Periodic Review Report

Former Paragon Paint and Varnish Site
Long Island City, New York

May 15, 2023

Prepared for:

CSC 4540 Property Co LLC

Prepared by:

**Roux Environmental Engineering
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Executive Summary

The following provides a brief summary of the controls implemented for the Site, as well as the inspections, monitoring, maintenance, and reporting activities required by this Site Management Plan recently amended per the NYSDEC's letter dated January 12, 2018 (Appendix F):

Site Identification:	Site Identification No. C241108 Paragon Paint and Varnish Corp. 5-43 to 5-49 46th Avenue and 45-38 to 45-40 Vernon Boulevard, Long Island City, Queens, New York

Institutional Controls:	1. The property may be used for restricted residential, commercial and/or industrial use only.
	2. Environmental Easement
	3. Performance of soil vapor intrusion evaluation in event of redevelopment.
	4. All ECs must be inspected at a frequency and in a manner defined in the SMP.
Engineering Controls:	1. Cover system
	2. Light Non-Aqueous Phase Liquid (LNAPL) Recovery System
	3. *In-situ* Chemical Oxidation (ISCO) Injections
Inspections:	Frequency
1. Cover inspection	Annually
2. LNAPL recovery system inspection	As Needed
Monitoring:	Frequency
1. Gauging of LNAPL recovery wells	Quarterly
2. Gauging of Monitoring wells – Groundwater	Quarterly
3. Sampling of Monitoring Wells – Groundwater	Annually
Maintenance:	Frequency
1. LNAPL pump maintenance	As Needed
2. LNAPL recovery drum change-out	As Needed
Reporting:	Frequency
1. Progress Report (Ongoing)	As Needed
2. Groundwater Monitoring Results	Annually
3. Periodic Review Report	Annually

1. Introduction

This Periodic Review Report (PRR) was prepared by Roux Environmental Engineering and Geology D.P.C. (Roux)[1] on behalf of CSC 4540 Property Co LLC (current Site Owner) and serves as a required element of the remedial program for the Former Paragon Paint and Varnish site located in Long Island City, New York (hereinafter referred to as the Site). A Site plan is provided in Figure 1. The Site was formerly in the New York State (NYS) Brownfield Cleanup Program (BCP), Site No. C241108, administered by the New York State Department of Environmental Conservation (NYSDEC). A Certificate of Completion (COC) was issued in December 2016. Key dates related to the BCP application are below:

- June 29, 2007: 549 46th Avenue LLC applied to the BCP as a Volunteer.
- September 4, 2008: The NYSDEC signed the Brownfield Cleanup Agreement (BCA) with 549-46th Avenue LLC as Volunteer.
- July 6, 2010: Anable Beach Inc. applied to amend the BCA to be added as a Volunteer.
- August 17, 2010: The NYSDEC executed the BCA Amendment #1.
- July 18, 2011: Vernon 4540 Realty LLC applied to amend the BCA a second time to be added as a third Volunteer (BCA Amendment #2).
- July 29, 2011: The NYSDEC executed BCA Amendment #2.
- December 15, 2016: The NYSDEC issued a COC for the Site to 549-46th Avenue LLC, Anable Beach Inc., and Vernon 4540 Realty LLC.
- April 24, 2019: The NYSDEC modified the COC to add CSC 4540 Property Co, LLC and remove Anable Beach, Inc. as a COC holder.

As part of being in the BCP, a Site investigation was performed that revealed high levels of Benzene, Ethylbenzene, Isopropylbenzene (Cumene), and Xylene contamination in soil and groundwater at the Site. In addition, Roux also confirmed that there were two distinct LNAPL plumes located at the Site—one plume in the center of the courtyard and the other at the southwestern edge of the Site located within the driveway. A Track 4 cleanup was proposed and implemented in accordance with the Remedial Action Work Plan submitted to the NYSDEC on October 7, 2015.

The Site Management Plan (SMP), dated August 2015, was approved by NYSDEC on December 7, 2016 (refer to Appendix E) with subsequent modifications being approved by the NYSDEC on January 12, 2018.

In response to a letter issued from the NYSDEC on January 19, 2021, the SMP was modified to include sampling of Tentatively Identified Compounds (TICs) via EPA Method 8260, 1,4-dioxane via EPA Method 8270 SIM, and per- and poly-fluoroalkyl substances (PFAS) via EPA Method 537. These modifications were put into effect for the annual groundwater sampling event during this reporting period. The results are provided in Appendix C. The most recently revised SMP was submitted to NYSDEC on December 15, 2022. Approval of the modifications is still pending.

The required Site-wide inspection and quarterly O&M inspections were completed during this SMP monitoring phase. The components, data, and rationale included in this PRR demonstrate that the engineering and

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[1] Prior to March 1, 2018, Roux Environmental Engineering and Geology, D.P.C. performed work as Remedial Engineering P.C. and Roux Associates, Inc. Remedial Engineering P.C. is a New York State professional service corporation organized primarily for the purpose of providing engineering services for clients of Roux Associates, Inc.

institutional controls are performing as designed, are effective, and are compliant with specifications described in the SMP. No additional changes to the monitoring plan are recommended by Roux at this time.

Site Management activities, reporting, and Institutional Control (IC)/ Engineering Control (EC) certification are scheduled on a certification period basis. This certification is based on the submission of a PRR (included herein), submitted to the NYSDEC every year beginning fifteen months after the COC was issued. These PRRs will identify and assess all of the IC/ECs required by the remedy for the Site, any environmental monitoring data and/or information generated during the reporting period, and a complete Site evaluation that discusses the overall performance and effectiveness of the previous remedy.

2. Site Overview

2.1 Site Description and History

The Site is located in Long Island City, Queens County, New York and is identified as Block 26 and Lot 4 on the Long Island City Tax Map. The Site is an approximately 0.76-acre area and is bounded by a one-story commercial property and Anable Basin to the north, 46th Avenue to the south, Vernon Boulevard and multi-story residential/commercial buildings to the east, and a two-story warehouse to the west. The owner of the Site is CSC 4540 Property Co, LLC.

The Site consists of a four-story former paint factory, a three-story former garage and office, a three-story former warehouse, a concrete access road off 46th Avenue and a concrete rear courtyard that fronts approximately 50 feet of the Anable Basin. The Site is zoned industrial and is currently vacant. The properties adjoining the Site and, in the neighborhood, surrounding the Site primarily include commercial and residential properties.

2.2 Summary of Remedial Action

Following the BCP Remedial Investigation Report, and the Department's approval of the Remedial Action Work Plan, Volunteers began remediation at the Site in 2015. Since then, Volunteers have fully implemented and completed the approved remedial program. All remedial work was done with oversight, understanding, and direction from the NYSDEC.

Based on the results of the Remedial Investigation Report, the Decision Document identified the following Remedial Action Objectives (RAOs) for this Site.

Remedial Action Objectives

Groundwater RAOs

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of, volatiles from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer, to the extent practicable, to pre-disposal/pre-release conditions.
- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

Soil RAOs

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of, or exposure to, contaminants volatilizing from soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Soil Vapor RAOs

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at the Site.

The cleanup consisted of the following:

- Excavation and off-Site disposal of grossly contaminated soil in the courtyard LNAPL source area, including:
    - Grossly contaminated soil as defined in 6NYCRR Part 375-1.2(u);
    - Soil containing LNAPL;
    - Soil containing total SVOCs exceeding 500 parts per million (ppm);
    - Soils which exceeded the PoGW SCOs as defined by 6 NYCRR Part 375-6.8 for those contaminants found in Site groundwater above standards; and
    - Soils that created a nuisance condition, as defined in NYSDEC Commissioner Policy CP-51 Section G.
- Closure of USTs by removal or, as a contingency, closure in place.
- Excavation and disposal of subsurface piping.
- Air monitoring of potential airborne VOCs and particulates during all ground intrusive and soil handling activities.
- Implementation of erosion and sediment controls.
- Installation of five autonomous LNAPL recovery pumps at property boundary areas where LNAPL plume extends off-Site.
- Installation of a Site cover system.
- *In situ* chemical oxidation (ISCO) injections for treatment of VOCs in soil and groundwater underneath the brick warehouse building on-Site.

2.3 Remaining Contamination

The Remedial Alternative (RA) was designed to reduce the concentration of Site contaminants in groundwater through excavation of grossly contaminated soil in the LNAPL source area within the courtyard followed by product recovery at the edges of the LNAPL plumes that extended off-site from the courtyard area and the driveway.

Due to limits of the Support of Excavation (SOE), structural engineering concerns associated with the onsite buildings and other Site constraints, all soil contamination was not removed as part of the performance of the remedial action. As a result, soil contamination remains at several locations across the Site that exceeds the NYSDEC PoG SCOs for one or more of the four VOCs of concern (benzene, ethylbenzene, isopropylbenzene, and total xylenes).

2.3.1 Soil

The RA addressed grossly contaminated soil in the LNAPL source areas within the courtyard and driveway through excavation, low-level VOCs underneath the Warehouse through ISCO, and limiting contact with potentially-contaminated soil by installing a composite cover over the rest of the Site. Though the grossly contaminated soil was removed from the LNAPL source areas in the courtyard and driveway, soil contamination remains to the east of the excavation towards the four-story paint factory building and within the driveway excavation. This material, which potentially extends beneath Site buildings, could not be removed due to the SOE limitations.

The south extent of the excavation in the courtyard was extended to as near the warehouse and garage as a 1:1 slope would allow. Excavation and post-excavation sampling determined the presence of grossly contaminated material towards the three-story building and beneath the concrete slab where former 20,000 USTs had been staged on. The bottom sample collected from the middle of the driveway excavation at 17.5 ft showed evidence of gross contamination.

A total of 11 USTs was encountered during the RA, with five (5) in the southeast corner of the courtyard excavation and the remaining six (6) located inside the garage excavation footprint. All 11 tanks and their chambers encountered during the RA were emptied, cleaned and were either removed (the five (5) courtyard excavation USTs) or abandoned in place (the six (6) garage excavation USTs). Compliance UST samples were collected from the soil surrounding the courtyard and garage and the presence of residual contamination was present. This material could not be removed due to SOE limitations.

The residual soil contamination, as originally presented in the Final Engineering Report (FER) dated November 22, 2016, is also presented in this PRR as Figures 4 and 5. Further remedies to address this residual contamination will be evaluated in the Site redevelopment plan.

2.3.2 Groundwater

The RA addressed groundwater through removal and/or treatment of soil with VOCs above PoG SCOs. A component of the RAWP was an ISCO injection program to treat VOCs in groundwater and soil where excavation could not be completed during the RA, namely the soils under the basement of the Warehouse. As documented in the FER, the initial ISCO injection program marginally improved groundwater quality as all Site's contaminants of Concern (benzene, ethylbenzene, isopropylbenzene, m,p-xylene, and o-xylene) remain above their respective NYSDEC ambient water quality guidance and standard values (AWQSGV) at various monitoring well locations across the Site.

All post-remediation groundwater analytical results are summarized in Appendix C with COC-specific data depicted on Figure 2.

Based upon the continued presence of residual VOCs in groundwater following the initial injection treatment event in the warehouse area and residual VOCs in soil after excavation of impacted soil in the courtyard during the Remedial Action, additional ISCO treatment was performed during this reporting period. Further details concerning the performance of that injection event are discussed in Section 3.3.2.

2.3.3 Soil Vapor

The RA addressed soil vapor through removal and/or treatment of soil containing VOCs above the PoG SCOs. During redevelopment, the need for soil vapor mitigation in new structures will be evaluated. New buildings with occupancy and slab-on-grade design may require a vapor barrier and a sub-slab depressurization system.

2.4 Engineering and Institutional Controls

Since residual contamination remains beneath the Site, ICs/ECs have been incorporated into the Site remedy as part of the NYSDEC-approved SMP, to provide proper management of residual contamination in the future and ensure protection of public health and the environment.

2.4.1 Engineering Controls

The Site has ECs consisting of:

- Site Cover System (refer to Figure 3);
- ISCO Injections; and
- LNAPL Recovery System.

The purpose of each EC is described below:

- The Site Cover System prevents exposure to remaining contamination in soil/ fill at the Site.
- The ISCO Injections, if effective, destroy the residual VOCs in groundwater and soil that were present after completion of the excavation remedy.
- The LNAPL Recovery System removes any residual LNAPL that may be present at the water table.

The LNAPL Recovery and Site Cover System ECs are fully in place and effective at meeting their objectives.

2.4.2 Institutional Controls

A Site-specific Environmental Easement has been recorded with the Queens County Clerk that provides an enforceable means to manage the remaining contamination at the Site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. The ICs presented in the SMP consist of the following:

- The property may be used for: restricted residential, commercial, or industrial use.
- All ECs must be operated and maintained as specified in this 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 New York City Department of Health and Mental Hygiene 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 Department.
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP.
- Data and information pertinent to Site management must be reported at the frequency and in a manner as defined in this SMP.
- All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP.
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP.
- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this SMP.

- Access to the 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, and any potential impacts that are identified must be monitored or mitigated.
- Vegetable gardens and farming on the Site are prohibited.

3. SMP Requirements and Compliance Monitoring

Since remaining contaminated soil and groundwater exists beneath the Site, ICs and ECs are required to protect human health and the environment. This section details the elements of the SMP including the inspection, monitoring, and reporting requirements, IC/ECs, whether the IC/EC requirements were met, and regulatory notification and certification requirements. The various subsections below also include an evaluation of the remedy performance, effectiveness, and protectiveness.

3.1 IC/EC Plan Compliance Report

Since remaining contamination exists beneath the Site, ICs and ECs are required to protect human health and the environment and are described in detail in Section 2.4. On an annual basis, required certifications must be made for these Site-specific ICs and ECs to ensure that the required IC/ ECs are in place, are performing properly, and remain effective; and to confirm that they are continuing to be protective of human health and the environment. The respective IC/EC Certification Form for the controls that are currently in place for the Site is provided in Appendix A.

3.1.1 Notifications

Notifications will be submitted by the property owner to the NYSDEC, as needed, in accordance with NYSDEC's DER – 10 for the following reasons:

- 60-day advance notice of any proposed changes in Site use that are required under the terms of the BCA, 6NYCRR Part 375 and/or Environmental Conservation Law.
- 7-day advance notice of any field activity associated with the remedial program.
- 15-day advance notice of any proposed ground-intrusive activity pursuant to the Excavation Work Plan.
- Notice within 48-hours of any damage or defect to the foundation, structures or EC that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the Site, along with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action submitted to the NYSDEC within 45 days describing and documenting actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the Site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser/Remedial Party has been provided with a copy of the BCA, and all approved work plans and reports, including this SMP.
- Within 15 days after the transfer of all or part of the Site, the new owner's name, contact representative, and contact information will be confirmed in writing to the NYSDEC.

3.2 Inspections

All inspections were conducted at the frequency specified in the Executive Summary. Specific details of requirements and completed inspections are provided in the following sections. Inspections of remedial components are also conducted when a breakdown of any treatment system component has occurred or whenever a severe condition has taken place, such as power interruption or fire that may affect the ECs. The inspections will determine and document the following:

- IC/ECs are in place, are performing properly, and remain effective;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria;
- Sampling and analysis of appropriate media during monitoring events;
- If Site records are complete and up to date; and
- Changes, or needed changes, to the remedial or monitoring system.

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the Site will be conducted within 5 days of the event to verify the effectiveness of the IC/ECs implemented at the Site by a qualified environmental professional as determined by NYSDEC.

3.3 Monitoring Plan Compliance Report

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the Site, the Site cover system, and all affected Site media identified below. Components of the Monitoring Plan are:

- Sampling and analysis of all appropriate media (e.g., groundwater).
- Assessing compliance with applicable NYSDEC standards, criteria and guidance, particularly ambient groundwater standards and Part 375 SCOs for soil.
- Assessing achievement of the remedial performance criteria.
- Evaluating Site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment.
- Preparing the necessary reports for the various monitoring activities.

Monitoring of the performance of the remedy and overall reduction in contamination onsite will be conducted for the periods specified for each matrix listed in table below. The frequency is subject to change in consultation with NYSDEC and based on reports submitted showing contaminant trends.

Monitoring Program	Frequency	Matrix	Analysis
Site Cover System and Site-Wide Inspection	Annually. First inspection no more than 15 months after issuance of the COC.	Soil	Visual inspection of all cover system components
Groundwater in Monitoring Wells	Quarterly gauging and annual sampling*	Groundwater	VOCs (USEPA Method 8260) for NYSDEC Target Compound List and Tentatively Identified compounds. Emerging Contaminants (USEPA Method 8270 SIM) for 1,4-dioxane and (USEPA Method 537) for PFAS
Free Product in Monitoring Wells	Quarterly gauging	LNAPL	Check for presence of LNAPL and confirm thickness, if applicable. Manual recovery of LNAPL where present and practical
LNAPL Recovery System Inspection	As Needed	LNAPL	Visual Inspection of all system components

A record of the findings of each monitoring/inspection event and maintenance activity performed as described above, where applicable, are documented on the Site Inspection Checklists and the LNAPL Recovery System Monitoring Logs provided in Appendices B and C, respectively of the SMP. If at any time during the reporting period the Volunteers identify a failure of one or more of the ECs or non-compliance with one or more of the ICs, the remedial party must notify NYSDEC and implement corrective measures, in accordance with a Corrective Measures Work Plan (CMWP) submitted to and approved by NYSDEC and provide a periodic certification of the IC/ECs. There were no failures identified during the reporting period.

3.3.1 Site Cover System

Exposure to remaining contamination at the Site is prevented by a non-mechanical engineered Site composite cover system that consists of:

- Existing concrete building slabs for the Paint Factory, 1-Story Brick Building, and 3-Story Warehouse;
- Existing concrete pavement;
- Installed asphalt cap; or
- Installed minimum 2 feet of recycled concrete aggregate (RCA).

The location and details of the Site cover system are shown on Figure 3. Monitoring of the Site cover system will occur on an annual basis as long as the Environmental Easement is in effect to ensure the system's integrity. Monitoring consists of visual inspection, which evaluates the structural integrity of the slab, pavement, and asphalt, and exposure of the demarcation barrier and direction of drainage for the RCA cap.

Roux performed a Site cover system and Site-wide inspection on February 21, 2023. The completed Site Inspection Checklist is provided in Appendix B. The annual inspection determined that all Site cover system elements described herein were observed to be performing as designed during the reporting period of the PRR and are protective of human health and the environment. Photographs taken during the most recent Site-wide inspection are also provided in Appendix B.

3.3.2 Groundwater Monitoring and Sampling

Quarterly groundwater monitoring during the reporting period was performed on May 12, 2022; August 18, 2022; November 10, 2022; and February 21, 2023. Samples were collected annually from the monitoring wells within the SMP monitoring network for Target Compound List (TCL) of VOCS and Tentatively Identified Compounds (TICs) using United States Environmental Protections Agency (USEPA) SW846 Method 8260. Four samples were also collected annually from monitoring wells within the SMP monitoring network each representing a different location at the Site (Driveway, Warehouse, Courtyard, Paint Factory) for 1,4-dioxane using USEPA Method 8270 SIM and PFAS using USEPA Method 537. Purge water and decontamination wastewater generated during the groundwater sampling was containerized in a labeled 55-gallon drum stored onsite. Groundwater analysis results for the August 2022 sampling event are provided in Appendix C. All formal groundwater monitoring reports submitted to the NYSDEC during the reporting period are provided in Appendix G. The sampling, sample handling, decontamination, and field instrument calibration procedures were performed in accordance with procedures detailed in the Quality Assurance Project Plan, provided in Appendix H.

The most recent round of SMP groundwater monitoring indicated detections above NYSDEC AWQSGV for eight (8) compounds, excluding the acetone detections that were most likely caused by laboratory preservative methods:

- 1,3,5-Trimethlybenzene concentrations ranged from 6.1 µg/L to 58 µg/L with the highest concentration detected at MW-44;
- Benzene concentrations ranged from 1.5 µg/L to 4.1 µg/L with the highest concentration detected at MW-40;
- Isopropylbenzene concentrations ranged from 6.6 µg/L to 41 µg/L with the highest concentration detected at MW-33;
- Ethylbenzene concentrations ranged from 6.2 µg/L to 53 µg/L with the highest concentration detected at MW-33;
- n-Propylbenzene concentrations ranged from 17 µg/L to 93 µg/L with the highest concentration detected in MW-33;
- sec-Butylbenzene concentrations ranged from 5.5 µg/L to 35 µg/L with the highest concentration detected in MW-33;
- tert-Butylbenzene concentrations ranged from 5.5 µg/L to 10 µg/L with the highest concentration detected in MW-33; and
- Total xylenes concentrations ranged from 7.2 µg/L to 29 µg/L with the highest concentration detected at MW-44.

VOC groundwater concentrations continue to be consistent with previous sampling events. Total TICs were reported for the first time at the Site during this period, and were observed between non-detect and 838 µg/L.

For the emerging contaminants analyzed during this period, there were detections above NYSDEC Drinking Water Maximum Contaminant Levels (MCLs) for the three compounds that apply to this standard:

- Perfluorooctanesulfonic acid (PFOS) concentrations ranged from 3.15 µg/L to 97.3 µg/L with the highest concentration detected at MW-40;
- Perfluorooctanoic acid (PFOA) concentrations ranged from 8.64 µg/L to 42.1 µg/L with the highest concentration detected at MW-40.

Although the observed concentrations exceed drinking water standards, groundwater beneath the Site will continue to not be used for drinking or industrial purposes and will continue to be protected from direct exposure with the Site Cover system.

Roux does not believe ISCO or other applicable technologies, (i.e., bioventing, bioremediation, or air sparging) would effectively address groundwater and gross contamination in soil at the Site. As such, alternative treatment options (i.e., stabilization) would be further evaluated as Site redevelopment plans are finalized.

3.3.3 Soil Vapor Intrusion Monitoring

New buildings with occupancy and slab-on-grade design may require a vapor barrier and sub-slab depressurization system. Soil vapor intrusion sampling will be performed during redevelopment planning to assess the potential for intrusion into the new buildings. At this time no plans for redevelopment have been established.

3.4 Operation and Maintenance Plan Compliance Report

The O&M Plan provided in the SMP:

- Includes the procedures necessary to allow individuals unfamiliar with the Site to operate and maintain the LNAPL recovery system;
- Includes troubleshooting as referenced in the equipment manual(s); and
- Will be updated periodically to reflect changes in Site conditions or the manner in which the SSDS is operated and maintained.

The LNAPL recovery system consists of a Geotech AC Sipper connected to five recovery wells (RW-1 through RW-5). The system operates when product is present within the recovery well. To date, the Sipper has recovered approximately 3.3 gallons of LNAPL. Due to the lack of presence of detectable LNAPL, the recovery system has not been running since March 30, 2017. Complete details of the NYSDEC-approved LNAPL recovery system including as-built drawings and startup procedures are presented in the SMP.

3.4.1 LNAPL Recovery System Operation Monitoring

All mechanical aspects of the product recovery system are visibly inspected to ensure proper function. Inspection activities include making sure that power supply is functioning, verifying no leaks are present in any of the recovery tubing, hoses, or connections. The 55-gallon product storage drum was also checked during each visit to determine if disposal arrangements needed to be made. The system remains in place in the event recoverable LNAPL is observed during future monitoring events.

Free product levels within the wells located in the area were monitored and recorded to determine if the system needed to be restarted. Wells were gauged quarterly in accordance with the Site’s IC/EC requirements. The system will remain in-place in the event that future monitoring events identify recoverable LNAPL. The system will be decommissioned upon Site redevelopment.

Moving forward, any LNAPL that is observed in monitoring wells at the Site during routine gauging events that are not within the capture zone of these existing recovery wells will continue to be manually recovered, to the extent practical, on a quarterly basis. During the reporting period, approximately 3 total gallons of LNAPL was recovered from MW-2R, MW-3, MW-17, MW-33, and MW-34.

