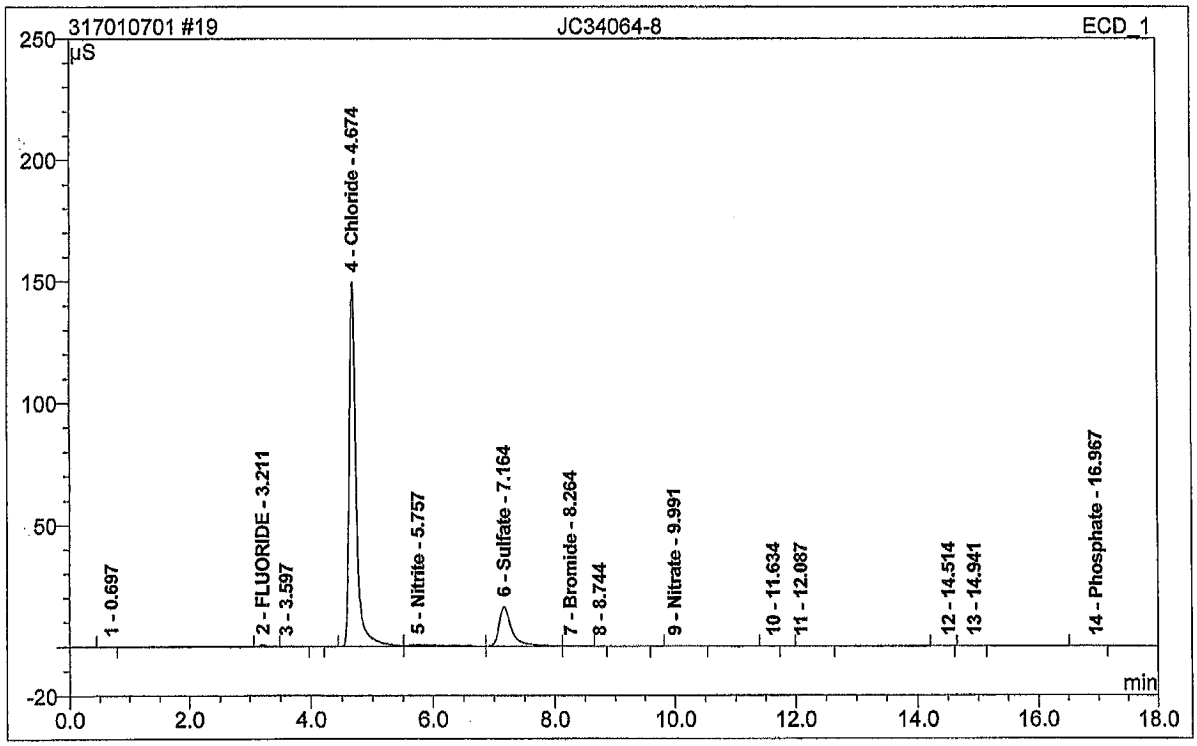
1/30/17

Sample Calc

Operator:Chemistry Timebase:ACCUTEST_SYS#3 Sequence:317010701

19 JC34064-8

Sample Name:	**JC34064-8**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions3_ASDV**	*Bandwidth:*	**n.a.**
Quantif. Method:	**System3Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**1/7/2017 15:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**21.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	0.70	n.a.	0.011	0.002	0.01	n.a.	BMB
2	3.21	FLUORIDE	0.761	0.109	0.44	0.177	BMB
3	3.60	n.a.	0.068	0.008	0.03	n.a.	Rd
4	4.67	Chloride	149.553	20.363	81.62	56.625	BM
5	5.76	Nitrite	0.596	0.425	1.70	0.594	M
6	7.16	Sulfate	16.053	3.946	15.82	14.522	M
7	8.26	Bromide	0.195	0.074	0.30	0.454	MB
8	8.74	n.a.	0.011	0.001	0.00	n.a.	Rd
9	9.99	Nitrate	0.011	0.004	0.02	0.026	BMB
10	11.63	n.a.	0.008	0.001	0.00	n.a.	BMB
11	12.09	n.a.	0.004	0.003	0.01	n.a.	BMB

56.6 mg/L

OK

1/30/17

17.13

17

anionssystem3/Integration