Well ID	LNAPL Recovered (gallons)
MW-2R	0.7
MW-3	0.2
MW-17	0.2
MW-33	1.2
MW-34	0.8

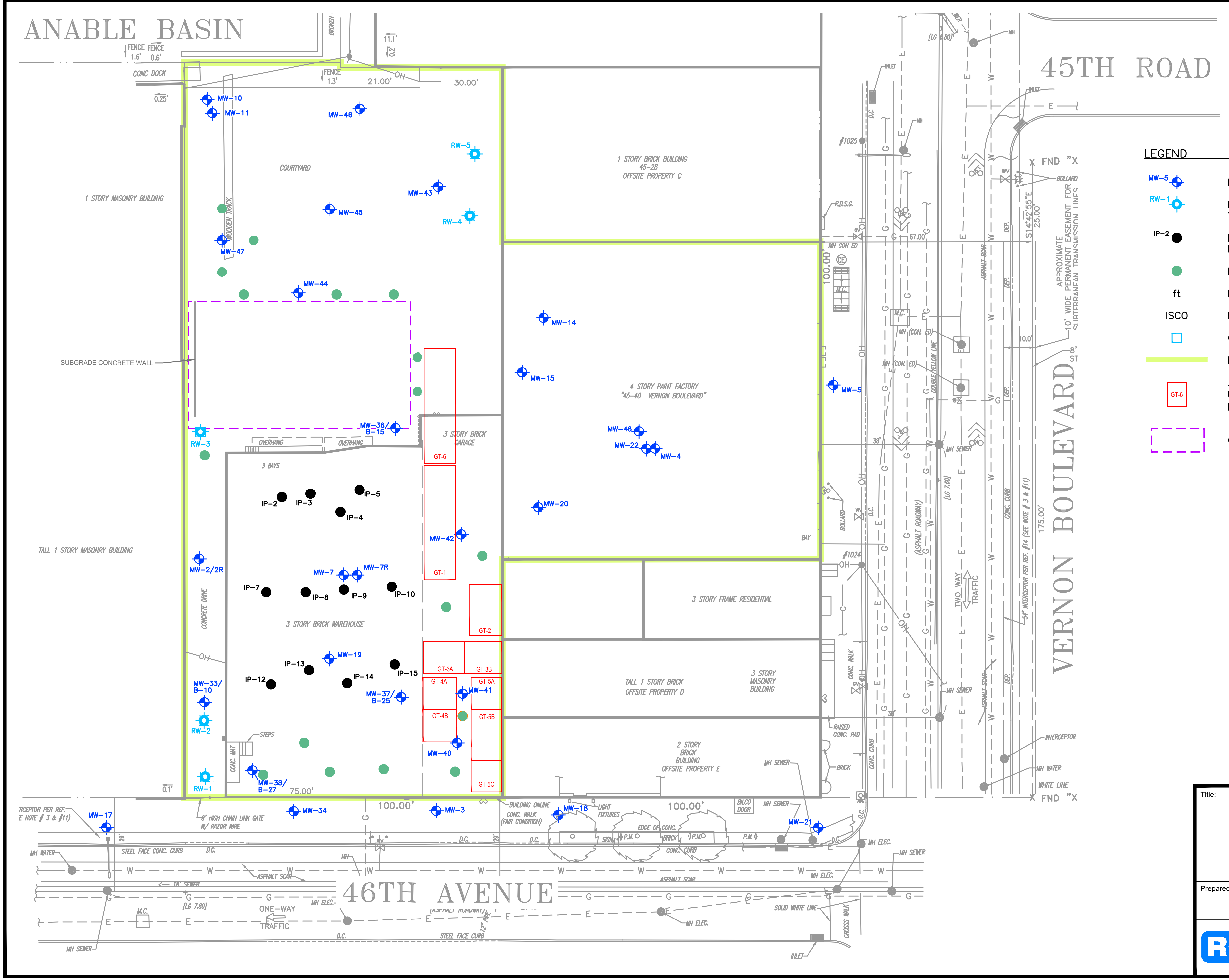
The required LNAPL Recovery System Monitoring Logs that were completed during the reporting period are provided in chronological order in Appendix D. O&M activities described herein determined that the O&M Plan was carried out as designed during the reporting period of the PRR and it is protective of human health and the environment.

4. Overall Conclusions and Recommendations

The following section presents conclusions from inspections and monitoring activities and recommendations.

- The ICs and ECs are performing as designed, are effective, and are compliant with specifications described in the SMP. No changes to the monitoring plan are recommended at this time.

FIGURES



LEGEND

MW-5	LOCATION AND DESIGNATION OF MONITORING WELL
RW-1	LOCATION AND DESIGNATION OF LNAPL RECOVERY WELL
IP-2 ●	LOCATION AND DESIGNATION OF PERMANENT ISCO INJECTION POINT
●	LOCATION OF FIRST ROUND ISCO INJECTION POINT
ft	FEET
ISCO	IN-SITU CHEMICAL OXIDATION
☐	CONCRETE VAULT
🟩	PROPERTY BOUNDARY
GT-6	APPROXIMATE LOCATION AND DESIGNATION OF UNDERGROUND STORAGE TANK (ABANDONED IN PLACE)
☐	CONCRETE SLAB

N

30' 0 30'

Title:

SITE PLAN

SITE MANAGEMENT PERIODIC REVIEW REPORT
PARAGON PAINT AND VARNISH CORPORATION

Prepared for:

CSC 4540 PROPERTY CO. LLC

ROUX

Compiled by: C.H.	Date: 24APR23	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	1
Project Mgr: C.H.	Project: 2051.0001Y002	
File: 2051.0001Y274.01.DWG		

V:\CADPROJECTS\2051Y0001Y\274\2051.0001Y274.01.DWG

MW-11	08/12/2021	08/18/2022
COCs		
Benzene	0.5 U	0.5 U
Ethylbenzene	2.5 U	2.5 U
Isopropylbenzene (Cumene)	2.5 U	2.5 U
m,p-Xylene	2.5 U	2.5 U
O-Xylene (1,2-Dimethylbenzene)	2.5 U	2.5 U
Xylenes	2.5 U	2.5 U

MW-10	08/12/2021	08/18/2022
COCs		
Benzene	0.5 U	0.5 U
Ethylbenzene	2.5 U	2.5 U
Isopropylbenzene (Cumene)	2.5 U	2.5 U
m,p-Xylene	2.5 U	2.5 U
O-Xylene (1,2-Dimethylbenzene)	2.5 U	2.5 U
Xylenes	2.5 U	2.5 U

MW-46	08/12/2021	08/12/2021	08/18/2022
COCs		DUP	
Benzene	0.5 U	0.5 U	0.5 U
Ethylbenzene	2.5 U	2.5 U	2.5 U
Isopropylbenzene (Cumene)	0.82 J	0.84 J	2.5 U
m,p-Xylene	2.5 U	2.5 U	2.5 U
O-Xylene (1,2-Dimethylbenzene)	2.5 U	2.5 U	2.5 U
Xylenes	2.5 U	2.5 U	2.5 U

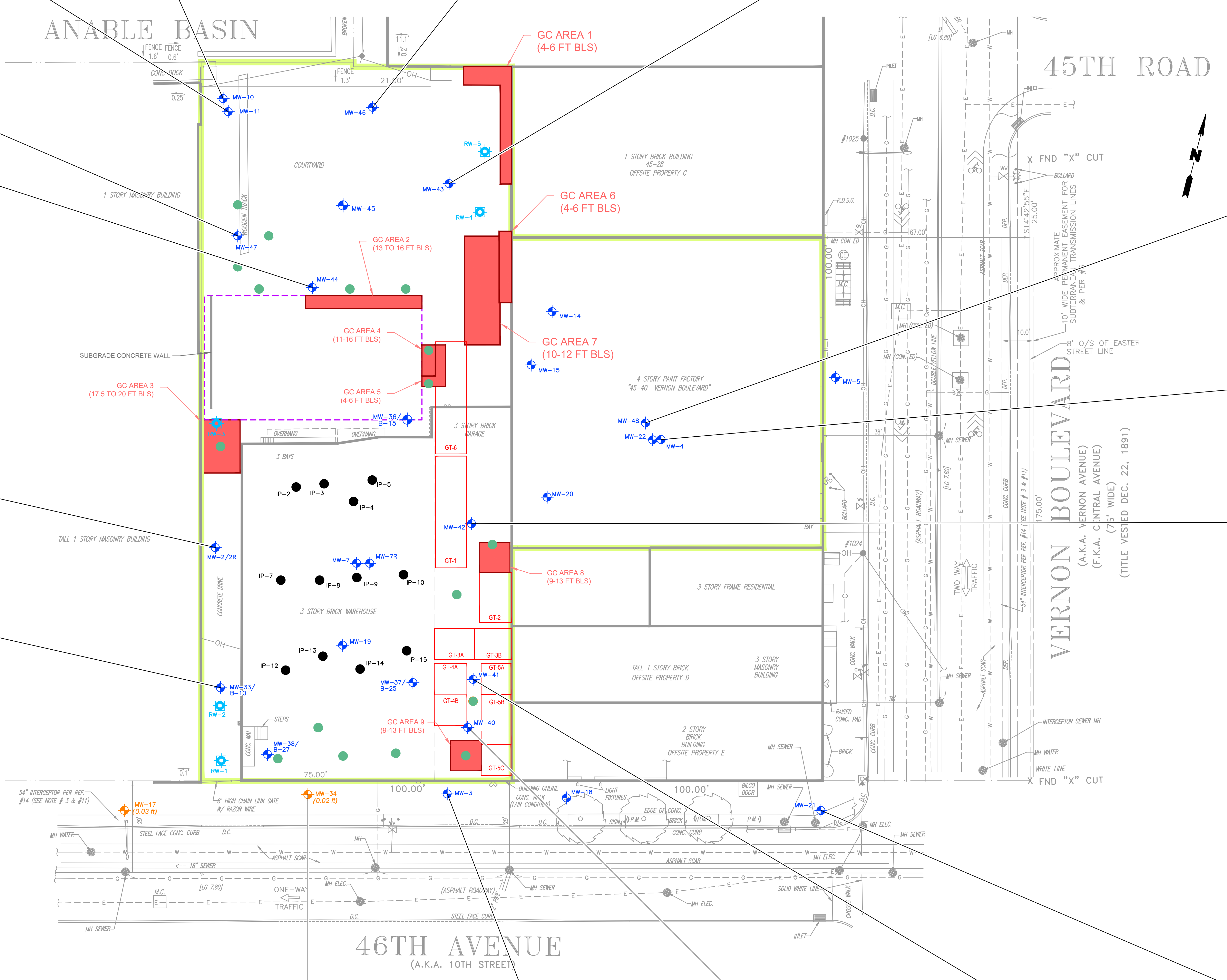
MW-43	08/12/2021	08/18/2022
COCs		
Benzene	1 U	NS
Ethylbenzene	4.3 J	NS
Isopropylbenzene (Cumene)	**9.3**	NS
m,p-Xylene	2 J	NS
O-Xylene (1,2-Dimethylbenzene)	2.6 J	NS
Xylenes	4.6 J	NS

MW-47	08/12/2021	08/18/2022
COCs		
Benzene	0.5 U	NS
Ethylbenzene	2.5 U	NS
Isopropylbenzene (Cumene)	2.5 U	NS
m,p-Xylene	2.5 U	NS
O-Xylene (1,2-Dimethylbenzene)	2.5 U	NS
Xylenes	2.5 U	NS

MW-44	08/12/2021	08/18/2022
COCs		
Benzene	0.5 U	0.51
Ethylbenzene	2.5 U	**6.6**
Isopropylbenzene (Cumene)	2.5 U	**13**
m,p-Xylene	0.78 J	**19**
O-Xylene (1,2-Dimethylbenzene)	2.5 U	**9.5**
Xylenes	0.78 J	**29**

MW-2R	08/12/2021	08/18/2022
COCs		
Benzene	**5.2 J+**	0.8+
Ethylbenzene	**26 J+**	1.7 J+
Isopropylbenzene (Cumene)	**61 J+**	**13 J+**
m,p-Xylene	10 U	2.5 U
O-Xylene (1,2-Dimethylbenzene)	10 U	2.5 U
Xylenes	10 U	2.5 U

MW-33	08/12/2021	08/18/2022
COCs		
Benzene	NS	**3.9 J+**
Ethylbenzene	NS	**41 J+**
Isopropylbenzene (Cumene)	NS	**53 J+**
m,p-Xylene	NS	4.9 J+
O-Xylene (1,2-Dimethylbenzene)	NS	2.3 J+
Xylenes	NS	**7.2 J+**



MW-48	08/12/2021	08/18/2022	08/18/2022
COCs			FD
Benzene	0.5 U	0.5 U	0.5 U
Ethylbenzene	2.5 U	2.5 U	2.5 U
Isopropylbenzene (Cumene)	2.5 U	**6.7 J**	2.7 J
m,p-Xylene	2.5 U	2.5 U	2.5 U
O-Xylene (1,2-Dimethylbenzene)	2.5 U	2.5 U	2.5 U
Xylenes	2.5 U	2.5 U	2.5 U

MW-4	08/12/2021	08/18/2022
COCs		
Benzene	0.5 U	0.5 U
Ethylbenzene	2.5 U	2.5 U
Isopropylbenzene (Cumene)	1.3 J	2.5 U
m,p-Xylene	2.5 U	2.5 U
O-Xylene (1,2-Dimethylbenzene)	2.5 U	2.5 U
Xylenes	2.5 U	2.5 U

MW-42	08/12/2021	08/18/2022
COCs		
Benzene	0.5 U	0.16 J
Ethylbenzene	2.5 U	0.76 J
Isopropylbenzene (Cumene)	2.5 U	1.8 J
m,p-Xylene	2.5 U	2 J
O-Xylene (1,2-Dimethylbenzene)	2.5 U	2.5 U
Xylenes	2.5 U	2 J

MW-34	08/12/2021	08/18/2022
COCs		
Benzene	NS	2.5 U
Ethylbenzene	NS	12 U
Isopropylbenzene (Cumene)	NS	**18**
m,p-Xylene	NS	12 U
O-Xylene (1,2-Dimethylbenzene)	NS	12 U
Xylenes	NS	12 U

MW-3	08/12/2021	08/18/2022
COCs		
Benzene	**1.1**	**1.5**
Ethylbenzene	2.5 U	2.5 U
Isopropylbenzene (Cumene)	**31**	**28**
m,p-Xylene	2.5 U	2.5 U
O-Xylene (1,2-Dimethylbenzene)	1.6 J	2.5 U
Xylenes	1.6 J	2.5 U

MW-40	08/12/2021	08/18/2022
COCs		
Benzene	**3**	**4.1**
Ethylbenzene	2.5 U	2.5 U
Isopropylbenzene (Cumene)	**7.2**	**6.2**
m,p-Xylene	2.5 U	2.5 U
O-Xylene (1,2-Dimethylbenzene)	2.5 U	2.5 U
Xylenes	2.5 U	2.5 U

MW-41	08/12/2021	08/18/2022
COCs		
Benzene	0.5 U	0.5 U
Ethylbenzene	2.5 U	2.5 U
Isopropylbenzene (Cumene)	2.5 U	0.83 J
m,p-Xylene	2.5 U	2.5 U
O-Xylene (1,2-Dimethylbenzene)	2.5 U	2.5 U
Xylenes	2.5 U	2.5 U

MW-21	8/12/2021	8/18/2022
COCs		
Benzene	0.5 U	0.5 U
Ethylbenzene	2.5 U	2.5 U
Isopropylbenzene (Cumene)	2.5 U	2.5 U
m,p-Xylene	2.5 U	2.5 U
O-Xylene (1,2-Dimethylbenzene)	2.5 U	2.5 U
Xylenes	2.5 U	2.5 U

LEGEND

MW-5 ⊕	LOCATION AND DESIGNATION OF MONITORING WELL (NO LNAPL PRESENT)
MW-3 ⊕	LOCATION AND DESIGNATION OF MONITORING WELL (LNAPL PRESENT)
RW-1 ◎	LOCATION AND DESIGNATION OF LNAPL RECOVERY WELL (LNAPL THICKNESS SHOWN IF PRESENT)
IP-2 ●	LOCATION AND DESIGNATION OF PERMANENT ISCO INJECTION POINT
●	LOCATION OF FIRST ROUND ISCO INJECTION POINT
(0.53 ft)	LNAPL THICKNESS
GC AREA 1 (4-6 FT BLS) 🟥	DESIGNATION AND INFERRED HORIZONTAL AND VERTICAL LIMITS OF REMAINING GROSSLY CONTAMINATED MATERIAL BASED ON FIELD OBSERVATION AND RESULTS OF POST-EXCAVATION SAMPLING AND FIELD SCREENING
ft	FEET
LNAPL	LIGHT NON-AQUEOUS PHASE LIQUID
ISCO	IN-SITU CHEMICAL OXIDATION
□	CONCRETE VAULT
▬	PROPERTY BOUNDARY
GT-6	APPROXIMATE LOCATION AND DESIGNATION OF UNDERGROUND STORAGE TANK (ABANDONED IN PLACE)
⬚	CONCRETE SLAB

TYPICAL DATA BOX INFORMATION

SAMPLE ID. → MW-48

SAMPLE DATE ← 08/12/2021, 08/18/2022, 08/18/2022

ANALYTES – Benzene through Xylenes

CONCENTRATIONS (IN µg/L)

MW-48	08/12/2021	08/18/2022	08/18/2022
COCs			FD
Benzene	0.5 U	0.5 U	0.5 U
Ethylbenzene	2.5 U	2.5 U	2.5 U
Isopropylbenzene (Cumene)	2.5 U	**6.7 J**	2.7 J
m,p-Xylene	2.5 U	2.5 U	2.5 U
O-Xylene (1,2-Dimethylbenzene)	2.5 U	2.5 U	2.5 U
Xylenes	2.5 U	2.5 U	2.5 U

PARAMETER	STANDARDS*
Benzene	1
Ethylbenzene	5
Isopropylbenzene (Cumene)	5
m,p-Xylene	5
O-Xylene (1,2-Dimethylbenzene)	5
Xylenes	5

CONCENTRATIONS IN µg/L

µg/L – MICROGRAMS PER LITER

* – NYSDEC AWQSGVs

NYSDEC – NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

AWQSGVs – AMBIENT WATER-QUALITY STANDARDS AND GUIDANCE VALUES

– – NO NYSDEC AWQSGV AVAILABLE

DUP – DUPLICATE SAMPLE

J – ESTIMATED VALUE

J+ – ESTIMATED VALUE HIGH BIAS

NS – NOT SAMPLED

U – COMPOUND WAS ANALYZED FOR BUT NOT DETECTED

BOLD – INDICATES THAT PARAMETER WAS DETECTED ABOVE THE NYSDEC AWQSGVS

NOTES

1. AN OBSERVABLE SHEEN WAS RECORDED DURING PURGE AT MONITORING WELL MW-34 AND WAS NOT SAMPLED.
2. MONITORING WELLS MW-7, MW-19, MW-37, MW-38 AND MW-45 WERE DRY DURING GAUGING OR PURGING AND WERE NOT SAMPLED.

30' 0 30'

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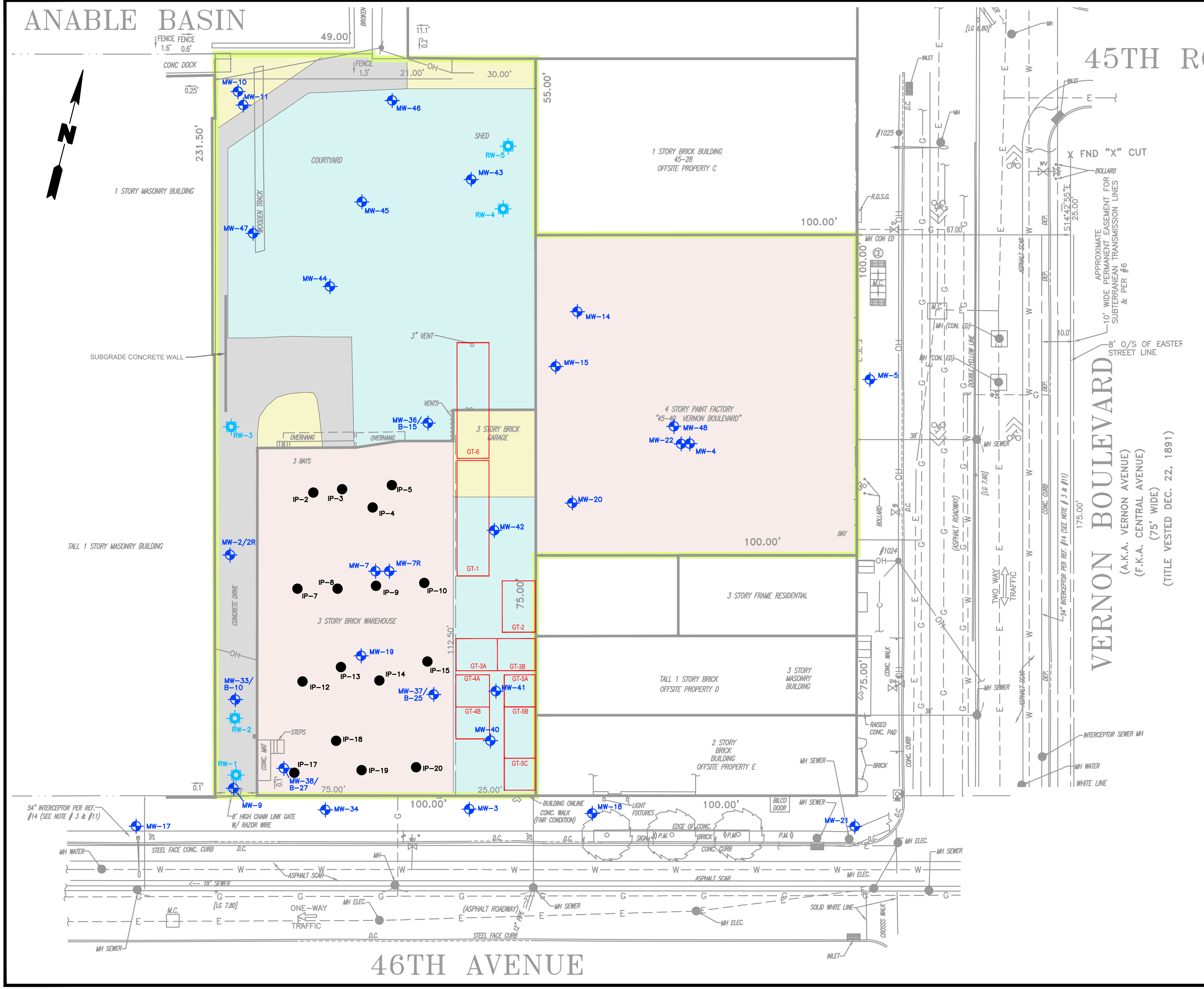
(631) 232-2600

PROJECT NAME:
SITE MANAGEMENT PERIODIC REVIEW REPORT
PARAGON PAINT AND VARNISH CORPORATION
LONG ISLAND CITY, NEW YORK

PROJECT FOR:
CSC 4540 PROPERTY CO LLC

TITLE:
CONTAMINANTS OF CONCERN
(COCs) IN GROUNDWATER
AUGUST 2021 TO AUGUST 2022

FIGURE
2



LEGEND

MW-5	LOCATION AND DESIGNATION OF MONITORING WELL
RW-1	LOCATION AND DESIGNATION OF LNAPL RECOVERY WELL
IP-2 ●	LOCATION AND DESIGNATION OF PERMANENT ISCO INJECTION POINT
LNAPL	LIGHT NON-AQUEOUS PHASE LIQUID
ISCO	IN-SITU CHEMICAL OXIDATION
☐	CONCRETE VAULT
🟩	PROPERTY BOUNDARY
GT-6	APPROXIMATE LOCATION AND DESIGNATION OF OF UNDERGROUND STORAGE TANK (ABANDONED IN PLACE)
▨	INSTALLED ASPHALT CAP
🟨	EXISTING CONCRETE PAVEMENT
🟦	INSTALLED RECYCLED CONCRETE AGGREGATE (MIN. 2 FT)
🟫	EXISTING BUILDING SLAB

NOTE

REFER TO AS-BUILT DRAWINGS FOR ELEVATION INFORMATION OF INSTALLED PORTIONS OF COVER SYSTEM.

Title:

ENGINEERING CONTROL LOCATION COMPOSITE COVER SYSTEM

SITE MANAGEMENT PERIODIC REVIEW REPORT
PARAGON PAINT AND VARNISH CORPORATION

Prepared for:

CSC 4540 PROPERTY CO. LLC

ROUX

Compiled by: C.H.	Date: 24APR23	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	3
Project Mgr: C.H.	Project: 2051.0001Y002	
File: 2051.0001Y274.03.DWG		

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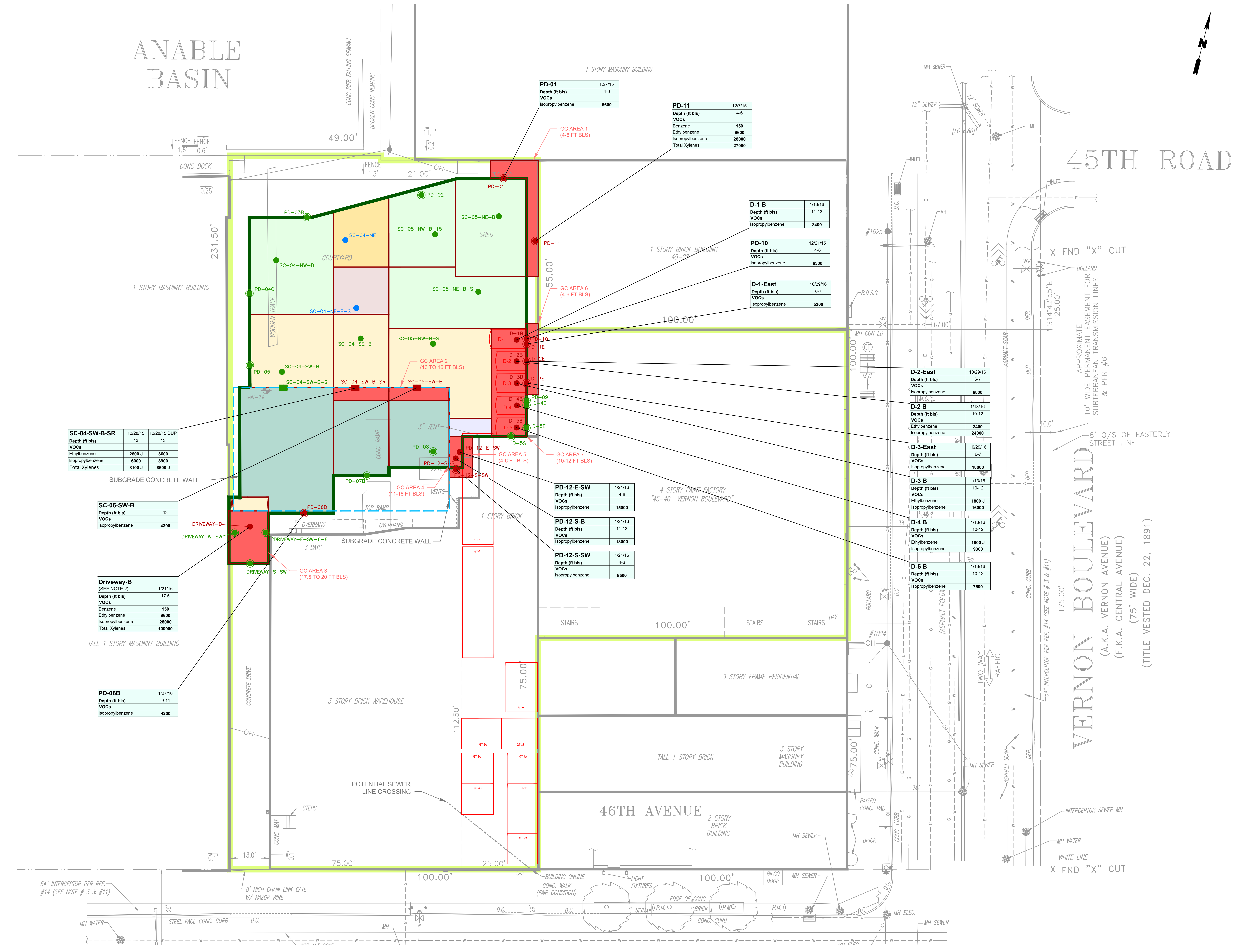

PD-01	12/7/15
Depth (ft bls)	4-6
VOCs	
Isopropylbenzene	**5600**

PD-11	12/7/15
Depth (ft bls)	4-6
VOCs	
Benzene	**150**
Ethylbenzene	**9600**
Isopropylbenzene	**28000**
Total Xylenes	**27000**

D-1 B	1/13/16
Depth (ft bls)	11-13
VOCs	
Isopropylbenzene	**8400**

PD-10	12/21/15
Depth (ft bls)	4-6
VOCs	
Isopropylbenzene	**6300**

D-1-East	10/29/16
Depth (ft bls)	6-7
VOCs	
Isopropylbenzene	**5300**

D-2-East	10/29/16
Depth (ft bls)	6-7
VOCs	
Isopropylbenzene	**6800**

D-2 B	1/13/16
Depth (ft bls)	10-12
VOCs	
Ethylbenzene	**2400**
Isopropylbenzene	**24000**

D-3-East	10/29/16
Depth (ft bls)	6-7
VOCs	
Isopropylbenzene	**18000**

D-3 B	1/13/16
Depth (ft bls)	10-12
VOCs	
Ethylbenzene	**1800 J**
Isopropylbenzene	**16000**

D-4 B	1/13/16
Depth (ft bls)	10-12
VOCs	
Ethylbenzene	**1800 J**
Isopropylbenzene	**9300**

D-5 B	1/13/16
Depth (ft bls)	10-12
VOCs	
Isopropylbenzene	**7500**

PD-12-E-SW	1/21/16
Depth (ft bls)	4-6
VOCs	
Isopropylbenzene	**15000**

PD-12-S-B	1/21/16
Depth (ft bls)	11-13
VOCs	
Isopropylbenzene	**18000**

PD-12-S-SW	1/21/16
Depth (ft bls)	4-6
VOCs	
Isopropylbenzene	**8500**

SC-04-SW-B-SR	12/28/15	12/28/15 DUP
Depth (ft bls)	13	13
VOCs		
Ethylbenzene	**2600 J**	**3600**
Isopropylbenzene	**6000**	**8900**
Total Xylenes	**8100 J**	**8600 J**

SC-05-SW-B	
Depth (ft bls)	13
VOCs	
Isopropylbenzene	**4300**

Driveway-B (SEE NOTE 2)	1/21/16
Depth (ft bls)	17.5
VOCs	
Benzene	**150**
Ethylbenzene	**9600**
Isopropylbenzene	**28000**
Total Xylenes	**100000**

PD-06B	1/27/16
Depth (ft bls)	9-11
VOCs	
Isopropylbenzene	**4200**

LEGEND

PD-12-S-B ●	EXCAVATION BOTTOM SOIL SAMPLE LOCATION AND DESIGNATION WITH COMPOUND OF CONCERN EXCEEDANCES OF CLEANUP STANDARDS
PD-10 ◉	EXCAVATION SIDWEWALL SOIL SAMPLE LOCATION AND DESIGNATION WITH COMPOUND OF CONCERN EXCEEDANCES OF CLEANUP STANDARDS
SC-04-SW-B-SR ■	CONCRETE SLAB BOTTOM SOIL SAMPLE LOCATION AND DESIGNATION WITH COMPOUND OF CONCERN EXCEEDANCES OF CLEANUP STANDARDS
SC-05-NW-B-S ●	EXCAVATION BOTTOM SOIL SAMPLE LOCATION AND DESIGNATION WITH COMPOUND OF CONCERN DETECTIONS BELOW CLEANUP STANDARDS
D-5S ◉	EXCAVATION SIDEWALL SOIL SAMPLE LOCATION AND DESIGNATION WITH COMPOUND OF CONCERN DETECTIONS BELOW CLEANUP STANDARDS
SC-04-SW-B-S ■	CONCRETE SLAB BOTTOM SOIL SAMPLE LOCATION AND DESIGNATION WITH COMPOUND OF CONCERN DETECTIONS BELOW CLEANUP STANDARDS (SEE NOTE 1)
SC-04-NE ●	POTENTIAL SAMPLE LOCATION AND DESIGNATION ABANDONED DUE TO REFUSAL
▬	PROPERTY BOUNDARY
GT-6	APPROXIMATE LOCATION AND DESIGNATION OF UNDERGROUND STORAGE TANK (ABANDONED IN PLACE)
D-5	APPROXIMATE LOCATION AND DESIGNATION OF DISHED UNDERGROUND STORAGE TANK (REMOVED)
▬	REMEDIAL ACTION EXCAVATION LIMITS
▭	CONCRETE SLAB
▭	9 FT BLS EXCAVATION FOOTPRINT
▭	11 FT BLS EXCAVATION FOOTPRINT (TOPOGRAPHY OF CONCRETE SLAB)
▭	13 FT BLS EXCAVATION FOOTPRINT
▭	15 FT–15.5 FT BLS EXCAVATION FOOTPRINT
▭	16 FT BLS EXCAVATION FOOTPRINT
▭	17 FT BLS EXCAVATION FOOTPRINT
▭	18 FT BLS EXCAVATION FOOTPRINT
GC AREA 1 (4-6 FT BLS) 🟥	DESIGNATION AND INFERRED HORIZONTAL AND VERTICAL LIMITS OF REMAINING GROSSLY CONTAMINATED MATERIAL BASED ON FIELD OBSERVATION AND RESULTS OF POST–EXCAVATION SAMPLING AND FIELD SCREENING

Parameter	Standards* (µg/kg)
VOCs	
Benzene	**60**
Ethylbenzene	**1000**
Isopropylbenzene	****2300**
Total Xylenes	**1600**

CONCENTRATIONS IN µg/kg

µg/kg – MICROGRAMS PER KILOGRAM
NYSDEC – NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
* – NYSDEC PART 375 PROTECTION OF GROUNDWATER
** – NYSDEC CP–51 PROTECTION OF GROUNDWATER STANDARDS
VOCS – VOLATILE ORGANIC COMPOUNDS
J – ESTIMATED VALUE
FT BLS – FEET BELOW LAND SURFACE

NOTE

1. CONCRETE SLAB LOCATED IN COURTYARD AT APPROXIMATELY 11 TO 13 FT BLS WAS NOT REMOVED DURING REMEDIAL ACTION DUE TO SIZE. POST EXCAVATION SOIL SAMPLES WERE COLLECTED AT ACCESSIBLE EDGE BENEATH CONCRETE SLAB AS SHOWN DURING THE PERFORMANCE OF THE REMEDIAL ACTION.
2. GROSS CONTAMINATION PRESENT FROM 17.5' TO 20' BLS. ADDITIONAL EXCAVATION NOT PERFORMED DUE TO LIMITATIONS OF SHORING METHOD USED.

ABANDONED IN PLACE
UNDERGROUND STORAGE TANK INFORMATION

TANK ID	ESTIMATED DIAMETER (FT)	ESTIMATED LENGTH (FT)	ESTIMATED CAPACITY (GAL)
GT-1	10	36	21,000
GT-2	10	13	7,500
GT-3A	10	11.5	6,700
GT-3B	10	11.5	6,700
GT-4A	10	9	5,000
GT-4B	10	9	5,000
GT-5A	10	12	7,000
GT-5B	10	12	7,000
GT-5C	10	12	7,000
GT-6	10	36	21,000
REMOVED UNDERGROUND STORAGE TANK INFORMATION			
D-1	6	12	2,500
D-2	6	10	2,000
D-3	6	10	2,000
D-4	6	10	2,000
D-5	6	10	2,000

15' 0 15'

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(631) 232-2600

PROJECT NAME:
SITE MANAGEMENT PERIODIC REVIEW REPORT
PARAGON PAINT AND VARNISH CORPORATION
LONG ISLAND CITY, NEW YORK

PROJECT FOR:
CSC 4540 PROPERTY CO LLC

TITLE:
CONTAMINATION REMAINING IN SOIL AFTER THE REMEDIAL ACTION WITHIN COURTYARD

FIGURE
4

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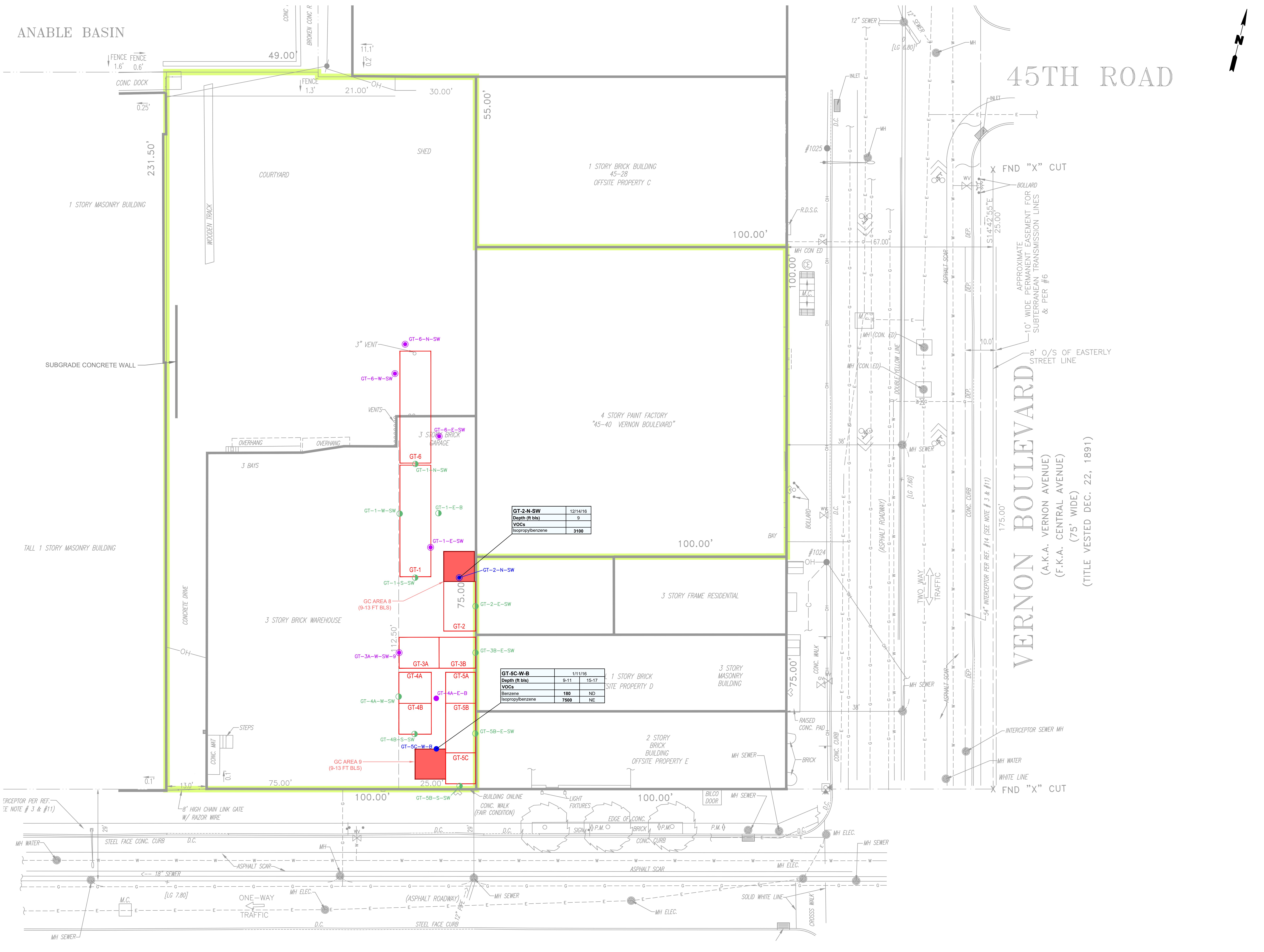

GT-2-N-SW	12/14/16
Depth (ft bls)	9
VOCs	
Isopropylbenzene	**3100**

GT-5C-W-B	1/11/16	
Depth (ft bls)	9-11	15-17
VOCs		
Benzene	**180**	ND
Isopropylbenzene	**7500**	NE

LEGEND

GT-1-E-B ◑	POTENTIAL CONFIRMATORY SOIL SAMPLE LOCATION AND DESIGNATION WHERE CONCRETE REFUSAL ENCOUNTERED
GT-6-N-SW ◉	UNDERGROUND STORAGE TANK BOTTOM SOIL SAMPLE LOCATION AND DESIGNATION BENEATH CONCRETE SLAB WITH COMPOUND OF CONCERN DETECTIONS BELOW CLEANUP STANDARDS
GT-4A-E-B ●	UNDERGROUND STORAGE TANK SIDEWALL SOIL SAMPLE LOCATION AND DESIGNATION WITH COMPOUND OF CONCERN DETECTIONS BELOW CLEANUP STANDARDS
GT-5C-W-B ●	UNDERGROUND STORAGE TANK BOTTOM SOIL SAMPLE LOCATION AND DESIGNATION BENEATH CONCRETE SLAB WITH COMPOUND OF CONCERN EXCEEDANCES OF CLEANUP STANDARDS
GT-2-N-SW ◉	UNDERGROUND STORAGE TANK SIDEWALL SOIL SAMPLE LOCATION AND DESIGNATION WITH COMPOUND OF CONCERN EXCEEDANCES OF CLEANUP STANDARDS
🟩	PROPERTY BOUNDARY
GT-6	APPROXIMATE LOCATION AND DESIGNATION OF UNDERGROUND STORAGE TANK (ABANDONED IN PLACE)
GC AREA 8 (9-13 FT BLS) 🟥	DESIGNATION AND INFERRED HORIZONTAL AND VERTICAL LIMITS OF REMAINING GROSSLY CONTAMINATED MATERIAL BASED ON FIELD OBSERVATION AND RESULTS OF POST-EXCAVATION SAMPLING AND FIELD SCREENING

Parameter	Standards* (µg/kg)
VOCs	
Benzene	**60**
Isopropylbenzene	****2300**

CONCENTRATIONS IN µg/kg

µg/kg – MICROGRAMS PER KILOGRAM
NYSDEC – NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
* – NYSDEC PART 375 PROTECTION OF GROUNDWATER
** – NYSDEC CP-51 PROTECTION OF GROUNDWATER STANDARDS
VOCS – VOLATILE ORGANIC COMPOUNDS
ND – NO DETECTION
NE – NO EXCEEDANCE
FT BLS – FEET BELOW LAND SURFACE

NO.	DATE	REVISION DESCRIPTION	INT.

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PROJECT NAME:
SITE MANAGEMENT PERIODIC REVIEW REPORT
PARAGON PAINT AND VARNISH CORPORATION
LONG ISLAND CITY, NEW YORK

PROJECT FOR:
CSC 4540 PROPERTY CO LLC

TITLE:
CONTAMINATION REMAINING IN SOIL AFTER THE REMEDIAL ACTION WITHIN THE GARAGE

FIGURE
5

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APPENDICES

A. IC/EC Certification Form

B. Site Inspection Checklists and Photo Log

C. Groundwater Monitoring Results

D. LNAPL Recovery System Monitoring Logs

E. NYSDEC Site Management Plan Approval

F. NYSDEC Response Letter to SMP Modifications

G. Formal Groundwater Monitoring Report and NYSDEC Correspondence

H. Revised Quality Assurance Project Plan

APPENDIX A

IC/EC Certification Form

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. **C241108**

Site Name **Paragon Paint and Varnish Corp**

Site Address: 5-49 46th Avenue Zip Code: 11101-5214
City/Town: Long Island City
County: Queens
Site Acreage: 0.759

Reporting Period: April 15, 2022 to April 15, 2023

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

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Restricted-Residential, Commercial, and Industrial	☑	☐
7. Are all ICs in place and functioning as designed?	☑	☐

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

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

_______________________________________ ____________________
Signature of Owner, Remedial Party or Designated Representative Date

Box 2A

		YES	NO
8.	Has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?	☐	☑

If you answered YES to question 8, include documentation or evidence that documentation has been previously submitted with this certification form.

		YES	NO
9.	Are the assumptions in the Qualitative Exposure Assessment still valid? (The Qualitative Exposure Assessment must be certified every five years)	☑	☐

If you answered NO to question 9, the Periodic Review Report must include an updated Qualitative Exposure Assessment based on the new assumptions.

SITE NO. C241108 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
4-26-4	CSC 4540 Property Co, LLC, c/o Simon Dev	Ground Water Use Restriction Soil Management Plan Monitoring Plan Site Management Plan O&M Plan IC/EC Plan

Site Management Plan (SMP)
Conduct groundwater monitoring
Compliance with a soil management plan
Prepare periodic review reports
Perform OM&M as per the SMP
Evaluate vapor intrusion before occupying buildings
No vegetable gardens

Box 4

Description of Engineering Controls

Parcel	Engineering Control
4-26-4	Cover System

Cover System for entire site 0.759 acres
LNAPL Recovery System
ISCO Injections as required

Box 5

Periodic Review Report (PRR) Certification Statements

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

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

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

YES	NO
☑	☐

2. For each Engineering control listed in Box 4, I certify by checking "YES" below that all of the following statements are true:

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

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

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

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

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

YES	NO
☑	☐

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

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

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. C241108

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 Omar Ramotar at Roux Environmental Engineering and Geology, D.P.C. 209 Shafter Street, Islandia, NY 11749,
print name print business address

am certifying as Remedial Party (Owner or Remedial Party)

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

Omar Ramotar 5-12-23

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

Date

IC/EC CERTIFICATIONS

Box 7

Professional Engineer Signature

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

I Omar Ramotar at Roux Environmental Engineering and Geology, D.P.C. 209 Shafter Street, Islandia, NY 11749,
print name print business address

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

STATE OF NEW YORK
OMAR RAMOTAR
No. 077995
LICENSED PROFESSIONAL ENGINEER

5-12-23

Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification

Stamp
(Required for PE)

Date

Enclosure 3
Periodic Review Report (PRR) General Guidance

I. Executive Summary: (1/2-page or less)
   A. Provide a brief summary of site, nature and extent of contamination, and remedial history.
   B. Effectiveness of the Remedial Program - Provide overall conclusions regarding;
      1. progress made during the reporting period toward meeting the remedial objectives for the site
      2. the ultimate ability of the remedial program to achieve the remedial objectives for the site.
   C. Compliance
      1. Identify any areas of non-compliance regarding the major elements of the Site Management Plan (SMP, i.e., the Institutional/Engineering Control (IC/EC) Plan, the Monitoring Plan, and the Operation & Maintenance (O&M) Plan).
      2. Propose steps to be taken and a schedule to correct any areas of non-compliance.
   D. Recommendations
      1. recommend whether any changes to the SMP are needed
      2. recommend any changes to the frequency for submittal of PRRs (increase, decrease)
      3. recommend whether the requirements for discontinuing site management have been met.

II. Site Overview (one page or less)
   A. Describe the site location, boundaries (figure), significant features, surrounding area, and the nature and extent of contamination prior to site remediation.
   B. Describe the chronology of the main features of the remedial program for the site, the components of the selected remedy, cleanup goals, site closure criteria, and any significant changes to the selected remedy that have been made since remedy selection.

III. Evaluate Remedy Performance, Effectiveness, and Protectiveness
   Using tables, graphs, charts and bulleted text to the extent practicable, describe the effectiveness of the remedy in achieving the remedial goals for the site. Base findings, recommendations, and conclusions on objective data. Evaluations and should be presented simply and concisely.

IV. IC/EC Plan Compliance Report (if applicable)
   A. IC/EC Requirements and Compliance
      1. Describe each control, its objective, and how performance of the control is evaluated.
      2. Summarize the status of each goal (whether it is fully in place and its effectiveness).
      3. Corrective Measures: describe steps proposed to address any deficiencies in ICECs.
      4. Conclusions and recommendations for changes.
   B. IC/EC Certification
      1. The certification must be complete (even if there are IC/EC deficiencies), and certified by the appropriate party as set forth in a Department-approved certification form(s).

V. Monitoring Plan Compliance Report (if applicable)
   A. Components of the Monitoring Plan (tabular presentations preferred) - Describe the requirements of the monitoring plan by media (i.e., soil, groundwater, sediment, etc.) and by any remedial technologies being used at the site.
   B. Summary of Monitoring Completed During Reporting Period - Describe the monitoring tasks actually completed during this PRR reporting period. Tables and/or figures should be used to show all data.
   C. Comparisons with Remedial Objectives - Compare the results of all monitoring with the remedial objectives for the site. Include trend analyses where possible.
   D. Monitoring Deficiencies - Describe any ways in which monitoring did not fully comply with the monitoring plan.
   E. Conclusions and Recommendations for Changes - Provide overall conclusions regarding the monitoring completed and the resulting evaluations regarding remedial effectiveness.

VI. Operation & Maintenance (O&M) Plan Compliance Report (if applicable)
   A. Components of O&M Plan - Describe the requirements of the O&M plan including required activities, frequencies, recordkeeping, etc.
   B. Summary of O&M Completed During Reporting Period - Describe the O&M tasks actually completed during this PRR reporting period.
   C. Evaluation of Remedial Systems - Based upon the results of the O&M activities completed, evaluated

the ability of each component of the remedy subject to O&M requirements to perform as designed/expected.

D. O&M Deficiencies - Identify any deficiencies in complying with the O&M plan during this PRR reporting period.

E. Conclusions and Recommendations for Improvements - Provide an overall conclusion regarding O&M for the site and identify any suggested improvements requiring changes in the O&M Plan.

VII. Overall PRR Conclusions and Recommendations

A. Compliance with SMP - For each component of the SMP (i.e., IC/EC, monitoring, O&M), summarize;
   1. whether all requirements of each plan were met during the reporting period
   2. any requirements not met
   3. proposed plans and a schedule for coming into full compliance.

B. Performance and Effectiveness of the Remedy - Based upon your evaluation of the components of the SMP, form conclusions about the performance of each component and the ability of the remedy to achieve the remedial objectives for the site.

C. Future PRR Submittals
   1. Recommend, with supporting justification, whether the frequency of the submittal of PRRs should be changed (either increased or decreased).
   2. If the requirements for site closure have been achieved, contact the Departments Project Manager for the site to determine what, if any, additional documentation is needed to support a decision to discontinue site management.

VIII. Additional Guidance

Additional guidance regarding the preparation and submittal of an acceptable PRR can be obtained from the Departments Project Manager for the site.

APPENDIX B

Site Inspection Checklists and Photo Log

Appendix B. Site Checklist and Photo Log

ROUX ENVIRONMENTAL ENGINEERING AND GEOLOGY, D.P.C.

SITE-WIDE MONITORING, INSPECTION AND MAINTENANCE FORM

Client: **Vernon 4540 Realty LLC**
Location: **5-49 46th Avenue, Long Island City, Queens, New York**
Inspector: **Michael Sarni**
Date: **Tuesday, February 21, 2023**

Site Observations: **Performed by (MS) on (2/21/2023)**

Yes	No	
[ ]	[X]	Have any Site improvements been made since last inspection?
[ ]	[X]	Has there been any maintenance activity impacting engineering controls?
[X]	[ ]	Are monitoring wells intact?
		-Include sketches or photos of observations (as necessary)

Inspection of RCA Cap: **Performed by (MS) on (2/21/2023)**

Yes	No	
[ ]	[X]	Underlying demarcation barrier exposed?
[X]	[ ]	Are soil caps sloped to allow for drainage away from the peak?

Inspection of Asphalt/Concrete Caps: **Performed by (MS) on (2/21/2023)**

Yes	No	
[ ]	[X]	Significant cracks observed?
[ ]	[X]	Other damage observed? If yes, refer to Page 2 for additional clarification.
		-Include sketches or photos of observations (as nece

Inspection of Building Covers: **Performed by (MS) on (2/21/2023)**

Yes	No	
[X]	[ ]	Were all buildings inspected?
[ ]	[X]	Significant cracks observed?
[ ]	[X]	Other damage observed? If yes, refer to Page 2 for additional clarification.
[ ]	[X]	Any new slab penetrations observed? If yes, include description on page 2.
		-Include sketches or photos of observations (as necessary)

Inspection of LNAPL Recovery System : **Performed by (MS) on (2/21/2023)**

Yes	No	
[X]	[ ]	Were all five (5) Recovery wells intact?
[ ]	**[X]**	Were all five (5) AC Sipper reels operating properly? **See pg. 2**
[ ]	[X]	Were there any signs of corrosion on the 55 gallon drum?
[X]	[ ]	Were the fill alarm and spill alarms operating properly?
[X]	[ ]	Was the secondary containment pallet intact?
[X]	[ ]	Is the AC Sipper control panel intact?

ROUX ENVIRONMENTAL ENGINEERING AND GEOLOGY, D.P.C.
SITE-WIDE MONITORING, INSPECTION AND MAINTENANCE FORM

Client: **Vernon 4540 Realty LLC**
Location: **5-49 46th Avenue, Long Island City, Queens, New York**
Inspector: **Michael Sarni**
Date: **2/21/2023**

Site Observations

See pg. 1

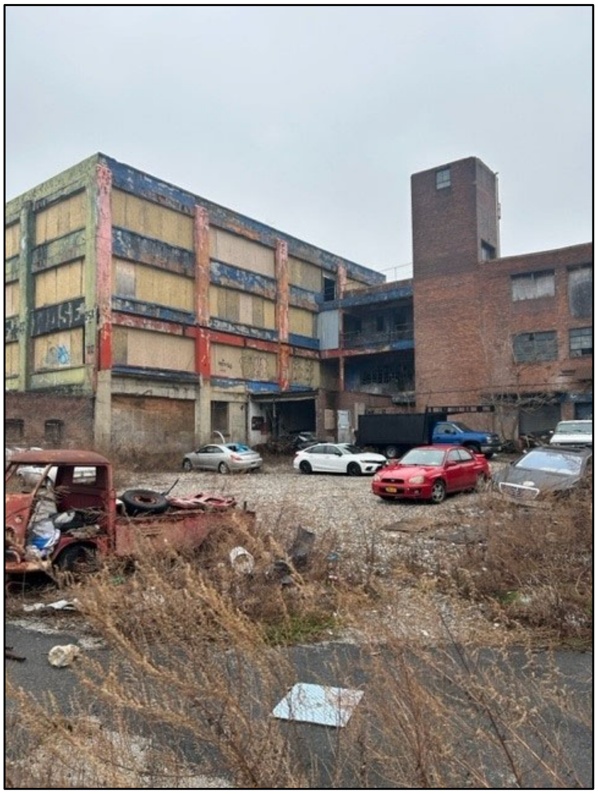
Additional Comments or Clarification Where Corrective Actions May Be Required:

LNAPL Recovery system has been off since March 30, 2017. Operation and maintenance activities will resume upon presence of LNAPL in recovery wells.

Photos of inspection attached.

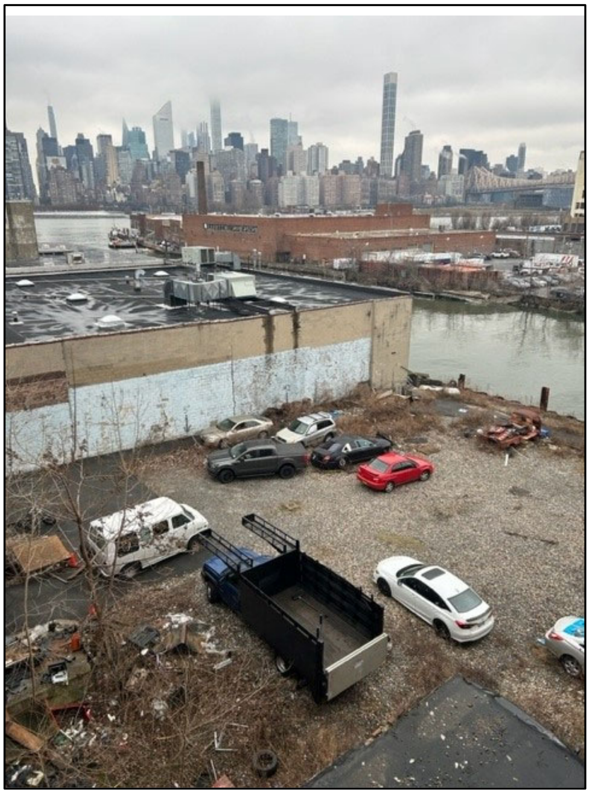
Photograph 1: Condition of driveway looking north

Photograph 2: Conditions of warehouse looking south

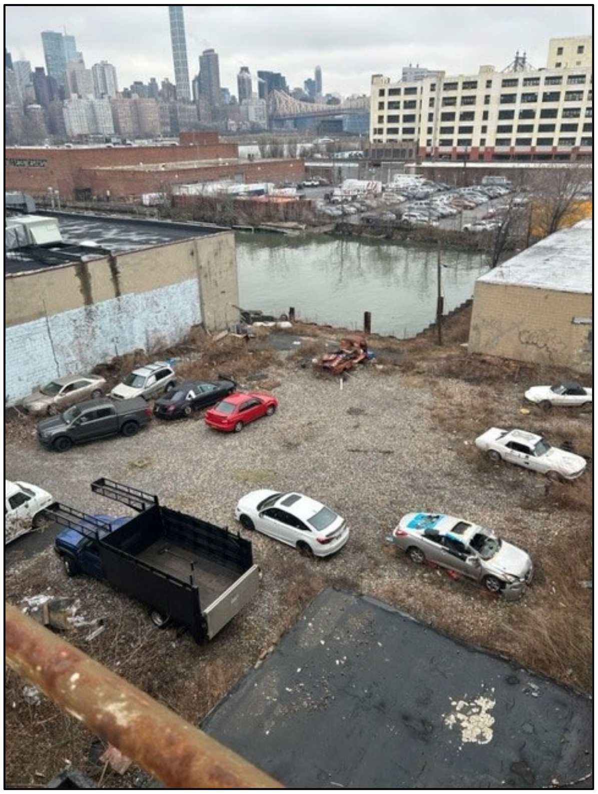


Photograph 3: Condition of paint factory and garage looking east

Photograph 4: Condition of warehouse and garage looking south



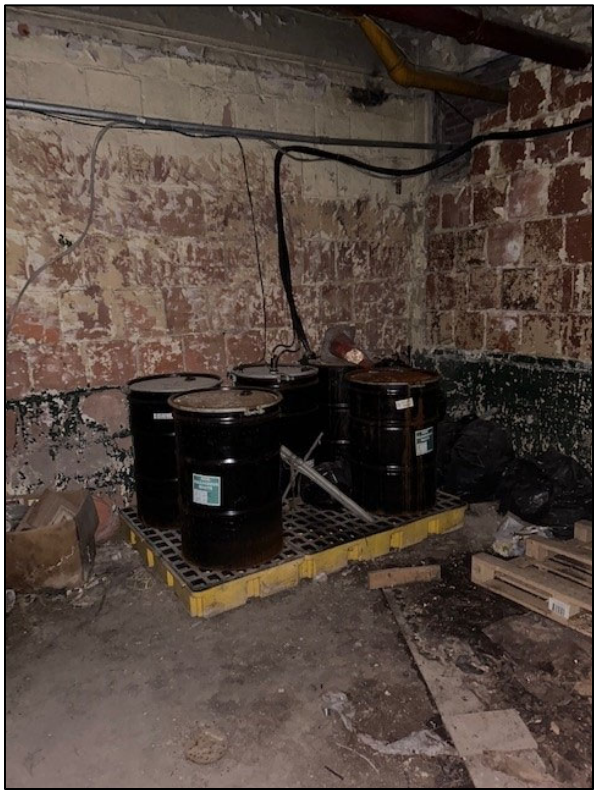
Photograph 5: Condition of courtyard looking northwest



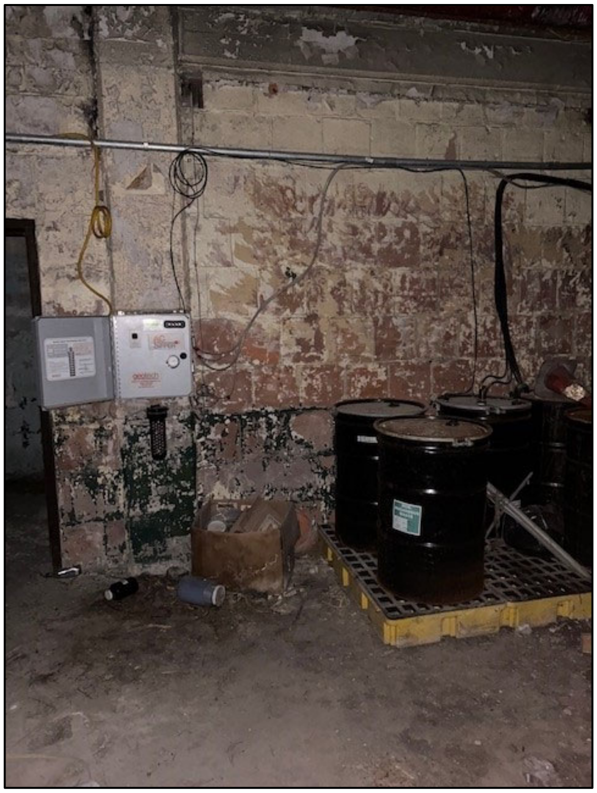
Photograph 6: Condition of courtyard looking north

Photograph 7: View of Anable Basin and condition of bulkhead looking west

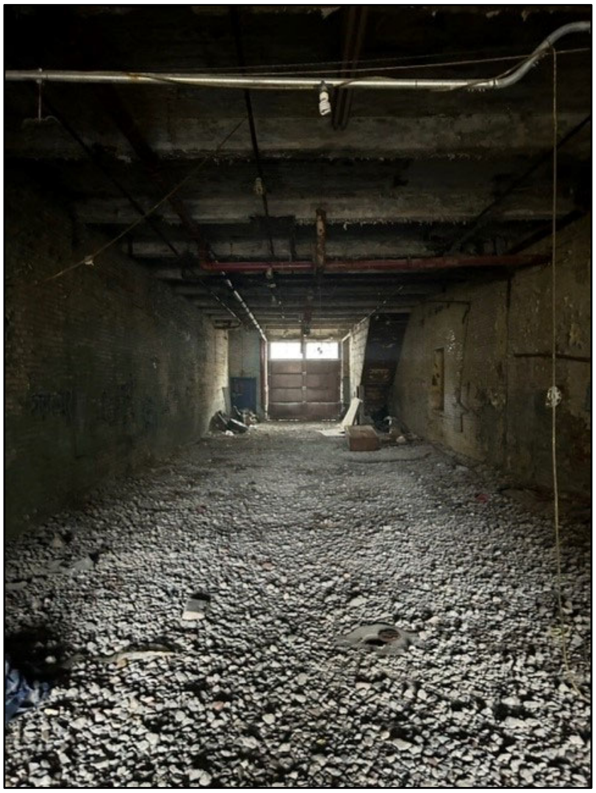
Photograph 8: View of Anable Basin and condition of bulkhead looking north



Photograph 9: Designated drum storage area with secondary containment pad



Photograph 10: Geotech AC Sipper control panel



Photograph 11: Condition of warehouse garage

Photograph 12: Condition of warehouse basement

APPENDIX C

Groundwater Monitoring Results

Notes Utilized Throughout Tables

Groundwater Tables

J -	Estimated Value
U -	Compound was analyzed for but not detected
J+ -	Estimated value, high bias
UJ -	Analyte was not detected. The associated reported quantitation limit is an estimate
R -	Sample results rejected by validator
ND -	No detections
EMPC -	The results do not meet all criteria for a confirmed identification. The quantitative value represents the Estimated Maximum Possible Concentration of the analyte in the sample
FD -	Duplicate
µg/L -	Micrograms per liter
ng/L -	Nanogram per liter
NYSDEC -	New York State Department of Environmental Conservation
AWQSGVs -	Ambient Water-Quality Standards and Guidance Values
--	No NYSDEC AWQSGV available

Bold data indicates that parameter was detected above the NYSDEC AWQSGVs

Appendix C.1. Summary of Volatile Organic Compounds in Groundwater, 46th Avenue Vernon Boulevard, Long Island City, New York

Sample Designation:			**MW-2R**	**MW-3**	**MW-4**	**MW-10**	**MW-11**	**MW-21**	**MW-33**	**MW-34**
Sample Date:			**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**
Normal or Field Duplicate:			**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Parameter	NYSDEC Ambient Water Quality Standards and Guidance	Units								
1,1,1-Trichloroethane (TCA)	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
1,1,2,2-Tetrachloroethane	5	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
1,1,2-Trichloroethane	1	UG/L	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	7.5 U
1,1-Dichloroethane	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
1,1-Dichloroethene	5	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U
1,2,3-Trichlorobenzene	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
1,2,4-Trichlorobenzene	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
1,2-Dibromo-3-Chloropropane	0.04	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
1,2-Dibromoethane (Ethylene Dibromide)	0.0006	UG/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	10 U
1,2-Dichlorobenzene	3	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
1,2-Dichloroethane	0.6	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U
1,2-Dichloropropane	1	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U
1,3,5-Trimethylbenzene (Mesitylene)	**5**	UG/L	**13 J+**	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	**34 J+**	12 U
1,3-Dichlorobenzene	3	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
1,4-Dichlorobenzene	3	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
1,4-Dioxane (P-Dioxane)	0.35	UG/L	250 R	250 R	250 R	250 R	250 R	250 R	250 R	1200 R
2-Hexanone	50	UG/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U
Acetone	50	UG/L	28 J+	8.9	5 U	5 U	5 U	3.5 J	50 J+	11 J
Benzene	**1**	UG/L	0.8 J+	**1.5**	0.5 U	0.5 U	0.5 U	0.5 U	**3.9 J+**	2.5 U
Bromochloromethane	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
Bromodichloromethane	50	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U
Bromoform	50	UG/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	10 U
Bromomethane	5	UG/L	2.5 U	1 J	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
Carbon Disulfide	60	UG/L	5 U	1.2 J	5 U	5 U	5 U	5 U	5 U	25 U
Carbon Tetrachloride	5	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U
Chlorobenzene	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
Chloroethane	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
Chloroform	7	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
Chloromethane	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
Cis-1,2-Dichloroethylene	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
Cis-1,3-Dichloropropene	--	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U
Dibromochloromethane	50	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U
Dichlorodifluoromethane	5	UG/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	25 U

Appendix C.1. Summary of Volatile Organic Compounds in Groundwater, 46th Avenue Vernon Boulevard, Long Island City, New York

		Sample Designation:	**MW-2R**	**MW-3**	**MW-4**	**MW-10**	**MW-11**	**MW-21**	**MW-33**	**MW-34**
		Sample Date:	**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**
		Normal or Field Duplicate:	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Parameter	NYSDEC Ambient Water Quality Standards and Guidance	Units								
Dichloroethylenes	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
Ethylbenzene	**5**	UG/L	1.7 J+	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	**41 J+**	12 U
Isopropylbenzene (Cumene)	**5**	UG/L	**13 J+**	**28**	2.5 U	2.5 U	2.5 U	2.5 U	**53 J+**	**18**
m,p-Xylene	**5**	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	4.9 J+	12 U
Methyl Ethyl Ketone (2-Butanone)	50	UG/L	4.7 J+	3 J	5 U	5 U	5 U	5 U	15 J+	25 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	--	UG/L	3.7 J+	5 U	5 U	5 U	5 U	5 U	5 U	25 U
Methylene Chloride	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
N-Propylbenzene	**5**	UG/L	**17 J+**	**33**	2.5 U	2.5 U	2.5 U	2.5 U	**93 J+**	**26**
O-Xylene (1,2-Dimethylbenzene)	**5**	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.3 J+	12 U
Sec-Butylbenzene	**5**	UG/L	**9.8 J+**	**11**	1.5 J	2.5 U	2.5 U	2.5 U	**35 J+**	**17**
Styrene	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
T-Butylbenzene	**5**	UG/L	3.3 J+	3.1	**7.2**	2.5 U	1 J	2.5 U	**10 J+**	**7.9 J**
Tert-Butyl Methyl Ether	10	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
Tetrachloroethylene (PCE)	5	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U
Toluene	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
Total, 1,3-Dichloropropene (Cis And Trans)	0.4	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U
Trans-1,2-Dichloroethene	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
Trans-1,3-Dichloropropene	--	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U
Trichloroethylene (TCE)	5	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 J	0.5 U	2.5 U
Trichlorofluoromethane	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	12 U
Vinyl Chloride	2	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U
Xylenes	**5**	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	**7.2 J+**	12 U
Total TIC, Volatile	--	UG/L	273 J	256 J	49.4 J	ND	2.44 J	23.4 J	603 J	494 J

Appendix C.1. Summary of Volatile Organic Compounds in Groundwater, 46th Avenue Vernon Boulevard, Long Island City, New York

		Sample Designation:	**MW-40**	**MW-41**	**MW-42**	**MW-44**	**MW-46**	**MW-48**	**MW-48**
		Sample Date:	**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**
		Normal or Field Duplicate:	**N**	**N**	**N**	**N**	**N**	**N**	**FD**
Parameter	NYSDEC Ambient Water Quality Standards and Guidance	Units							
1,1,1-Trichloroethane (TCA)	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,1,2,2-Tetrachloroethane	5	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,1,2-Trichloroethane	1	UG/L	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
1,1-Dichloroethane	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,1-Dichloroethene	5	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2,4-Trichlorobenzene	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dibromo-3-Chloropropane	0.04	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dibromoethane (Ethylene Dibromide)	0.0006	UG/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene	3	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dichloroethane	0.6	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	1	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene (Mesitylene)	**5**	UG/L	2.5 U	3.5	**6.1**	**58**	2.5 U	2.5 U	2.5 U
1,3-Dichlorobenzene	3	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,4-Dichlorobenzene	3	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,4-Dioxane (P-Dioxane)	0.35	UG/L	250 R	250 R	250 R	250 R	250 R	250 R	250 R
2-Hexanone	50	UG/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50	UG/L	5 U	5 U	2.2 J	17	2.7 J+	5 U	5 U
Benzene	**1**	UG/L	**4.1**	0.5 U	0.16 J	0.51	0.5 U	0.5 U	0.5 U
Bromochloromethane	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Bromodichloromethane	50	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	50	UG/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromomethane	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Carbon Disulfide	60	UG/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	5	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Chloroethane	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Chloroform	7	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Chloromethane	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Cis-1,2-Dichloroethylene	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Cis-1,3-Dichloropropene	--	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	50	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	5	UG/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U

Appendix C.1. Summary of Volatile Organic Compounds in Groundwater, 46th Avenue Vernon Boulevard, Long Island City, New York

Sample Designation:			**MW-40**	**MW-41**	**MW-42**	**MW-44**	**MW-46**	**MW-48**	**MW-48**
Sample Date:			**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**
Normal or Field Duplicate:			**N**	**N**	**N**	**N**	**N**	**N**	**FD**
Parameter	NYSDEC Ambient Water Quality Standards and Guidance	Units							
Dichloroethylenes	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Ethylbenzene	**5**	UG/L	2.5 U	2.5 U	0.76 J	**6.6**	2.5 U	2.5 U	2.5 U
Isopropylbenzene (Cumene)	**5**	UG/L	**6.2**	0.83 J	1.8 J	**13**	2.5 U	**6.7 J**	2.7 J
m,p-Xylene	**5**	UG/L	2.5 U	2.5 U	2 J	**19**	2.5 U	2.5 U	2.5 U
Methyl Ethyl Ketone (2-Butanone)	50	UG/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	--	UG/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methylene Chloride	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
N-Propylbenzene	**5**	UG/L	2.5 U	1.6 J	3.2	**17**	2.5 U	4.2 J	1.5 J
O-Xylene (1,2-Dimethylbenzene)	**5**	UG/L	2.5 U	2.5 U	2.5 U	**9.5**	2.5 U	2.5 U	2.5 U
Sec-Butylbenzene	**5**	UG/L	2.7	1.5 J	2.8	**5.9**	2.5 U	**5.5 J**	2.8 J
Styrene	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
T-Butylbenzene	**5**	UG/L	2.9	2.5 U	1 J	2 J	2.5 U	**6.7**	**5.5**
Tert-Butyl Methyl Ether	10	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Tetrachloroethylene (PCE)	5	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	5	UG/L	2.5 U	2.5 U	2.5 U	1.8 J	2.5 U	2.5 U	2.5 U
Total, 1,3-Dichloropropene (Cis And Trans)	0.4	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trans-1,2-Dichloroethene	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Trans-1,3-Dichloropropene	--	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	5	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichlorofluoromethane	5	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Vinyl Chloride	2	UG/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes	**5**	UG/L	2.5 U	2.5 U	2 J	**29**	2.5 U	2.5 U	2.5 U
Total TIC, Volatile	--	UG/L	46.1 J	68.2 J	176 J	237 J	ND	71.9 J	43.6 J

Appendix C.2. Summary of Perfluorinated Alkyl Acids and Dioxane in Groundwater, 46th Avenue Vernon Boulevard, Long Island City, New York

Sample Designation:			**MW-2R**	**MW-40**	**MW-46**	**MW-48**	**MW-48**
Sample Date:			**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**	**08/18/2022**
Normal or Field Duplicate:			**N**	**N**	**N**	**N**	**FD**
Parameter	NYSDEC Ambient Water Quality Guidance Values	Units					
1,4-Dioxane (P-Dioxane)	350	NG/L	157 U	31.4 U	31.4 U	32.6 U	31.4 U
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	NG/L	0.616 U	0.612 U	2.19	0.578 U	0.571 U
N-ethyl perfluorooctanesulfonamidoacetic acid	--	NG/L	0.765 U	0.759 U	2.81	0.718 U	0.708 U
Perfluorobutanesulfonic acid (PFBS)	--	NG/L	0.226 U	6.84 J	2.15	4.31	4.07
Perfluorobutanoic Acid	--	NG/L	0.388 UJ	33.6	3.15	11.6	10.9
Perfluorodecane Sulfonic Acid	--	NG/L	0.932 U	0.925 U	0.913 U	0.875 U	0.863 U
Perfluorodecanoic acid (PFDA)	--	NG/L	0.639 EMPC	2.24	0.868 J	0.582 EMPC	0.571 EMPC
Perfluorododecanoic acid (PFDoA)	--	NG/L	0.354 U	0.351 U	0.347 U	0.332 U	0.328 U
Perfluoroheptane Sulfonate (PFHPS)	--	NG/L	0.654 U	1.8 J	0.641 U	0.614 U	0.606 U
Perfluoroheptanoic acid (PFHpA)	--	NG/L	0.214 UJ	12.9	2.86	12.2	11.2
Perfluorohexanesulfonic acid (PFHxS)	--	NG/L	3.6	37.8 EMPC	2.25	7.64	6.89
Perfluorohexanoic acid (PFHxA)	--	NG/L	0.312 UJ	20 J	4.84	19.8	18.4
Perfluorononanoic acid (PFNA)	--	NG/L	9.7 J	5.52	1.88 EMPC	1.49 J	1.32 J
Perfluorooctane Sulfonamide (FOSA)	--	NG/L	0.552 U	0.548 U	0.54 U	0.518 U	0.511 U
Perfluorooctanesulfonic acid (PFOS)	**2.7**	NG/L	**9.53**	**97.3**	**8.4**	2.57	**3.15**
Perfluorooctanoic acid (PFOA)	**6.7**	NG/L	**30.4**	**42.1**	**8.64**	**16**	**16.4**
Perfluoropentanoic Acid (PFPeA)	--	NG/L	0.377 UJ	23.5 J	5.13	21.2	20.4
Perfluorotetradecanoic acid (PFTA)	--	NG/L	0.236 U	0.234 U	0.246 EMPC	0.221 U	0.218 U
Perfluorotridecanoic Acid (PFTriA)	--	NG/L	0.311 U	0.309 U	0.305 U	0.292 U	0.288 U
Perfluoroundecanoic Acid (PFUnA)	--	NG/L	0.274 EMPC	0.245 U	0.291 J	0.232 U	0.229 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	NG/L	1.15 U	1.14 U	1.13 U	1.08 U	1.07 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	NG/L	2.18 J	20.1 J	6.53 J	1.56 J	4.63 EMPC
TOTAL PFOA AND PFOS	--	NG/L	39.9	139	17	18.6	19.6

APPENDIX D

LNAPL Recovery System Monitoring Logs

Appendix D. LNAPL Recovery System Monitoring Log Former Paragon Paint Varnish Corp - February 21, 2023
5-43 to 5-49 46th Ave. and 45-38 to 45-40 Vernon Blvd.
Long Island City, New York, NYSDEC Site No. C241108

Source of Reading	Value	Unit			Comments
Recovery Well Network -Presence of Product	Product Present?	DTP	DTW	FTP	
Recovery Well RW-1	N	--	8.79	--	
Recovery Well RW-2	N	--	9.23	--	
Recovery Well RW-3	N	--	9.62	--	
Recovery Well RW-4	N	--	10.01	--	
Recovery Well RW-5	N	--	10.45	--	
Product Volume in Recovery Drum					
0-55 gallons in Recovery Drum			3.3 Gallons		

Is the system operating within the acceptable conditions? N/A

If no, was the condition corrected and how?

LNAPL Recovery system has been shut off since March 30, 2017. The system was shut off effective January 12, 2018, however the system will remain in-place in the event that future monitoring events detect LNAPL.

Form Completed By:

Michael Sarni

APPENDIX E

NYSDEC Site Management Plan Approval

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 2
47-40 21st Street, Long Island City, NY 11101
P: (718) 482-4995
www.dec.ny.gov

December 7, 2016

Mr. Brent Carrier
4540 Vernon Realty LLC
45 Carleon Ave
Larchmont NY 10538

RE Paragon Paint and Varnish Corp.
5-49 46th Avenue, Long Island City, NY
Brownfield Cleanup Program, Site ID C241108, Queens County
Site Management Plan

Dear Ms. Carrier:

The New York State Department of Environmental Conservation has reviewed the Site Management Plan (SMP) dated November 2016, for the referenced site, NYSDEC BCP Site No. C241108, NYSDEC BCA Index No. W2-1119-08-03, prepared by Remedial Engineering P.C. on behalf of 4540 Vernon Realty LLC.

This SMP was prepared as a requirement of the New York State Brownfield Cleanup Program. The SMP contains a comprehensive plan that provides detailed maintenance and monitoring discussions of the Institutional and Engineering Controls developed for the site, as well as provisions for the annual certification of these controls. The SMP is hereby approved.

The approved SMP must be placed in all publicly accessible repositories for the Site within five business days. A certification that this document has been placed, and that the repositories are complete with all project documents, must be submitted to the NYSDEC project manager.

If you have any questions or comments, please feel free to contact me at (718) 482-4891.

Sincerely,

Sondra Martinkat
Environmental Engineer

ec: Jane O’Connell, Karen Mintzer – NYSDEC
Justin Deming, Anthony Perretta – NYSDOH
Michael Bogin – Sive Paget Riesel
Omar Ramotar – Remedial Engineering, P.C.

cc: Angela Krevey – Anable Beach Inc
Donald Rattner – 549 46th Ave LLC

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 2
47-40 21st Street, Long Island City, NY 11101
P: (718) 482-4995
www.dec.ny.gov

December 2, 2022

Amir Setayesh
CSC 4540 Property co, LLC
c/o Quadrum Global
261 Fifth Ave., Suite 1801
New York, NY 10016

Re: Site Management (SM) Periodic Review Report (PRR) Response Letter
Paragon Paint and Varnish Corp, Long Island City
Queens County, Site No.: C241108

Dear Mr. Setayesh:

The Department has reviewed your Periodic Review Report (PRR) and IC/EC Certification for following period: April 15, 2021 to April 15, 2022.

The Department hereby accepts the PRR and associated Certification. The frequency of Periodic Reviews for this site is 1 year, and your next PRR is due on May 15, 2023. A reminder Letter will be sent out on or about March 1, 2023. Your next PRR cycle is April 15, 2022 to April 15, 2023.

To the revised Site Management Plan (SMP), received on 4/1/2021, please also add “plus TICs” to EPA TO-15 in Section 4.6 Soil Vapor Intrusion Monitoring. Please resubmit the updated SMP by January 6, 2023.

If you have any questions, or need additional forms, please contact me at 718-482-4891 or e-mail: sondra.martinkat@dec.ny.gov.

Sincerely,

Sondra Martinkat

Sondra Martinkat
Project Manager

ec : Jane O’Connell, Cris-Sandra Maycock – NYSDEC
Scarlett McLaughlin, Anthony Perretta – NYSDOH
Matthew Baron, A. Till – CSC 4540 Property Co, LLC, c/o Simon Dev
Omar Ramotar, Christian Hoelzli – Roux Associates

APPENDIX F

NYSDEC Response Letter to SMP Modifications

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 2
47-40 21st Street, Long Island City, NY 11101
P: (718) 482-4995
www.dec.ny.gov

January 12, 2018

Robert Hendrickson
Quadrum Global
757 3rd Avenue
New York NY 10017

Re: Paragon Paint and Varnish Company
Queens County, BCP # C241108
Modifications to the Site Management Plan (SMP)

Dear Mr. Hendrickson:

On December 1, 2017, the New York State Department of Environmental Conservation (the Department) met with Quadrum Global and Roux Associates to review the project. As a follow-up to that discussion, Roux Associates provided an email on January 9, 2018 which included a summary of proposed changes regarding monitoring, sampling, operation, maintenance and reporting activities. These proposed changes constitute modifications to the Site Management Plan (SMP).

The following SMP modifications are approved:

1. All Site monitoring wells will be gauged for the presence of light non-aqueous phase liquid (LNAPL) on a quarterly basis in lieu of gauging select wells on a monthly basis. The first quarterly gauging event will occur in March 2018.

2. Monthly progress reports are no longer required. A quarterly report will be submitted that details the performance of gauging or sampling events performed at the Site.

3. The groundwater sampling frequency may be reduced to annual, with the next sampling event in June 2018.

4. A formal groundwater monitoring report will be replaced with a tabular summary of groundwater data and a short evaluation of conditions when data is generated. This may be applied to the recent groundwater sampling event performed at the Site in December 2017. The results should be discussed in greater detail in the subsequent Periodic Review Report (PRR). The first PRR for the Site is due April 15, 2018.

5. Since no LNAPL has been recovered by the on-site system in the past year, the LNAPL recovery system may be shut down. The system should remain in-place in the event that future monitoring events identify recoverable LNAPL. The system may be decommissioned when the Site is redeveloped. LNAPL recovery will continue manually with bailers and/or oil absorbing socks/pads on a quarterly basis, as needed.

Within 30 days of the date of this letter, please submit revised sections of the SMP for the approvals listed above. Upon approval of these sections, a revised SMP must be submitted to the Department.

If you have any questions or would like to schedule a meeting to discuss this letter, please contact me at (718) 482-4891 or sondra.martinkat@dec.ny.gov.

Sincerely,

Sondra Martinkat
Project Manager

ec: Jane O'Connell, Gerard Burke, Karen Mintzer – NYSDEC
Anthony Perretta – NYSDOH
Matthew Baron – CSC Realty LLC
Omar Ramotar – Roux Associates/Remedial Engineering PC
Larry Schnapf – Schnapf Law
Brent Carrier – Vernon 4540 Realty LLC

cc: Angela Krevey – Anabel Beach, Inc.
Donald Rattner – 549 46th Ave LLC

APPENDIX G

Formal Groundwater Monitoring Report and NYSDEC Correspondence

---

From: Christian Hoelzli
Sent: Thursday, December 8, 2022 8:59 AM
To: Martinkat, Sondra (DEC)
Cc: O'Connell, Jane H (DEC); Robert Hendrickson; Amir Setayesh; Jared White; Larry Schnapf; Jennifer Coghlan; Omar Ramotar
Subject: C241109 Paragon Paint 3Q22 Quarterly Update
Attachments: Table 1.xlsx; Tables 2-3.xlsx; Attachment 1. DUSR Paragon Paint and Varnish.pdf; Figure 1.pdf

Sondra,

In accordance with the Brownfield Cleanup Agreement, Roux Environmental Engineering and Geology, D.P.C. (Roux) has prepared this email to serve as a quarterly update for the former Paragon Paint and Varnish Corp. facility located at 5-43 to 5-49 46th Avenue and 45-38 to 45-40 Vernon Boulevard in Long Island City, New York (Site) (NYSDEC Site No C241108).

Routine Operation, Maintenance, and Reporting Activities:

Roux completed the quarterly gauging of the 29 monitoring wells and 5 recovery wells to determine the presence of LNAPL in accordance with the revised SMP on August 18, 2022. A summary of the gauging data collected during the reporting period is provided in Table 1 attached.

During the gauging event, no free-product was present in on-site monitoring wells. The well locations are provided in Figure 1. Absorbent socks were removed and replaced in MW-2R, MW-17, MW-19, MW-33, and MW-34 with approximately 1 gallon of free-product absorbed in total based on the saturation of the sock absorbency. The recovered product and saturated absorbent socks are temporarily stored on-Site in a 55-gallon drum until it is required to be disposed. These monitoring wells will continue to be gauged and monitored, with manual bailing and absorbent sock replacement implemented as necessary.

Due to the lack of free-product in the recovery wells (RW-1 to RW-5), Roux has continued to pause the operation of the LNAPL recovery system until recoverable levels of product become present in the recovery system wells.

Sampling/Sample Results

During this reporting period, 14 groundwater samples were collected from the following monitoring wells:

- MW-2R
- MW-3
- MW-4
- MW-10
- MW-11
- MW-21
- MW-33
- MW-34
- MW-40
- MW-41
- MW-42
- MW-44
- MW-46
- MW-48

The above samples were analyzed for VOCs using USEPA Method 8260.

Additionally, 4 groundwater samples were collected to analyze for 1,4-dioxane and per- and poly- fluoroalkyl substances (PFAS) using USEPA Method 8270D and USEPA Method 537, respectively, in support of a mandatory State-wide evaluation. The samples were taken from MW-2R, MW-40, MW-46, and MW-48.

Groundwater Monitoring Results

The VOC analytical results of the August 2022 annual groundwater monitoring event are summarized in Table 2 and the well locations are presented in Figure 1. A review of the groundwater data generated during this reporting period indicated the following:

- The specific COC exceedances of AWQSGVs are noted below:

    - Benzene results exceeded their respective AWQSGV of 1 µg/L at three (3) monitoring well locations (1.5 µg/L at MW-3, 3.9 µg/L at MW-33, and 4.1 µg/L at MW-40).
    - Ethylbenzene results exceeded their respective AWQSGV of 5µg/L at two (2) monitoring well locations (41 µg/L at MW-33 and 6.6 µg/L at MW-44).
    - Isopropylbenzene results exceeded their respective AWQSGV of 5 µg/L at seven (7) monitoring well locations (13 µg/L at MW-2R, 28 µg/L at MW-3, 53 µg/L at MW-33, 18 µg/L at MW-34, 6.2 µg/L at MW-40, 13 µg/L at MW-44, and 6.7 µg/L at MW-48).
    - Xylene results exceeded their respective AWQSGV of 5 µg/L at two (2) monitoring well locations (7.2 µg/L at MW-33 and 29 µg/L at MW-44).

The groundwater data for the recent August 2022 sampling event is relatively consistent to previous sampling rounds. As discussed in the Periodic Review Report approved on June 21, 2021, groundwater sampling will continue to be performed on an annual basis until site redevelopment plans are finalized.

MW-47 was not sampled due to the presence of LNAPL during purging. MW-7, MW-19, MW-37, MW-38 and MW-45 were not sampled due to the wells being dry. MW-43 was not sampled because it was inaccessible.

In a letter dated March 4, 2021, the NYSDEC requested the annual sampling be modified to include Tentatively Identified Compounds (TICs) in the VOC analysis. The concentration of Total TICs is included in Table 2.

The letter also requested emerging contaminants (ECs) 1,4-dioxane and PFAS be sampled from MW-33, MW-37 or MW-38, MW-46, and MW-48. Since MW-33, MW-37 and MW-38 were dry, the next closest wells were selected to sample for emerging contaminants. MW-2R was sampled in place of MW-33 and MW-40 was sampled in place of MW-37 and MW-38. The analytical results of the 1,4-dioxane and PFAS sampling are summarized in Table 3.

The full data set was uploaded as EDD 20221025 1547.C241108.NYSDEC and is currently available for use within the NYSDEC system. The Data Usability Summary Report (DUSR) for these samples is provided in Attachment 1.

Planned Actions:

The following activities are scheduled for the next reporting period.

- Continued quarterly gauging of monitoring wells within the SMP monitoring network;
- Continued monthly O&M of LNAPL recovery system (as necessary).

Work Plan Modifications

No modifications made to the Work Plan during this reporting period.

Please contact me or Omar Ramotar with any questions or concerns.

Thank you,

Christian Hoelzli | Project Engineer
209 Shafter Street, Islandia, New York 11749
Main: 631.232.2600 | Direct: 631.630.2477 | Mobile: 516.589.4604
Email: choelzli@rouxinc.com | Website: www.rouxinc.com

ROUX

California | Illinois | Massachusetts | New Jersey | New York | Texas | Virginia

From: Christian Hoelzli
Sent: Monday, February 20, 2023 9:35 AM
To: Martinkat, Sondra (DEC)
Cc: Maycock, Cris-Sandra (DEC); Omar Ramotar; O'Connell, Jane H (DEC); Robert Hendrickson; Amir Setayesh; 'Jared White'; Larry Schnapf; Jennifer Coghlan
Subject: C241109 Paragon Paint 4Q22 Quarterly Update
Attachments: Table 1.xlsx; Figure 1.pdf

Sondra,

In accordance with the Brownfield Cleanup Agreement, Roux Environmental Engineering and Geology, D.P.C. (Roux) has prepared this email to serve as a quarterly update for the former Paragon Paint and Varnish Corp. facility located at 5-43 to 5-49 46th Avenue and 45-38 to 45-40 Vernon Boulevard in Long Island City, New York (Site) (NYSDEC Site No C241108).

Routine Operation, Maintenance, and Reporting Activities:

Roux completed the quarterly gauging of the 29 monitoring wells and 5 recovery wells to determine the presence of LNAPL in accordance with the revised SMP on November 10, 2022. A summary of the gauging data collected during the reporting period is provided in Table 1 attached.

During the gauging event, free-product was present in on-site monitoring wells MW-2R, MW-33, and MW-34. Absorbent socks were removed and replaced in all three wells with approximately 1 gallon of free product absorbed in total based on the saturation of the socks. The well locations and LNAPL thicknesses are provided in Figure 1. The recovered product and saturated absorbent socks are temporarily stored on-Site in a 55-gallon drum until it is required to be disposed. These monitoring wells will continue to be gauged and monitored, with manual bailing and absorbent sock replacement implemented as necessary.

Due to the lack of free-product in the recovery wells (RW-1 to RW-5), Roux has continued to pause the operation of the LNAPL recovery system until recoverable levels of product become present in the recovery system wells.

Planned Actions:

The following activities are scheduled for the next reporting period.

- Continued quarterly gauging of monitoring wells within the SMP monitoring network; and
- Continued monthly O&M of LNAPL recovery system (as necessary).

Work Plan Modifications

No modifications made to the Work Plan during this reporting period.

Please contact me or Omar Ramotar with any questions or concerns.

Thank you,

Christian Hoelzli | Project Engineer
209 Shafter Street, Islandia, New York 11749
Main: 631.232.2600 | Direct: 631.630.2477 | Mobile: 516.589.4604
Email: choelzli@rouxinc.com | Website: www.rouxinc.com

ROUX

California | Illinois | Massachusetts | New Jersey | New York | Texas | Virginia

From: Christian Hoelzli
Sent: Wednesday, April 26, 2023 4:09 PM
To: Martinkat, Sondra (DEC)
Cc: Maycock, Cris-Sandra (DEC); Omar Ramotar; O'Connell, Jane H (DEC); Robert Hendrickson; Amir Setayesh; 'Jared White'; Larry Schnapf; Jennifer Coghlan
Subject: C241109 Paragon Paint 1Q23 Quarterly Update
Attachments: Table 1.xlsx; 2051.0001Y166.01-FIGURE 1.pdf

Sondra,

In accordance with the Brownfield Cleanup Agreement, Roux Environmental Engineering and Geology, D.P.C. (Roux) has prepared this email to serve as a quarterly update for the former Paragon Paint and Varnish Corp. facility located at 5-43 to 5-49 46th Avenue and 45-38 to 45-40 Vernon Boulevard in Long Island City, New York (Site) (NYSDEC Site No C241108).

Routine Operation, Maintenance, and Reporting Activities:
Roux completed the quarterly gauging of the 29 monitoring wells and 5 recovery wells to determine the presence of LNAPL in accordance with the revised SMP on February 21, 2023. A summary of the gauging data collected during the reporting period is provided in Table 1 attached.

During the gauging event, free-product was present in on-site monitoring wells MW-2R, MW-3, and MW-33. Absorbent socks were removed and replaced in all three wells with approximately 1 gallon of free product absorbed in total based on the saturation of the socks. The well locations and LNAPL thicknesses are provided in Figure 1. The recovered product and saturated absorbent socks are temporarily stored on-Site in a 55-gallon drum until it is required to be disposed. These monitoring wells will continue to be gauged and monitored, with manual bailing and absorbent sock replacement implemented as necessary.

Due to the lack of free-product in the recovery wells (RW-1 to RW-5), Roux has continued to pause the operation of the LNAPL recovery system until recoverable levels of product become present in the recovery system wells.

Planned Actions:
The following activities are scheduled for the next reporting period.

- Continued quarterly gauging of monitoring wells within the SMP monitoring network; and
- Continued monthly O&M of LNAPL recovery system (as necessary).

Work Plan Modifications
No modifications made to the Work Plan during this reporting period.

Please contact me or Omar Ramotar with any questions or concerns.

Thank you,
Christian

Christian Hoelzli | Project Engineer
209 Shafter Street, Islandia, New York 11749
Main: 631.232.2600 | Direct: 631.630.2477 | Mobile: 516.589.4604
Email: choelzli@rouxinc.com | Website: www.rouxinc.com

California | Illinois | Massachusetts | New Jersey | New York | Texas | Virginia

From: Christian Hoelzli
Sent: Friday, July 1, 2022 1:40 PM
To: O'Connell, Jane H (DEC)
Cc: Martinkat, Sondra (DEC); Robert Hendrickson; Amir Setayesh; 'Jared White'; Larry Schnapf; Jennifer Coghlan; Omar Ramotar
Subject: C241108 Paragon Paint 2Q22 Quarterly Update
Attachments: Table 1.xlsx; Figure 1.pdf

Jane,

In accordance with the Brownfield Cleanup Agreement, Roux Environmental Engineering and Geology, D.P.C. (Roux) has prepared this email to serve as a quarterly update for the former Paragon Paint and Varnish Corp. facility located at 5-43 to 5-49 46th Avenue and 45-38 to 45-40 Vernon Boulevard in Long Island City, New York (Site) (NYSDEC Site No C241108).

Routine Operation, Maintenance, and Reporting Activities:

Roux completed the quarterly gauging of the 29 monitoring wells and 5 recovery wells to determine the presence of LNAPL in accordance with the revised SMP on May 12, 2022. A summary of the gauging data collected during the reporting period is provided in Table 1 attached.

During the gauging event, free-product was present in on-site monitoring wells MW-3 and MW-33. The well locations and LNAPL thicknesses are provided in Figure 1. Absorbent socks were installed in MW-3 and MW-33. The recovered product and saturated absorbent socks are temporarily stored on-Site in a 55-gallon drum until it is required to be disposed. These monitoring wells will continue to be gauged and monitored, with manual bailing and absorbent sock replacement implemented as necessary.

Due to the lack of free-product in the recovery wells (RW-1 to RW-5), Roux has continued to pause the operation of the LNAPL recovery system until recoverable levels of product become present in the recovery system wells.

Planned Actions:

The following activities are scheduled for the next reporting period.

- Continued quarterly gauging of monitoring wells within the SMP monitoring network;
- Continued annual sampling of monitoring wells within the SMP monitoring network; and
- Continued monthly O&M of LNAPL recovery system (as necessary).

Work Plan Modifications

No modifications made to the Work Plan during this reporting period.

Please contact me or Omar Ramotar with any questions or concerns.

Thank you,

Christian Hoelzli | Project Engineer
209 Shafter Street, Islandia, New York 11749
Main: 631.232.2600 | Direct: 631.630.2477 | Mobile: 516.589.4604
Email: choelzli@rouxinc.com | Website: www.rouxinc.com

California | Illinois | Massachusetts | New Jersey | New York | Texas | Virginia

APPENDIX H

Revised Quality Assurance Project Plan

Quality Assurance Project Plan

Former Paragon Paint Manufacturing Facility
5-43 to 5-49 46th Avenue and
45-38 to 45-40 Vernon Boulevard
Long Island City, New York
Site No. C241108

April 3, 2021

Prepared for:

CSC 4540 Property Co, LLC
757 Third Avenue, 17th Floor,
New York, New York 10017

Prepared by:

Roux Environmental Engineering and Geology, D.P.C.
209 Shafter Street
Islandia, New York 11749

Environmental Consulting
& Management
+1.800.322.ROUX
rouxinc.com

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Appendices

1. Introduction

This Quality Assurance Project Plan (QAPP) has been prepared to describe the measures that will be taken to ensure that the data generated during performance of the Site Management Phase (SMP) at the property identified as the former Paragon Paint manufacturing facility located at 5-43 to 5-49 46th Avenue and 45-38 to 45-40 Vernon Boulevard, in Long Island City (Site) are of sufficient quality to meet project-specific data quality objectives (DQOs). The QAPP was prepared in accordance with the guidance provided in New York State Department of Environmental Conservation (NYSDEC) Technical Guidance DER-10 (Technical Guidance for Site Investigation and Remediation), the Brownfield Cleanup Program Guide and the United States Environmental Protection Agency's (USEPA's) Guidance for the Data Quality Objectives Process (EPA QA/G-4).

2. Project Objectives and Scope

As described in the SMP, the objectives are to manage the residual contamination and monitor the extent of light non-aqueous phase liquid (LNAPL) and volatile organic compound (VOC) impacts in groundwater. In order to achieve project objectives, Roux Environmental Engineering and Geology (Roux) has developed a scope of work for the sampling of groundwater. A brief overview of the work is provided below. SMP sampling locations are shown in Figure 1.

2.1 Groundwater

There are currently 30 monitoring wells at the Site. All monitoring wells will be gauged using an electronic interface probe capable of detecting light non-aqueous phase liquid (LNAPL) with an accuracy of +/- 0.01 feet.

Of the 30 monitoring wells, 21 are part of the SMP monitoring network. Figure 1 includes a map showing the locations and designations of all monitoring wells at the Site. Groundwater samples will be collected from those wells that do not exhibit any LNAPL at the time of gauging.

Samples will be analyzed for TCL VOCs plus Tentatively Identified Compounds (TICs) (USEPA Method 8260). Field parameters, including temperature, pH, conductivity, redox potential, dissolved oxygen, and turbidity will also be measured.

In addition, a request was made by the NYSDEC on March 4, 2021 to analyze groundwater at the Site for emerging contaminants (ECs) 1,4-dioxane and per- and poly-fluoroalkyl substances (PFAS) in support of a mandatory State-wide evaluation. Four (4) monitoring wells within the existing SMP monitoring network will be analyzed for ECs, with one well selected for analysis at the following representative locations across the Site:

- Driveway (MW-33 or MW-2)
- Warehouse (MW-37 or MW-38)
- Courtyard (MW-46 or MW-44) and
- Paint factory (MW-48 or MW-4).

Samples will be analyzed for 1,4-dioxane using USEPA Method 8270 SIM and PFAS (NYSDEC 21-compound list) using USEPA Method 537 Modified in accordance with the NYSDEC PFAS sampling guidance dated January 2021.

3. Project Organization

The overall management structure and a general summary of the responsibilities of project team members are presented below. Professional profiles are included in Appendix A.

Project Manager
Omar Ramotar, P.E. of Roux Associates. will serve as Project Manager. The Project Manager is responsible for defining project objectives and bears ultimate responsibility for the successful completion of the investigation. This individual will provide overall management for the implementation of the scope of work and will coordinate all field activities. The Project Manager is also responsible for data review/interpretation and report preparation. Activities of the Project Manager are supported by the Project Quality Assurance Officer.

Field Team Leader
Christian Hoelzli of Roux Environmental Engineering and Geology, D.P.C. will serve as the Field Team Leader. The Field Team Leader bears the responsibility for the successful execution of the field program, as scoped in the SMP and the Field Sampling Plan (FSP). The Field Team Leader will direct the activities of all technical staff in the field as well all subcontractors. The Field Team Leader will also assist in the interpretation of data and in report preparation. The Field Team Leader reports to the Project Manager.

Laboratory Project Manager
The laboratory Project Manager is responsible for sample container preparation, sample custody in the laboratory, and completion of the required analysis through oversight of the laboratory staff. The Laboratory Project Manager will ensure that quality assurance procedures are followed and that an acceptable laboratory report is prepared and submitted. The Laboratory Project Manager reports to the Project Manager or the Field Team Leader.

Quality Assurance Officer
Wai Kwan, Ph.D., P.E. of Roux Associates will serve as the Quality Assurance Officer (QAO) for this project. The QAO is responsible for conducting reviews, inspections, and audits to ensure that the data collection is conducted in accordance with the FSP and QAPP. The QAO's responsibilities range from ensuring effective field equipment decontamination procedures and proper sample collection to the review of all laboratory analytical data for completeness and usefulness. The QAO reports to the Project Manager and makes independent recommendations to the Field Team Leader.

Field Technical Staff
Field technical staff consists of scientists, engineers, Geoprobe operators and technicians who will perform sampling activities. The field technical staff will also be responsible for the preparation of any required field documentation. The field technical staff reports to the Field Team Leader.

4. Sampling Procedures

To ensure groundwater samples collected are representative of the conditions in the surrounding aquifer, monitoring wells will be purged prior to sample collection using low flow sampling procedures as outlined in USEPA document titled “Low Stress (Low Flow) Purging and Sampling Procedures for the Collection of Groundwater Samples from Monitoring Wells” (USEPA, 1996).

Detailed discussions of sample handling, decontamination, and waste disposal procedures are provided in Sections 5.0, 6.1, and 6.2; respectively, of the site-specific Field Sampling Plan (FSP) in Appendix B of the Remedial Investigation Work Plan.

Samples collected for Perfluorooctanoic Acid (PFOA) and Perfluorinated Compounds (PFCs) from monitoring wells must follow the procedures noted above in addition to the following limitations:

- All acceptable materials for sampling include: stainless steel, high density polyethylene (HDPE), PVC, silicone, acetate, and polypropylene.
- Equipment blanks must be generated daily.
- Grundfos and bladder pumps may NOT be used; as Grundfos pumps contain Teflon washers and bladder pumps contain LDPE bladders.
- All sampling equipment components and sample containers should not come into contact with aluminum foil, low density polyethylene (LDPE), glass, or polytetrafluoroethylene (PTFE, Teflon) materials; including sample bottle cap liners.
- Samplers must avoid wearing clothing that contains PTFE material (including GORE-TEX) or waterproofed with PFC materials. All clothing worn by sampling personnel must be laundered multiple times before sampling.
- Many food and drink packaging materials contain PFCs. Food and drink should not be in the vicinity of samples.
- Waterproof adhesives like, “plumbers thread seal tape” contain PFCs and may not be used during sampling activities.
- The sampler must wear nitrile gloves while filling and sealing the sample bottles.
- Procedure for collecting a groundwater sample for PFOA and PFCs:
    1. Fill two pre-cleaned 500 mL HDPE or polypropylene bottles with the sample.
    2. Cap the bottles with an acceptable cap and liner closure system.
    3. Label the sample bottles.
    4. Fill out the Chain of Custody.
    5. Place in a cooler maintained at 4±2° Celsius.

5. Quality Assurance/Quality Control

The primary intended use for the SMP data is to manage the residual contamination and monitor the extent of LNAPL and impacts in groundwater. The primary DQO of the groundwater sampling program, therefore, is that data be accurate and precise, and hence representative of the actual Site conditions. Accuracy refers to the ability of the laboratory to obtain a true value (i.e., compared to a standard) and is assessed through the use of laboratory quality control (QC) samples, including laboratory control samples and matrix spike samples, as well as through the use of surrogates, which are compounds not typically found in the environment that are injected into the samples prior to analysis. Precision refers to the ability to replicate a value, and is assessed through both field and laboratory duplicate samples.

Sensitivity is also a critical issue in generating representative data. Laboratory equipment must be of sufficient sensitivity to detect target compounds and analytes at levels below NYSDEC standards and guidelines whenever possible. Equipment sensitivity can be decreased by field or laboratory contamination of samples, and by sample matrix effects. Assessment of instrument sensitivity is performed through the analysis of reagent blanks, near-detection-limit standards, and response factors. Potential field and/or laboratory contamination is assessed through use of trip blanks, method blanks, and equipment rinse blanks (also called “field blanks”).

Table 1 lists the field and laboratory QC samples that will be analyzed to assess data accuracy and precision, as well as to determine if equipment sensitivity has been compromised.

All analyses will be performed in accordance with the NYSDEC Analytical Services Protocol (ASP), using USEPA SW-846 methods. The laboratory selected to analyze the field samples (groundwater) collected shall maintain a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) Contract Laboratory Protocol (CLP) certification for each of the “assessment” analyses listed in Section 2.0. Alpha Analytical, Inc. based in Mahwah, New Jersey is selected for this sampling and its New York certifications are listed in Appendix B.

All laboratory data generated for groundwater samples are to be reported in NYSDEC ASP Category B deliverables and will be delivered to NYSDEC in electronic data deliverable (EDD) format as described on NYSDEC’s website (http://www.dec.ny.gov/chemical/62440.html).

Per the NYSDEC request, a Data Usability Summary Report (DUSR) will be prepared by an independent party meeting the requirements in Section 2.2(a)1.ii and Appendix 2B of DER-10 for all data packages. The resume of the person preparing the DUSR is provided in Appendix A.

TABLE

1. Analytical Methods/Quality Assurance Summary

Table 1. Analytical Methods/Quality Assurance Summary
Quality Assurance Project Plan
Former Paragon Paint and Varnish Facility, Long Island City, NY

	Number of Samples / Frequency	Sample Container Volume / Type / Preservative	Sample Holding Time	Method Detection Limit	Minimum Reporting Requirements	Use
Groundwater						
SMP Phase Sampling						
TCL Volatile Organic Compounds Plus Tentatively Identified Compounds - EPA 8260C	Varies / Annually	40 mL (x3) / VOA / HCl	14 days	Various	NYSDEC ASP - Category B	--
NYSDEC Emerging Contaminants Sampling						
PFAS (NYSDEC 21-Compound List) - EPA 537 Modified	Four / Annually	250 mL (x3) / Plastic / Trizma	14 days	2 ng/L	NYSDEC ASP - Category B	--
1,4-dioxane - EPA 8270 SIM	Four / Annually	500 mL (x2) / Amber / None	14 days	0.075 ug/L	NYSDEC ASP - Category B	--
Low-Flow Parameters*	Varies / Annually	--	--		--	--
Field QC						
Duplicate	1 per matrix per SDG**	--	--		NYSDEC ASP - Category B	Precision
Trip Blank	1 per VOC cooler	--	--		NYSDEC ASP - Category B	Sensitivity
Equipment Rinse Blank	1 per day	--	--		NYSDEC ASP - Category B	Sensitivity
Laboratory QC						
Laboratory Control Sample	1 per matrix per SDG	--	--		NYSDEC ASP - Category B	Accuracy
Matrix Spike/Matrix Spike Duplicate/Matrix Duplicate***	1 per matrix per SDG	--	--		NYSDEC ASP - Category B	Accuracy/Precision
Surrogate Spike	All organics samples	--	--		NYSDEC ASP - Category B	Accuracy
Laboratory Duplicate	1 per matrix per SDG	--	--		NYSDEC ASP - Category B	Precision
Method Blank	1 per matrix per SDG	--	--		NYSDEC ASP - Category B	Sensitivity

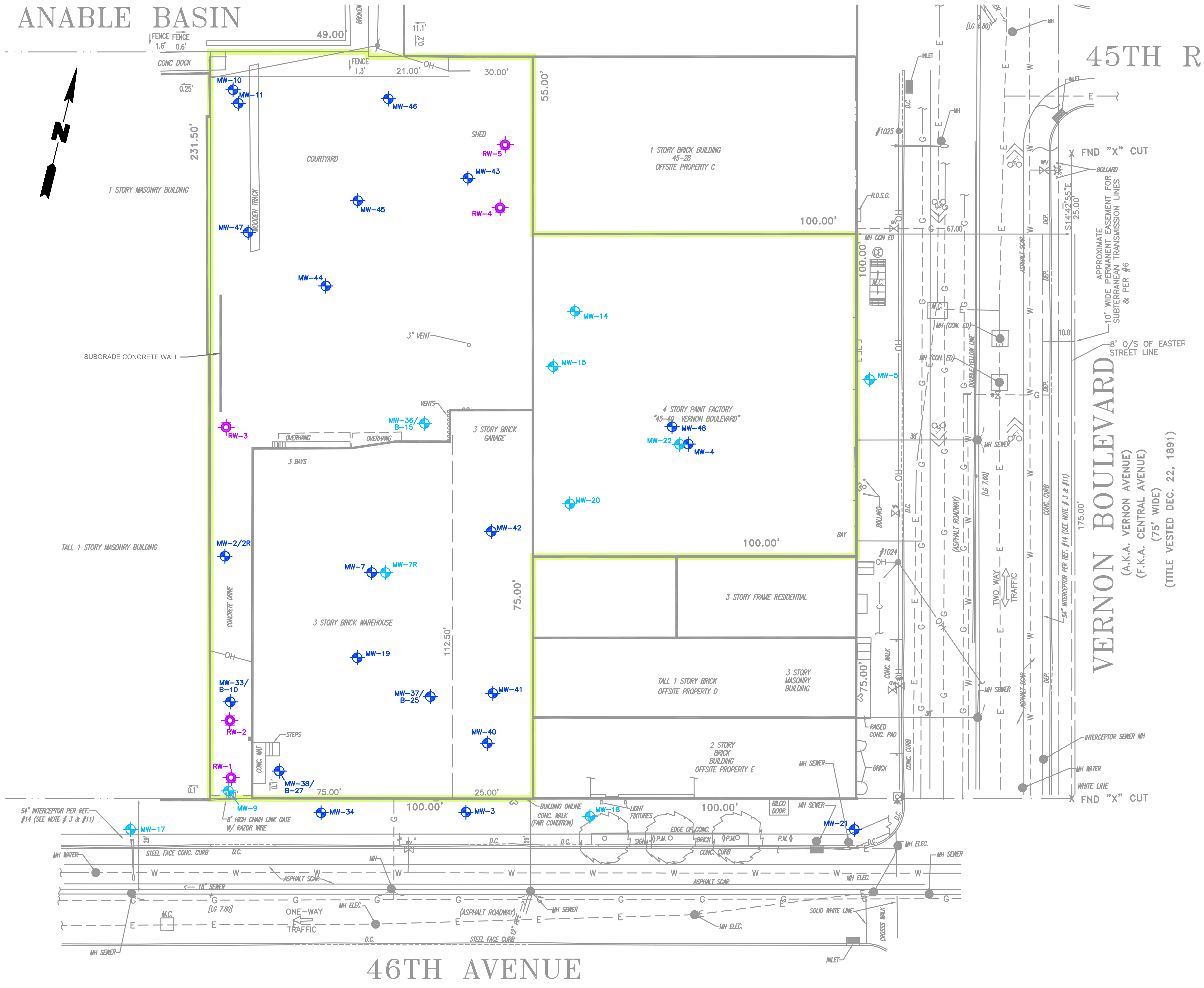
Notes:

* Parameters include Temperature (°C), Hydraulic Conductivity (mS/cm), Dissolved Oxygen Concentration (mg/L), pH, Oxidation Reduction Potential (mV), and Turbidity (NTU)

** SDG - Sample Delivery Group - Assumes a single extraction or preparation

*** Provided to lab by field sampling personnel

FIGURE



LEGEND

MW-4 ⊕	LOCATION AND DESIGNATION OF GROUNDWATER MONITORING WELL IN THE SAMPLING NETWORK
MW-5 ⊕	LOCATION AND DESIGNATION OF GROUNDWATER MONITORING WELL NOT INCLUDED IN THE SAMPLING NETWORK
RW-1 ⊕	LOCATION AND DESIGNATION OF LNAPL RECOVERY WELL
LNAPL	LIGHT NON-AQUEOUS PHASE LIQUID
ISCO	IN-SITU CHEMICAL OXIDATION
☐	CONCRETE VAULT
🟩	PROPERTY BOUNDARY

NOTE

REFER TO AS-BUILT DRAWINGS FOR ELEVATION INFORMATION OF INSTALLED PORTIONS OF COVER SYSTEM.

Title:

SMP SAMPLING NETWORK

QUALITY ASSURANCE PROJECT PLAN
PARAGON PAINT AND VARNISH CORPORATION
LONG ISLAND CITY, NEW YORK

Prepared For:

CSC 4540 PROPERTY CO LLC

ROUX

Compiled by: C.H.	Date: 05JUN18	FIGURE
Prepared by: G.M.	Scale: AS SHOWN	1
Project Mgr: R.M.	Project: 2051.0001Y000	
File: 2051.0001Y254.01.DWG		

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Quality Assurance Project Plan

Former Paragon Paint Manufacturing Facility
5-43 to 5-49 46th Avenue and 45-38 to 45-40 Vernon Boulevard
Long Island City, New York - Site No. C241108

APPENDICES

A. Professional Profiles
B. Laboratory Certifications

APPENDIX A

Professional Profiles

Christian Hoelzli
Project Engineer

TECHNICAL EXPERIENCE

Design, implementation, and management of Environmental Site Assessment and Subsurface Remedial Investigations. Remedial designs include product recovery systems, air sparging and soil vapor extraction, sub-slab depressurization systems, in-situ treatments, and remedial assessment and strategy associated with petroleum-related contamination and chlorinated solvents.

EXPERIENCE SUMMARY:

Five years of experience: Project Engineer at Roux Environmental Engineering and Geology, D.P.C., Islandia, New York

CREDENTIALS:

Engineer in Training (EIT), 2015
B.S. Civil and Environmental Engineering, Villanova University, 2015
OSHA 40-Hour HAZWOPER Training, 2015
OSHA 8-Hour Annual Refresher Training, Certificate Current
OSHA 30-Hour Construction Outreach Training, 2019
NYC DOB Site Safety Training, 2020
Amtrak Railroad Safety Training
Loss Prevention System® Awareness 8-Hour Certified
Transportation Worker Identification Credential (TWIC)

KEY PROJECTS

- Project Manager for three active petroleum bulk storage and distribution terminals in Newburgh, Inwood, and Glenwood Landing; New York with petroleum-impacted soil and groundwater. Terminals require system optimizations to improve protection of public health and the environment and maintain peak performance of five soil vapor extraction/air sparging systems and three groundwater remediation systems, while concurrently fulfilling NYSDEC regulatory reporting requirements per New York Code of Rules and Regulations (6 NYCRR) Part 750. Each soil vapor extraction system consists of multiple vapor extraction wells, a moisture separator, air dilution valve, in line filter screen, regenerative blower, and emissions stack. The groundwater remediation systems consist of air stripping units (packed tower), recovery and transfer pumps, associated piping, and multiple safety, control and isolation valves. Associated responsibilities include coordinating with the client and regulators, scheduling and management of staff and technical personnel, preparation of NYSDEC quarterly monitoring reports, monthly SPDES discharge monitoring reports, and other regulatory deliverables; coordinating facility upgrades and routine equipment maintenance, and collecting performance monitoring samples and data to track efficiency of remedies. Lead design of a large-scale air sparge / soil vapor extraction system at the Newburgh terminal to treat residual petroleum related impacts.
- Project Engineer and Field Manager for the design, construction, and O&M of an air sparge / soil vapor extraction system at a gas station with thermal off-gas treatment in Staten Island, New York. Responsibilities include equipment sizing and specification, communications with equipment vendors, retrofit design of system wells and equipment layout; construction oversight, system startup, system performance monitoring and optimization, and management of bimonthly O&M visits.
- Project Engineer responsible for the design and specification of an air sparge/ soil vapor extraction system with thermal off gas treatment at an offsite downgradient property in Brooklyn, New York. Responsibilities include preparation of a RAWP and 100% Design Letter to the NYSDEC, coordination with third party property owner, equipment sizing and specification, design of system wells and equipment layout within strict footprint constraints, preparation of subcontractor bid package, and construction management.
- Project Manager for a site in the New York State Brownfields Cleanup Program (BCP) that also required a RCRA compliant facility closure. The site is a former paint factory in Long Island City, New York. Due diligence environmental investigations determined historical site operations adversely impacted the subsurface including a LNAPL plume in addition to petroleum hydrocarbon impacts to the soil and groundwater. Responsibilities include management of implementation of the SMP, which includes coordinating quarterly groundwater monitoring events, operation and maintenance of LNAPL recovery system, inspection of RCA cap, and coordination of an ISCO injection program.
- Project Engineer responsible for design and implementation of a remote operated groundwater quality meter at an active railyard in Queens, New York.
- Engineering support to design injection program to remediate chlorinated volatile organic compounds observed in groundwater originating from a dry cleaner in Staten Island, New York. Responsibilities included selection of remedial product, designation of injection point locations, injection method, cost estimating, and alternative analyses.
- Field Engineer responsible for the operation and maintenance of a Dual Phase Vapor Extraction System (DPVE) consisting of 20 vapor recovery wells. The vacuum enhanced recovery system consisted of liquid ring pumps, pneumatic submersible pumps, low profile air stripper, bag filters, granular activated carbon units, and oil/water separator. Operated system in conjunction with a Surfactant injection program to treat groundwater for residual separate-phase petroleum hydrocarbons.
- Field Manager for excavation and site restoration of a former drainage pond and subsequent renovation into a public park in Glen Cove, New York. Responsibilities included subcontractor management, excavation oversight, installation of a floatables collection system, preparing daily reports, and interactions with local townspeople.

JUDY V. HARRY
P. O. Box 208
120 Cobble Creek Rd.
North Creek, NY 12853

Occupation: Data Validator/Environmental Technical Consultant

Years Experience: 41

Education: B.S., Chemistry, Magna cum laude, 1976, Phi Beta Kappa

Certifications: New York State Woman-Owned Business Enterprise (WBE)

Relevant Work History:

Data Validation Services: September 1989 - present

Sole proprietor of Data Validation Services, a woman-owned small business registered with SAM, providing consultation/validation services to regulatory and commercial clients.

These services include the review of analytical laboratory data for compliance with respect to specific protocols, accuracy and defensibility of data, verification of reported values, and evaluation of quality parameters for analytical usability of results. Approved by USEPA, NYSDEC, NJDEP, NYSERDA, and NYCDEP as a data validator for projects, including USEPA Superfund, Brownfield, and lead sites, and those contracted through the NYSDEC Division of Hazardous Waste Remediation, Division of Solid Waste, and Division of Water Quality.

Performed validation for compliance with laboratory analytical protocols including USEPA OLM, USEPA OLC, USEPA ILM, USEPA DFLM, USEPA SOW3/90, USEPA SOW 7/87 CLP, USEPA SOW 2/88 CLP, USEPA SW846, RCRA, AFCEE, NYS 6 NYCRR Part 360, 40 CFR, Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, including TO-15, 1989/1991/1995/2000/2005 NYSDEC ASPs, and 1987 NYSDEC CLP.

Performed validation according to the USEPA National and Regional SOPs and Functional Guidelines, AFCEE requirements, NYSDEC Validation Scope of Work, NYS DUSR, and NJDEP Division of Hazardous Site Mitigation/Publicly Funded Site Remediation SOPs.

Performed validation for USEPA Superfund Sites including Salem Acres, York Oil, Port Washington L-4 Landfill, Bridgeport Rental and Oil Services, GE-MRFA, MMR/ OTIS AFB, LCP, and Peter Cooper site; and for USEPA lead sites including SJ&J Piconne, Maska, Bowe System, Jones Sanitation, and Syossett Landfill, involving CLP, RAS, and SAS protocols.

Contracted for NYSDEC Superfund Standby Contracts with LMS Engineers, HDR, CDM Smith, Malcolm-Pirnie/ARCADIS, Ecology & Environment, Shaw Environmental, CG&I, O’Brien & Gere Engineers, and EC Jordan, involving samples collected at NYS Superfund Sites and analyzed under the NYSDEC ASP.

Performed validation services for NYSDEC Phase II remedial investigations, RI/FS projects, Brownfield sites, and PRP over-site projects for hazardous waste sites.

Performed validation services for clients conducting RI/FS activities involving samples of many matrices, including waste, air, sludges, leachates, solids/sediments, aqueous, and biota.

Clients have included AECOM, ARCADIS, Barton & Loguidice, Benchmark Engineering, Bergmann Associates, Blasland, Bouck & Lee, Brown and Caldwell, CDM Smith, CB&I Shaw Environmental, C&S Consulting Engineers, Chazen Companies, Clough Harbour & Associates, Columbia Analytical Services, C.T. Male, Dames & Moore, Day Engineering, EA Engineering, EcolSciences, Ecology & Environment, Ecosystems, EC Jordan, Environmental Chemical Corporation, EHRT, ENSR Consulting, ELM, ERM-Northeast, Fagan Engineers, Fanning Phillips & Molnar, FluorDaniel GTI, Frontier, Foster Wheeler Environmental Corp, Frontier Technical, Galson Consultants, GE&R, Geomatrix Consultants, GZA Environmental, Handex of N, H2M Group, HDR, HRP, IT Corp, Jacques Whitford, JTM Associates, Labella Associates, Langan Engineers, Leader Environmental, Lockwood, Kessler & Bartlett, LMS Engineers, Malcolm-Pirnie, Metcalf & Eddy, NWEC&C, O'Brien & Gere Engineers, Pace, Parsons Engineering-Science, Plumley Engineering, Prescott Environmental, P. W. Grosser, Rizzo Associates, Roux Associates, Sear Brown Group, SECOR, Shaw Environmental, Stantec, ThermoRemediation Inc., TRC Environmental, Turnkey Environmental Restoration, TVGA Engineering, URS Consultants, Wehran Emcon, Weston, YEC, and private firms.

Provided consultation services to laboratories regarding analytical procedures and protocol interpretation, and to law firms for litigation support.

Provided services to firms involving audits of environmental analytical laboratories to determine analytical capability, particularly for compliance with NYSDEC ASP and AFCEE requirements.

Guest speaker on a panel discussing Data Review/Compliance and Usability, for an analysis workshop for the New York Association of Approved Environmental Laboratories, 1993.

Adirondack Environmental Services: June 1987 - August 1989

Senior mass spectroscopist for AES. Responsible for GC/MS analyses of environmental samples by USEPA and NYSDEC protocols, development of the GC/MS laboratory, initiating the instrumental and computer operations from the point of installation, and for implementing the procedures and methodologies for Contract Laboratory Protocol.

CompuChem Laboratories: May 1982 - January 1987

Managed a GC/MS production laboratory; developed, implemented, and supervised QA/QC criteria at three different levels of review; and was responsible for the development and production of the analysis of environmental and clinical samples. Directed a staff of 23 technical and clerical personnel, and managed the extraction and GC/MS labs and data review operations.

Research Triangle Institute: December 1979 - May 1982

Worked as an analytical research chemist responsible for development of analytical methods for the EPA Federal Register at RTI. This involved analysis of biological and environmental samples for priority pollutants, primarily relating to wastewaters and to human sampling studies. Method development included modification and interfacing of the initially developed Tekmar volatile purge apparatus to GC/MS, development and refinement of methods for entrapment and concentration of the air medium for subsequent volatile analysis, and the analysis and resolution/ identification of individual PCB congeners within Aroclor mixtures by capillary column and mass spectra.

Guardsman Chemical Company: February 1977 - November 1979

Performed all quality control functions for the manufacturing plant. Performed research and development on coatings and dyes.

Almay Cosmetics: May 1976 - December 1976

Product evaluation chemist. Responsible for analytical QC of manufactured products.

Publication

Pellizzzari, E.D., Moseley, M.A., Cooper, S.D., Harry, J.V., Demian, B., & Mullin, M. D. (1985). Recent Advances in the Analysis of Polychlorinated Biphenyls in Environmental and Biological Media. *Journal of Chromatography*, 334(3) 277-314.

PROFESSIONAL PROFILE

Omar Ramotar, P.E.

Principal Engineer/Office Manager

TECHNICAL SPECIALTIES

Engineering services for the investigation, design, construction, operation, maintenance and monitoring of remedial systems for the remediation of contaminated soil, sediment, and groundwater.

EXPERIENCE SUMMARY

Over 25 years of experience: Staff, Project, Senior, and Principal Engineer with Roux.

CREDENTIALS

B.E., Environmental Engineering, Hofstra University 1994

M.E., Environmental Engineering, Manhattan College 1995

Professional Engineer: New York, 2000

OSHA 40-hour Health & Safety Course, 1995

OSHA 8-hour Health & Safety Refresher Course, 1996-2019

KEY PROJECTS

- Project Manager and Principal-in-Charge for a multi-element (large scale removal action [45,000 cubic yards of impacted materials excavated and consolidated on-site/disposed off-site], large scale subsurface feature and UST removal action, and remediation and restoration of a 3.2-acre seasonal pond located in the Massapequa Preserve) remedial design of a USEPA Superfund Site in Nassau County, New York. Responsible for the Preparation of USEPA response letters, technical drawings, and 95% and 100% remedial design documents in accordance with the Record of Decision and Consent Judgment.

- Project Manager and Principal-in-Charge for design of a natural wastewater treatment solution for a 3,000-acre new industrial complex in Saudi Arabia. Roux Associates was tasked to design an Engineered Natural System (to treat all wastewaters: sanitary, process and stormwater) from construction through operation, incorporate transitioning through phases, and plan for future expansion of the facility and increased wastewater flow rates. The 23-acre ENS was designed to treat a total flow of 1.4 million gallons per day. The major system components include: dump station with five truck hookup ports to collect and convey sanitary wastewater during construction of the facility; three primary sedimentation and anaerobic treatment tanks; one oil/water separator; six patented enhanced subsurface flow constructed treatment wetlands; two down flow disinfection filters; UV disinfection system; One treated water holding tank which conveys the treated water back to the facility for reuse within the refinery and as irrigations for landscaped areas; two infiltration basins; and six activated alumina treatment cells to remove fluoride from facility stormwater runoff.

- Project Manager and Principal-in-Charge for the bidding, contractor selection, and remediation of the wetland and canal portions of a 440-acre tract in western Staten Island that was used as a Major Oil Storage Facility (MOSF) for petroleum products until the end of 1995. Responsible for the preparation of a Remedial Action Work Plans, technical drawings, and 95% and 100% remedial design documents and for the remedial construction phase in accordance with the Site-specific Consent Order issued by the NYSDEC. Key elements of the Work include dredging/excavation of approximately 20,000 cubic yards of petroleum and lead impacted sediments/soils, off-site disposal, on-site capping and restoration of approximately 6.5 acres of disturbed wetlands. Routine activities included coordinating weekly construction meetings; preparing detailed NYSDEC monthly construction progress reports; ensuring Contractor compliance with remedial design, CAMP and project-specific erosion and sedimentation controls; and managing the overall project budget and schedule.

- Project Manager and Principal-in-Charge for the bidding, contractor selection, and remediation of a New York State Superfund Project. Responsible for the preparation of a Remedial Action Work Plans, technical drawings, remedial design documents and for the remedial construction phase in accordance with the Amended Record of Decision issued by the NYSDEC. Key elements of the Work include excavation and off-site disposal of approximately 20,000 tons of VOC impacted soils, on-site capping and in situ chemical oxidation. Routine activities included coordinating weekly construction meetings and preparing associated meeting minutes; preparing detailed NYSDEC monthly construction progress reports; ensuring Contractor compliance with remedial design, CAMP and project-specific soil erosion and sedimentation controls; and managing the overall project budget and schedule.

- Project Manager for the bidding, contractor selection, and remedial construction phase at a 40-acre former metals manufacturing facility in Staten Island under the NYSDEC Voluntary Cleanup Program. Responsible for overall construction management for dredging/stabilization and off-site disposal of approximately 7,000 cubic yards of metal-impacted sediments from a tidally influenced embayment area and creek system, off-site disposal of approximately 3,000 cubic yards of sediment, on-site consolidation of approximately 4,000 cubic yards of sediment; capping of fill material/bank stabilization; in-place abandonment of former water and sanitary sewer system; construction of an 8 acre asphalt cap, installation of new stormwater sewer system and restoration and mitigation of approximately 2 acres of wetland areas disturbed by ongoing remedial activities. Routine activities included coordinating weekly construction meetings; preparing detailed NYSDEC monthly construction progress reports; ensuring Contractor compliance with remedial design; and managing the overall project budget and schedule.

- Project Construction Manager for a NYCDEP storm and sanitary sewer construction project in Brooklyn, New York. Work included design and construction of approximately 690 linear feet of RCP storm sewer, approximately 725 feet of ductile iron sanitary sewer, 6 new house connection spurs, new sewer and sanitary manholes and 12,000 square feet of asphalt removal and replacement. Routine activities included coordinating weekly construction meetings; ensuring Contractor compliance with remedial design, CAMP and SWPPP implementation; and managing the overall project budget and schedule.

- Project Manager for the preparation of a Feasibility Study Report and ongoing remediation of a 40-acre former manufacturing facility in Rensselaer, New York as part of the NY State Superfund Program. Responsible for the preparation and implementation of multiple large-scale IRM soil removal remedial actions resulting in approximately 12,000 tons of non-hazardous waste and 10,720 tons of hazardous waste shipped off-site. Also, responsible for the preparation and implementation of the remediation of two 80,000-square foot former wastewater treatment lagoons. Approximately 7,000 cubic yards of hazardous waste sediments shipped off-site. Approximately 4,000 cubic yards of riprap lining the perimeter of both lagoons mechanical screened to remove interstitial sludge within the riprap matrix. NYSDEC approval gained for on-site reuse of 3,200 tons of riprap saving the client approximately $400,000 in disposal costs. Provided ongoing support for various tasks associated with constructing, operating and maintaining the on-site groundwater treatment system.
- Principal Engineer and Project Manager for On-Site Environmental Monitor (OEM) Program implemented at the largest redevelopment project in New York City (over $5 billion). Required to ensure environmental compliance with regards to air, storm-water, noise, traffic and other relevant environmental concerns during the performance of any construction related activity across the 22-acre redevelopment project Site. The Project consists of the construction of 30 buildings (commercial and residential); eight (8) acres of public open space and approximately 1,200 below grade parking spaces and some retail and community facility uses. The Project also includes the development and construction a new storage and maintenance rail yard facility for the Long Island Rail Road (LIRR) below grade across two city blocks over which a platform will be constructed along with six of the Project buildings and some of the open space.

Additional Soil and Groundwater Remediation Experience

- Principal in Charge and Project Manager for the preparation and implementation of a Remedial Action Work Plan (RAWP) at a former ink ribbon and carbon manufacturer in Glen Cove, New York. Scope of work included the removal of approximately 20,000 tons of listed-hazardous toluene-contaminated soil at various final excavation depths within 1.4-acre area, followed by ISCO injections across the excavated area. All on-site sources of contamination were removed and on-site groundwater was remediated to Site cleanup levels within 18 months from initiation of Site construction activities. Prepared Final Engineering Report (FER) and Site Management Plan (SMP) as required by the NYSDEC.
- Principal in Charge and Project Manager for the source-area excavation and treatment of groundwater and soil grossly impacted by light non-aqueous phase liquid (LNAPL), volatile organic compounds (VOCs), and hazardous materials at a 33,150 square foot lot entered into a NYSDEC Brownfield Cleanup Agreement site in Long Island City, New York. Prepared and certified the NYSDEC-required Remedial Action Work Plan, Site Management Plan and Final Engineering Report. Remediation efforts included removal of approximately 5,000 tons of grossly contaminated material removal using steel sheet piling and disposal/abandonment eleven (11) underground storage tanks (USTs) ranging in size from 2,000 to 25,000+ gallons that contain diesel fuel/fuel oil, mineral spirits, and linseed oil. In Situ Chemical Oxidation (ISCO) injections completed to address residual VOC contamination in soil and groundwater during the performance of the remedial action.
- Project Manager for the remedial design and remediation of a 23-acre former municipal landfill located in Glen Cove, New York as part of the NY State Superfund Program. The work was performed in accordance with Title 3 of the NYS Environmental Quality Bond Act under contract to the City of Glen Cove. Design elements included excavation of hazardous and radiological waste (8,500 cubic yards in total), 44,000 cubic yards of bulky waste, VOC and radiological waste monitoring, demo debris and waste separation and screening, dewatering, waste disposal, capping and site restoration. Additional work included the de-listing of a six acre "clean" portion of the site to allow the development of a ferry terminal and esplanade and development of alternative cleanup standards consistent with future site uses. Site remediation will accommodate site redevelopment as a commercial waterfront and operating ferry service and seaport area.
- Project Manager for the investigation and remediation of several sites spanning multiple blocks for a major pharmaceutical company in Brooklyn, New York. Environmental investigation is being conducted in preparation of possible property transfer. Responsibilities include development and preparation of investigation and remedial action work plans and coordination and management of resulting field investigation and remediation efforts. Project Engineer for a SVE/AS system to treat groundwater contaminated with VOCs and chlorinated VOCs at one 0.8-acre block. Designed and performed two SVE/AS pilot studies. Designed the full-scale SVE/AS system. Managed bidding, contractor selection, remedial construction, system start-up, operation, maintenance and monitoring phases for the full-scale SVE/AS system.

- Project Manager for the design of a soil and groundwater remediation system for a nationwide overnight delivery distribution center in Brooklyn, New York as part of the NYSDEC Voluntary Cleanup Program. A risk based remedial approach that called for the remediation of "hot spot" source area soils and mass-reduction of VOCs was successfully utilized for the Site. As a result, the focus of remediation was on reducing the mass of VOCs in on-site groundwater to a level where natural attenuation would be effective in remediation of VOCs. To address the contamination in the source area, a SVE/AS system consisting of 8 SVE wells and 17 AS wells was designed, constructed, operated, and maintained for a period of approximately 3 years. The SVE/AS system has been permanently shut down and the Site is currently in the post-remediation monitoring phase.
- Project Manager for the remediation of a former major pharmaceutical plant located in Hicksville, New York as part of the NY State Superfund Program. The project consisted of the excavation of non-hazardous soil from 5 on-site drywells and a former waste disposal area, implementation of a community air monitoring plan, coordination with the Long Island Rail Road (LIRR) for work performed within the LIRR's right of way, steel sheeting installation and removal, backfilling, monitoring well abandonment and replacement, transportation and disposal of 3,300 tons of VOC, SVOC and metal contaminated soil, and restoration of approximately 9,800 square feet of asphalt. A 7-foot diameter steel caisson was used to support the deeper excavation required at the invert of two drywells. This innovative approach saved the client approximately $50,000 in costs that would have been incurred by using a traditional steel sheeting support system to protect the on-site commercial building.
- Project Engineer for the complete design, implementation and startup of five distinct air sparge (AS) and soil vapor extraction (SVE) systems for the remediation of gasoline contaminated groundwater and soils. Pilot studies were performed at several locations at an 850-acre petroleum terminal site in Rhode Island and lead to the design of full-scale AS and SVE remediation systems that are being used in a phased approach, to remediate selected areas of the site. The designs included specialized modeling techniques to determine the optimum system requirements and components.
- Project Engineer for the design and construction management of a soil remediation project at a 28-acre former pesticide warehouse facility in Dayton, New Jersey. The project consisted of the excavation and on-site consolidation and capping of 7,500 cubic yards of pesticide contaminated soil. The capped areas were designed to be incorporated into a Site re development plan for use as a storage and trailer parking lot. A Soil Erosion and Sedimentation Control Plan and a NJPDES General Permit were prepared for the project.
- Project Engineer for the design and remediation of a former sanitary wastewater leaching system at a 16.6-acre NYS RCRA site in Bethpage, New York. The project consisted of the excavation, staging, transportation, and disposal of VOC, SVOC, metal and pesticide contaminated soil. Approximately, 5,100 tons of non-hazardous soil, 1,300 tons of hazardous metals contaminated soil and 350 tons of hazardous VOCs contaminated soil. Structures remediated consisted of an imhoff tank, 33 leach pools, 2 distribution boxes, 2 stormwater drains, 2 sludge drying beds, and a blast fence area.
- Staff Engineer for the preparation and implementation of a Soil IRM plan for a major pharmaceutical plant in Brooklyn, New York as part of the NYSDEC Voluntary Cleanup Program. Work elements included contractor plan preparation, steel sheeting and removal, excavation of hazardous and non-hazardous waste, VOC and particulate monitoring, dewatering water management, waste transportation, disposal and tracking, backfill placement and compaction. IRM Soil remediation included excavation of over 1,620 tons of non-hazardous soil and 524 tons of hazardous soil.
- Senior Engineer for design and construction of several elements of a 40 gpm treatment system for a 40-acre former manufacturing facility in Rensselaer, New York. BASF Site. Design support for 4,000 linear feet of collection trenches, 7 extraction well vaults, 2 air release chambers, and 2 groundwater re-injection galleries and a 50 foot by 60-foot treatment system containment pad. Coordination of construction efforts between mechanical and electrical contractors.
- Project Engineer for preparation and certification of Final Engineering Report and Site Management Plans for remediation of a 40-acre former metals manufacturing facility in Staten Island under the NYSDEC Voluntary Cleanup Program. Remediation included dredging/stabilization and off-site disposal of approximately 7,000 cubic yards of metal-impacted sediments from a tidally influenced embayment area and creek system, off-site disposal of approximately 3,000 cubic yards of sediment, on-site consolidation of approximately 4,000 cubic yards of sediment; capping of fill material/bank stabilization; in-place abandonment of former water and sanitary sewer system; construction of an 8 acre asphalt cap, installation of new stormwater sewer system and restoration and mitigation of approximately 2 acres of wetland areas disturbed by ongoing remedial activities. Routine activities included coordinating weekly construction meetings and preparing associated meeting minutes; preparing detailed NYSDEC monthly construction progress reports; ensuring Contractor compliance with remedial design; and managing the overall project budget and schedule.

- Project Engineer for preparation of Final Engineering Report and Site Management Plan for the remediation of a 40-acre former manufacturing facility in Rensselaer, New York as part of the NY State Superfund Program. Remediation included: multiple large-scale IRM soil removal remedial actions resulting in approximately 12,000 tons of non-hazardous waste and 10,720 tons of hazardous waste shipped off-site; remediation of two 80,000-square foot former wastewater treatment lagoons; groundwater containment and treatment system construction and Site-wide capping.

Additional Feasibility Study Experience

- Principal Engineer for the preparation of a Feasibility Study Report for a NYS Superfund Site in Glen Cove, New York. The Site is approximately 15 acres in size with a 1.4-acre portion of the site impacted by historical disposal of industrial wastes. Approximately 10,000 cubic yards of non-hazardous and hazardous waste has been identified to be potentially shipped off-site.

- Principal Engineer for preparation of a Focused Feasibility Study to optimize ongoing free-product recovery efforts for an 18-million-gallon release of petroleum hydrocarbon product from a former refinery and petroleum storage terminal in Brooklyn, New York. The remedial action objectives of the feasibility study were: removal of free product to the extent practicable, prevention and/or elimination of any product seeps from the Site that result in visual petroleum product sheens on surface water and eliminate through removal, treatment, and/or containment the source of surface water contamination to the extent practicable. Technologies evaluated and retained included: Excavation, skimming, dual pump liquid extraction, water flooding, surfactant enhanced subsurface remediation, cosolvent flushing, vapor enhanced fluid recovery, enhanced fluid recovery, and natural source zone depletion.

- Project Manager and Senior Engineer for the preparation of a Remedial Action Selection (RAS) Report for a 9-acre landfill in Rensselaer, New York as part of the NYSDEC Voluntary Cleanup Program. The primary goal of the RASR was to select a remedial alternative that was most protective of human health and the environment under the contemplated future use of the Site as a landfill with an integrated wildlife habitat vegetative cap. The final remedy for the landfill will include 1,000 linear feet of perimeter groundwater collection trenches, a 40-gpm treatment system for metals and VOCs and excavation and in situ chemical oxidation of VOC source areas.

- Project Engineer for the preparation of a Focused Feasibility Study (FFS) Report for the remediation of two dry wells at a formerly government owned, contractor operated, 105-acre New York State RCRA site in Bethpage, New York. The soils below and in the vicinity of each drywell were contaminated at various locations from 2 to 55 feet below land surface (bls) with PCBs exceeding NYSDEC standards. The FFS evaluated the following options: no action, in situ thermal desorption and excavation and off-site disposal. The no action alternative was recommended because the Site characterization and exposure assessment results indicated that there was no potential risk to persons using the Site for commercial or industrial activities, PCB impacted soils had been previously excavated to a depth of 28 feet bls and because PCBs are generally immobile in the environment, so migration is unlikely.

Additional Miscellaneous Design Experience

- Project Engineer for the design and construction management of a private vehicle fueling area at a New York City railyard. System components included: UST and process piping, level/monitoring systems, pump dispenser and keycard system, pump island, canopy and fire suppression system. Design met all substantive requirements of the New York City Fire Department (NYCFD) and New York City Department of Buildings (NYCDOB). Tasks included equipment selection, equipment sizing, piping layout, preparation of plans and specifications and shop drawing review and approval.

Additional Stormwater Design Experience

- Project Engineer for the design and construction management of a stormwater drainage project for a 28-acre former chemical pesticide manufacturing facility located in Dayton, New Jersey. The stormwater drainage system consisted of multiple catch basins, over 2,000 linear feet of reinforced concrete pipe ranging in size from 15 to 30 inches, and a recharge basin. The TR 55 computation method was used to size the drainage system for a 25-year storm event. The drainage system was designed in strict accordance with the New Jersey Department of Environmental Protection (NJDEP), the New Jersey Soil Conservation District (NJSCD) and the local planning departments.

Additional Engineered Natural System Design Experience

- Senior Engineer for the design of a compost treatment (CT) cell retrofitted into an existing sludge drying bed located at an integrated aluminum smelting and fabricating facility in Massena, New York. The principal objective of the CT will be to remove and sequester low level PCBs in the Site wastewater stream prior to discharge to the Site's permitted outfall. The proposed CT cell will be incorporated into the wastewater treatment process to evaluate PCB treatability in a CT environment as an alternative to other technologies currently being considered for the Site. The CT cell will be designed to accommodate variable hydraulic loading rates (10 to 70 gpm) and retention times in order to evaluate and define optimal system performance.

- Senior Engineer for the design of two pilot scale compost treatment (CT) systems for stormwater management at an active aluminum manufacturing facility in Lafayette, Indiana. The design included the retrofit of a 1,000 gallon above-grade septic tank (to handle a variable flow of 0.1 to 1 gpm) and a 100,000 gallon above-grade storage tank (to handle a variable flow of 10 to 50 gpm). The remedial goal of the pilot CT systems is for the removal of PCBs and aluminum from stormwater currently collected in the on-Site 100,000-gallon storage tank. The pilot systems were designed for incorporation into the existing stormwater system, thus precluding the need for additional permitting. The systems have been designed for year-round operation.

- Senior Engineer for the development of design improvements for a 45-acre former Landfill in Holtsville, New York to minimize the source of contamination to a downgradient pond and its' associated creek. A detailed budget water analysis was performed comparing current and proposed conditions to determine the best methods to minimize infiltration into the landfill and divert the stormwater runoff to the onsite recharge basin and away from the landfill. The proposed strategy currently entails modifying the existing stormwater conveyance controls (i.e., lining drainage swales), reducing the permeability of the landfill surface through the addition of recreational areas and lined stormwater storage ponds, and planting hybrid poplar trees to increase evapotranspiration at the Landfill. Overall, these modifications would be expected to reduce annual infiltration in the landfill surface from 24 inches to 18 inches, equivalent to approximately 8.2 million gallons of water annually.
- Project Engineer for the design of structural SMPs to manage runoff generated from a LEED certified 70,000 ft2 athletic facility, which is being constructed as part of a redevelopment of a 110-acre park facility in Staten Island, New York. Innovative structural stormwater management practices incorporated into the Site design include the following: micropool extended detention pond and infiltration basin. The pond will be comprised of a sedimentation forebay, shallow marsh, and pond. Suspended solids will drop out as runoff passes through the forebay, thereby enhancing treatment performance, reducing maintenance, and increasing the longevity of the system. The permanent pool provides additional dry storage capacity to mitigate peak flow rates prior to discharge into the overflow meadow. The forebay and pond are designed with shallow ledges along its fringe to support aquatic marsh plants. These wetland plants will aid in the stormwater treatment by impeding flow and trapping contaminants as they enter the forebay and pond. The fringe vegetation will stabilize and protect deposited sediments from resuspension during large storm events. The fringe wetland plants will include species such as rushes, reeds, and sedges, designed to improve water quality through the trapping and filtering of fine particles and soluble pollutants (metals, organics, and nutrients). Effluent from the micropool extended detention pond will then be discharged to an infiltration basin (i.e., Overflow Meadow) planted with a variety of native wildflower and wetland species for groundwater recharge.
- Project Engineer for the design of a pilot constructed treatment wetland system to treat stormwater discharge from an aluminum manufacturing facility located in Massena, New York. The 0.3-acre treatment system uses activated alumina and compost filter cells, and a sub-surface flow wetland to treat 1,400-4,300 gallons of stormwater daily.

Additional Operation and Maintenance (O&M) Experience

- Senior Engineer responsible for supporting the OM&M of a 40 gpm treatment system for a 40-acre former manufacturing facility in Rensselaer, New York. Processes and system maintained include aeration, bag filtration, air stripping, metals adsorption, liquid and vapor phase carbon adsorption.
- Senior Engineer responsible for the O&M and monitoring of a soil vapor extraction (SVE) and air sparge (AS) system for nationwide distribution center in Brooklyn, New York as part of the NYSDEC Voluntary Cleanup Program. O&M activities included system operation and maintenance, performance monitoring, soil gas monitoring, quarterly monitoring, and preparation of quarterly and annual status reports for submission to the NYSDEC. The SVE and AS system consists of 8 SVE wells and 17 AS wells and was designed, constructed, operated and maintained for a period of approximately 3 years. The SVE and AS system has permanently shut down and the Site is currently in the post-remediation monitoring phase.
- Project Engineer responsible for the O&M of a 430 gpm, dual-phase, product recovery system in Greenpoint, Brooklyn, New York. Processes and system maintained include dual-phase groundwater and product recovery, low profile air strippers and a catalytic oxidation unit. The Site encompasses one of the nation's largest petroleum releases (18 million gallons).
- Project Engineer for the metals removal system upgrade of a 430 gpm, dual-phase, product-recovery system in Greenpoint, Brooklyn, New York. Upgrades included design, procurement and construction oversight to install a metals removal system, allowing the remedial system to run at full capacity with minimal O&M. The metals removal system included two 10-foot diameter continuously backwashing sand filters, process liquid aeration system and ancillary equipment. The pre-design phase also included the performance of an extensive bench study to optimize the system design.
- Project Engineer for the control system upgrade of a 430 gpm, dual-phase, product-recovery system in Greenpoint, Brooklyn, New York. Upgrade included design procurement and construction oversight to install a new control system to eliminate intermittent power surges and sags which, in combination with the communication problems, had caused the previous control system to operate unpredictably. These

upgrades included installation of new remote input/output systems, new uninterruptible power supplies and new remote communication cables at all six remote well sites.

- Staff Engineer for the O&M of a product recovery system in Howard Beach, New York. O&M activities include system maintenance and performance monitoring through on-site and off-site monitoring wells.
- Staff Engineer for the O&M of a 40 gpm groundwater remediation system at an industrial facility in Queens, New York as part of the State Superfund Program. O&M activities included system maintenance, effluent sampling, quarterly monitoring, and preparation of quarterly and annual status reports for submission to the NYSDEC.
- Staff Engineer for the design, implementation and O&M for two remedial treatment facilities to remediate groundwater impacted by leaking USTs at two service garages owned by a New York state telecommunications company. System was designed to treat groundwater at a flow-rate between 5 and 10 gpm using granular activated carbon adsorption treatment units.

Additional Health and Safety Management or Facility Decontamination or Demolition Experience

- Principal Engineer for the decontamination and decomissioning (D&D) of a 700,000+ square foot facility, in Brooklyn, New York for a major pharmaceutical company. The D&D activities were performed to allow for future use of the former facility for commercial, retail, and/or industrial purposes after renovation and redevelopment by others, by removing, cleaning, encapsulating or otherwise abating: (1) contaminants in indoor concrete identified during previous environmental investigations, (2) pharmaceutical manufacturing residues in ductwork identified during previous environmental investigations, (3) pharmaceutical manufacturing residues in select existing manufacturing infrastructure [including but not limited to relic air handling units (AHUs), dust collection systems, and air exhaust units], and performing partial interior building demolition and cleaning in connection with such infrastructure, (4) the horizontal drain piping associated with the eighth floor laboratories, and (5) paint containing polychlorinated biphenyls (PCBs) at a concentration of 50 milligrams per kilogram (mg/kg) or greater.
- Senior Engineer responsible for providing both worker and community Health and Safety through the monitoring of air particulates and VOCs during the electrical upgrade of pharmaceutical manufacturing facility in Brooklyn, New York. All work was performed in accordance with OSHA, NYSDEC and USEPA protocols for worker and community health and safety monitoring.
- Senior Engineer responsible for providing both worker and community Health and Safety through the monitoring of air particulates and VOCs during the construction of a parking lot redevelopment project for a pharmaceutical manufacturing facility in Brooklyn, New York. All work was performed in accordance with OSHA, NYSDEC and USEPA protocols for worker and community health and safety monitoring.
- Staff Engineer and Site Health and Safety Officer for the decommissioning of a pharmaceutical manufacturing facility in Brooklyn, New York. Responsibilities included construction oversight of all contractors for the following: dewatering, removal of 26 USTs ranging in capacity up to 30,000 gallons, excavation and stabilization of soil contaminated with VOCs, lead and mercury, and disposal of all waste generated. Additional responsibilities included providing both worker and community Health and Safety through the monitoring of air particulates, VOCs and mercury vapors. All work was performed in accordance with OSHA, NYSDEC and USEPA protocols for worker and community health and safety monitoring.
- Staff Engineer and Site Health and Safety Officer providing construction oversight and management for the completion of a building demolition and UST Removal Program at a metals manufacturing facility in Staten Island, New York. The project included asbestos and lead abatement oversight prior to building demolition activities and the removal of six 550-gallon gasoline USTs, one 1,000-gallon No. 2 fuel oil UST and one 600-gallon No 2 fuel oil UST. A total of four buildings, two smelting kettles, a 200-foot emissions stack and a 50-foot water tower were removed as part of the demolition program. Responsibilities included providing both worker and community Health and Safety through the monitoring of air particulates and VOCs, performing all required sampling, waste disposal tracking to document all activities performed, providing construction oversight of all contractors and preparing weekly progress reports.

Additional UST Experience

- Staff Engineer for the excavation oversight of 11 gasoline USTs, one waste oil UST, three pump islands and all associated underground and aboveground piping at a national railroad company in Queens, New York. Field oversight included post-excavation and waste characterization soil sampling, health and safety monitoring, supervision during the removal of the USTs and preparation of a Closure Report.
- Staff Engineer for the excavation oversight of three 8,000-gallon USTs, two pump islands and all associated piping at a service station in Greenwich, New York. Field oversight included post-excavation and waste characterization soil sampling, health and safety monitoring, supervision during the removal, cleaning, and disposal of the USTs and preparation of a Closure Report.

Wai Kwan, Ph.D., P.E.

Principal Engineer

TECHNICAL SPECIALTIES

Environmental chemistry, engineered natural systems, PCBs, chlorinated solvents, design of remediation systems utilizing traditional and innovative techniques.

EXPERIENCE SUMMARY

Over 14 years of experience as a Principal, Senior, and Project Engineer with Roux Associates, Inc.

CREDENTIALS

Ph.D., Environmental Engineering, Massachusetts Institute of Technology, 2003
M.S., Environmental Engineering, Massachusetts Institute of Technology, 1999
B.S., Chemistry, California Institute of Technology, 1997
B.S., Engineering & Applied Science, California Institute of Technology, 1997
Professional Engineer – New York, California

PUBLICATIONS/PRESENTATIONS/ABSTRACTS

Proactive Evaluation of PRP Status at Hazardous Waste Disposal Sites. Sullivan, D., Kwan, W. P., Gerbig, C. A., and Moore, C., Environmental Claims Journal, 27(2), 2015.

Extricating Membership as a PRP at Hazardous Waste Disposal Sites. Ram, N. M., Kwan, W. P., Gerbig, C. A., and Moore, C., Remediation Journal. Spring 2014.

Long-Term Performance of a Phytoremediation Cap. Kwan, W. P., USEPA Engineering Forum, August 2012.

Long-Term Performance of an Integrated CTW/Phyto Cap System. Kwan, W. P., and W. Eifert, 8th International Phytotechnology Society Conference, 2011.

Large-Scale Enhanced Reductive Dechlorination for the Remediation of Chlorinated Volatile Organic Compounds. Kwan, W. P., Senh, S., and Netuschil, G., Proceedings of The Seventh International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Paper F-036, 2010.

Predicting Oxidation Rates of Dissolved Contaminants During In Situ Remediation Using Fenton's Reaction. Kwan, W. P., and B. M. Voelker, Abstracts of Papers of the American Chemical Society, 228(352 ENVR), 2004.

Influence of Electrostatics on the Oxidation Rates of Organic Compounds in Heterogeneous Fenton Systems. Kwan, W. P. and B. M. Voelker, Environmental Science & Technology, 38(12), 2004.

Rates of Hydroxyl Radical Generation and Organic Compound Oxidation in Mineral-Catalyzed Fenton Like Systems. Kwan, W. P. and B. M. Voelker, Environmental Science & Technology, 37(6), 2003.

Decomposition of Hydrogen Peroxide and Organic Compounds in the Presence of Dissolved Iron and Ferrihydrite. Kwan, W. P. and B. M. Voelker, Environmental Science & Technology, 36(7), 2002.

Heterogeneous Fenton-Like Chain Reactions Initiated by Iron Oxides. Kwan, W. P. and B. M. Voelker, Abstracts of Papers of the American Chemical Society, 200(283 ENVR), 2000.

PROFESSIONAL AFFILIATIONS

American Chemical Society
American Society of Civil Engineers

KEY PROJECTS

In Situ Remediation

- Designed and oversaw construction of a full-scale in situ enhanced bioremediation treatment system for groundwater impacted with chlorinated volatile organic compounds (CVOCs) at an 18-acre former electronics manufacturing facility in Taiwan. Evaluated the effectiveness of different substrates for in situ treatment from the results of two concurrent 6-month pilot studies, resulting in selection of enhanced bioremediation. The full-scale treatment system consists of over 9,000 feet of piping and 189 molasses injection wells. The technology decreased tetrachloroethene (PCE) concentrations by 99 percent, trichloroethene (TCE) concentrations by 98 percent, and total CVOC concentrations by 96 percent.
- Project Manager for the injection of 10,280 gallons of Fenton's reagent to address groundwater contaminated with PCE and its breakdown products associated with a former PCE reclamation facility in Brooklyn, New York. The design focused on the source area and two downgradient hot spots that exhibited concentrations of dissolved CVOCs in parts per million and used a proprietary method to activate the Fenton's reagent.
- Project Manager for the remediation and closure of a former dry cleaner site in Brooklyn, New York, under the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program. Managed field staff and provided engineering support during excavation and removal of 55 cubic yards of soil and concrete impacted by PCE and its breakdown products from a basement. Provided design and management of injection of 1,700 pounds of potassium permanganate solution to treat CVOCs in groundwater. Prepared Remedial Action Work Plan, permit application, daily construction reports, Final Engineering Report (FER) and Site Management Plan (SMP). Interacted with client, contractor, and regulatory agency project manager.
- Field Engineer for the remediation of a NYSDEC Brownfield Site in Staten Island, New York. Supervised the removal of soil and groundwater contaminated with

hazardous levels of PCE and TCE released from a defunct dry cleaner. Evaluated the performance of molasses injections to enhance in situ bioremediation of impacted groundwater. Prepared the Final Engineering Report to document the remedial action.

- Prepared reports that evaluated bench scale and field scale results of using surfactant-enhanced subsurface remediation technology to enhance free-product recovery at an active railroad yard in Sunnyside, Queens, New York. Coordinated lab and field activities with a surfactant vendor, performed literature review, designed a multi-month field scale treatability study, and evaluated the findings for potential application during full scale remediation.

- Prepared a treatability study work plan to evaluate the feasibility of using surfactant-enhanced subsurface remediation technology to enhance free-product recovery at a former petroleum refinery and distribution terminal in Greenpoint, Brooklyn, New York. Corresponded with surfactant vendors, performing literature review, designed a bench scale treatability study, and assessed the feasibility of implementing enhanced recovery of residual free-product in the regional aquifer that is exhibiting decreases in recovery rates via dual-pump liquid extraction.

Landfills

- Project Manager for the remediation of a former petroleum refinery terminal in Buffalo, New York, under the NYSDEC Brownfield Cleanup Program. Prepared conceptual and final designs for stabilization of 1,400 linear feet of river embankment using tiered slopes, rip rap, and reinforced bioengineering as part of a landfill closure remedial action. The stabilized shoreline uses a variety of flora and land features to create multiple habitats for aquatic and terrestrial lifeforms, while also serving as a component of the vegetated landfill cover. Prepared Alternatives Analysis Report to document analysis of engineering options and remedy recommendation. Prepared permit application, Remedial Design and Bid Document for implementation of remedy. Reviewed contractor submittals. Provided oversight and engineering support during remedy construction. Prepared FER and SMP.

- Project Manager for the performance of a Corrective Measures Study (CMS) at a 30-acre land parcel undergoing RCRA Corrective Action in Williamsburg, Virginia. The site is a former fibers manufacturing facility, and a RCRA regulated landfill is located within the parcel. The CMS was conducted to identify, evaluate, and recommend a final remedy to address zinc-impacted groundwater discharging to a tributary. Managed multi-person field crew who installed multiple monitoring wells, gauged and sampled groundwater, and conducted slug tests. Analyzed the CMS data to show more than 96 percent of the zinc loading is attributed to groundwater discharge along approximately 20 percent of the shoreline. Proposed a final remedy consisting of a 6.5-acre phytotechnology cover and 960 linear feet of compost reactive barrier, at a significantly lower cost compared to conventional treatment approaches.

Regulated Sites

- Engineer for the remediation of soil and soil vapor impacted by the release of approximately 1,500 gallons of fuel at an operating gas station in San Bernardino County, California. Designed and involved in the operation of a soil vapor extraction (SVE) system consisting of five extraction wells focused on addressing the source area spanning 55 vertical feet.

- Engineer for the remediation of soil and soil vapor impacted by the release of PCE from a former dry cleaner in Compton, California. Prepared a pilot study to evaluate the feasibility of expanding the current SVE system to treat impacted soil and soil vapor at shallow and deep intervals underneath an existing supermarket.

- Operations Deputy for rapid mobilization and coordination of over 75 people to screen and sample for lead and other heavy metals in soil across 500 residences within 1.7 miles of the source in 10 days in the County of Los Angeles, California. Soil screening involved use of handheld x-ray fluorescence analyzer. Provided laboratory coordination, logistics and technical support, and QA/QC check of data.

- Engineer for the conceptual design of a two-acre engineered phyto cap for a site in Los Angeles County, California. The site is approximately seven acres and contains a waste dump and two abandoned oil production wells. The engineered phyto cap is designed to mitigate the potential for exposure of future residents to trash materials and is incorporated into the private, community-use park.

- Project Manager for a SVE and air sparge (AS) system to treat groundwater contaminated with VOCs and CVOCs at a 0.8-acre NYSDEC Voluntary Cleanup Site in Brooklyn, New York. Designed and performed two SVE/AS pilot studies. Designed the full-scale SVE/AS system. Provided oversight during installation of the full-scale SVE/AS system. Prepared the FER and SMP. Managed daily operations of the SVE/AS system and groundwater gauging and sampling personnel. Responsible for communications with the NYSDEC and reviewing progress reports.

- Project Manager for the performance of multiple soil, groundwater, and soil vapor investigations at a NYSDEC Voluntary Cleanup Site in Brooklyn, New York. Prepared reports, work plans and directed field staff in the collection of discrete soil, groundwater, and soil vapor samples to delineate the extent of CVOC contamination in groundwater, soil, and soil vapor. Used membrane interface probe (MIP) technology as a screening tool to focus subsequent sample collection efforts and to reduce overall investigation costs.

- Senior and Project Engineer for the evaluation of methods to treat petroleum impacted soils at a former petroleum refinery terminal in Buffalo, New York. Evaluated bench scale studies using organoclay, nitrate, RegenOx, cement/slag, and lime kiln dust. Designed, supervised, and evaluated the performance of favorable treatment agents based on results generated from pilot scale field tests. Also critiqued scanning electron microscopy photographs and energy dispersive x-ray spectroscopy absorption spectra that were used to identify and support the conclusion that multiple, unrelated lead species are present within one operable unit.

- Project Manager for the remedial investigation of a shopping center in Enfield, Connecticut. Designed a focused investigation using MIP technology to focus subsequent collection of groundwater and soil samples using a standard size and portable Geoprobe for interior locations, and installation of soil vapor pins for the collection of sub-slab samples. Managed field staff during the implementation of the remedial investigation and interacted with store proprietors to coordinate the work with minimal business interruptions.

- Field Engineer for the remediation of two 6.25-million-gallon process lagoons adjacent to the Hudson River at a former dye manufacturing facility in Rensselaer, New York. Supervised the excavation, staging, screening, and transport of riprap and soil contaminated with hazardous concentrations of arsenic. Interacted daily with the client and regulatory agency representatives during implementation of the remedial action.

- Project Engineer for a multi-element remedial design of a USEPA Superfund Site in Nassau, New York. Prepared response letters, technical drawings, and 95 percent and 100 percent remedial design documents in accordance with the Record of Decision and Consent Judgment.

- Evaluated laboratory data packages of post-excavation soil samples generated during the interim remediation of a former storage and loading area of a pharmaceutical company in Brooklyn, New York. Initial site investigations concluded site contamination was limited to petroleum-related compounds. Supplemental site investigations conducted a few years after the conclusion of the interim remediation showed a dissolved CVOC plume was present site-wide. Reviewed chromatograms and concluded that CVOCs were detected – but not reported since the reporting scope was limited to petroleum-related compounds – in many of the post-excavation soil samples, which would have provided earlier indications of the presence of the CVOC plume.

Stormwater Management

- Project Manager and Engineer for the design of a full-scale natural media filtration (NMF) system consisting of two stormwater storage basins (0.4 MM and 1.8 MM gallons) and four NMF cells (two 114,000-gallon aboveground cells and 0.15- and 0.25-acre in-ground cells) at a 172-acre active aluminum manufacturing facility in Lafayette, Indiana. The NMF cells treat up to 1,500 GPM of stormwater runoff and process water impacted by polychlorinated biphenyls (PCBs), dissolved and particulate aluminum, and suspended solids. Researched the fate and transport of PCBs, and assessed the treatability of PCBs in wetlands. Evaluated a compost treatability bench-scale experiment. Designed and coordinated groundwater percolation tests. Used HydroCAD to model treatment capacity for multiple storm events.

- Project Engineer for the design of a passive stormwater management system for a 3,500-acre aluminum manufacturing facility in Point Comfort, Texas. The passive stormwater management system uses sedimentation trenches and swales to manage and convey bauxite-laden runoff. Stormwater runoff is managed by a constructed treatment wetland (CTW) and is consumptively used by a phytotechnology tree plot. Completed a hydrologic analysis using USACE HEC-HMS modeling software. Prepared bid specifications and provided bid support.

- Project Manager for the design of a NMF system to reduce PCBs to non-detect levels in stormwater at an aluminum extrusion facility in Cressona, Pennsylvania. The NMF system treats the first flush volume of 240,000 gallons containing residual PCBs. Conducted a detailed analysis of the site's constituents and runoff volumes during dry weather and wet weather to properly size the pump station and the NMF cell. Prepared bid document and provided bid support.

- Project Engineer for the design of a CTW to manage stormwater runoff generated from a scrap metal recycling facility in Sayreville, New Jersey. The CTW was designed to handle and treat runoff with elevated levels of suspended solids prior to discharge to adjacent coastal and freshwater jurisdictional wetlands.

- Evaluated the feasibility of using CTW to treat 110 GPM of groundwater containing elevated levels of cyanide at an aluminum manufacturing facility in Hannibal, Ohio. The CTW was designed to address the site's constituents and winter environment, and was modularized to facilitate the expansion and incorporation of the pilot-scale CTW into the full-scale CTW.

- Project Manager for a feasibility study to mitigate land subsidence at a golf course adjacent to Long Island Sound in Northport, New York. Completed a data review of existing reports from USGS and local municipality, previous soil investigation, and current stormwater drainage design. Directed a field investigation to obtain data in support of the conceptual model for land movement. Concluded that existing stormwater management measures accelerated the rate of land movement. Evaluated potential engineering remedies.

Compliance

- Project Engineer for the evaluation of air emissions data from a steel mill melt shop in Sayreville, New Jersey. Prepared annual emissions statement in accordance with permit requirements using RADIUS software and emissions factors from AP-42 and CEMS data. Evaluated and summarized trends and anomalies observed in over one year's worth of air monitoring data on particulates and metals from monitors set up in the surrounding community.
- Project Engineer for the preparation of Title V emissions statement for two major hospitals in Nassau County, New York. Responsibilities included reviewing annual fuel usage data, calculating air emissions using emissions factors from AP-42, and preparing the emissions statement.
- Project Manager for the coordination, preparation, and submission of PCB TMDL reporting requirements for multiple sites in Virginia. Responsibilities included managing subcontractors, preparing submission forms in accordance with state guidelines, and preparing the first Pollutant Minimization Plan (PMP) in the state for PCBs.

Litigation Support

- Principal Engineer for the preparation of an expert report on the operation, closure, and pollution caused by a sanitary landfill adjacent to a creek in Indiana. The effort included reviewing historical site photographs; past regulations and practices for siting, operating, and closing of a sanitary landfill; and cost estimate to properly close the landfill.
- Senior Engineer for the analysis of expert reports and preparation of rebuttal for three superfund sites in New York and Massachusetts. The case involved assigning the percentage of PCBs released over time during the operation of the facilities at the three sites for the purpose of remedial costs allocation to various insurance carriers. Reviewed information submitted by opposing experts, conducted independent research to verify methodologies, and provided technical calculations indicating flaws in positions advocated by the opposing experts.
- Senior Engineer and Project Manager for the analysis of the sources and fate and transport of dioxins and PCBs into Newark Bay in New Jersey. Reviewed sediment and water column data from existing investigations, performed independent review of third party publications, and worked with geochemical expert on principal component analysis to identify dioxin contributions from several nearby sources.
- Senior Engineer for the preparation of an expert report for a fuel oil release in Rochelle Park, New Jersey. The release was from a residential underground storage tank (UST). The expert report opined on the age of the release, the reliability of the estimation method used by the opposing expert, and the accuracy of the age dating of the perforations in the UST.
- Project Engineer for the preparation of an affidavit regarding a cesspool explosion on Long Island, New York. The affidavit was prepared for the defendant's counsel providing technical calculations and opining on the improbability that the defendant's use of a drain cleaner contributed to a flash fire that injured the plaintiff. Also prepared an expert rebuttal affidavit to demonstrate the fallacies in the plaintiff's expert's arguments. The judge dismissed the case after reviewing all admitted information.
- Senior Engineer for the evaluation of expected remedial costs for waste disposal sites as part of a large bankruptcy litigation. Reviewed over 70 site records to identify potential liabilities and appropriate statute of limitations. Developed present value of remedial investigation and action costs and apportionment ranging from $160,000 to $1,200,000.
- Senior Engineer for the evaluation of gas chromatograms from multiple retail gasoline stations in Puerto Rico as part of a class action lawsuit. Responsibilities included reviewing for indicators of methyl tert-butyl ether (MTBE) and determining MTBE concentrations from historic laboratory data packages.

APPENDIX B

Laboratory Certifications

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Lead on Air Filter	EPA 40 CFR Part 50 App. G	AE	x	Y	
NY	PCBs and Aroclors	EPA TO-10A	AE	x	Y	
NY	Acenaphthene	EPA TO-13A Full Scan	AE	x	Y	
NY	Acenaphthylene	EPA TO-13A Full Scan	AE	x	Y	
NY	Anthracene	EPA TO-13A Full Scan	AE	x	Y	
NY	Benzo(a)anthracene	EPA TO-13A Full Scan	AE	x	Y	
NY	Benzo(a)pyrene	EPA TO-13A Full Scan	AE	x	Y	
NY	Benzo(b)fluoranthene	EPA TO-13A Full Scan	AE	x	Y	
NY	Benzo(ghi)perylene	EPA TO-13A Full Scan	AE	x	Y	
NY	Benzo(k)fluoranthene	EPA TO-13A Full Scan	AE	x	Y	
NY	Chrysene	EPA TO-13A Full Scan	AE	x	Y	
NY	Dibenzo(a,h)anthracene	EPA TO-13A Full Scan	AE	x	Y	
NY	Fluoranthene	EPA TO-13A Full Scan	AE	x	Y	
NY	Fluorene	EPA TO-13A Full Scan	AE	x	Y	
NY	Indeno(1,2,3-cd)pyrene	EPA TO-13A Full Scan	AE	x	Y	
NY	Naphthalene	EPA TO-13A Full Scan	AE	x	Y	
NY	Phenanthrene	EPA TO-13A Full Scan	AE	x	Y	
NY	Pyrene	EPA TO-13A Full Scan	AE	x	Y	
NY	1,1,1-Trichloroethane	EPA TO-15	AE	x	Y	
NY	1,1,2,2-Tetrachloroethane	EPA TO-15	AE	x	Y	
NY	1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA TO-15	AE	x	Y	
NY	1,1,2-Trichloroethane	EPA TO-15	AE	x	Y	
NY	1,1-Dichloroethane	EPA TO-15	AE	x	Y	
NY	1,1-Dichloroethene	EPA TO-15	AE	x	Y	
NY	1,2,4-Trichlorobenzene	EPA TO-15	AE	x	Y	
NY	1,2,4-Trimethylbenzene	EPA TO-15	AE	x	Y	
NY	1,2-Dibromo-3-Chloropropane (DBCP)	EPA TO-15	AE	x	Y	
NY	1,2-Dibromoethane (EDB)	EPA TO-15	AE	x	Y	
NY	1,2-Dichlorobenzene	EPA TO-15	AE	x	Y	
NY	1,2-Dichloroethane	EPA TO-15	AE	x	Y	
NY	1,2-Dichloropropane	EPA TO-15	AE	x	Y	
NY	1,2-Dichlorotetrafluoroethane	EPA TO-15	AE	x	Y	
NY	1,3,5-Trimethylbenzene	EPA TO-15	AE	x	Y	
NY	1,3-Butadiene	EPA TO-15	AE	x	Y	
NY	1,3-Dichlorobenzene	EPA TO-15	AE	x	Y	
NY	1,4-Dichlorobenzene	EPA TO-15	AE	x	Y	
NY	1,4-Dioxane	EPA TO-15	AE	x	Y	
NY	2,2,4-Trimethylpentane	EPA TO-15	AE	x	Y	
NY	2-Butanone	EPA TO-15	AE	x	Y	
NY	2-Chlorotoluene	EPA TO-15	AE	x	Y	
NY	3-Chloropropene	EPA TO-15	AE	x	Y	
NY	4-Methyl-2-Pentanone	EPA TO-15	AE	x	Y	
NY	Acetaldehyde	EPA TO-15	AE	x	Y	
NY	Acetone	EPA TO-15	AE	x	Y	
NY	Acetonitrile	EPA TO-15	AE	x	Y	
NY	Acrolein	EPA TO-15	AE	x	Y	
NY	Acrylonitrile	EPA TO-15	AE	x	Y	
NY	Benzene	EPA TO-15	AE	x	Y	
NY	Benzyl Chloride	EPA TO-15	AE	x	Y	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Bromodichloromethane	EPA TO-15	AE	x	Y	
NY	Bromoform	EPA TO-15	AE	x	Y	
NY	Bromomethane	EPA TO-15	AE	x	Y	
NY	Carbon Disulfide	EPA TO-15	AE	x	Y	
NY	Carbon Tetrachloride	EPA TO-15	AE	x	Y	
NY	Chlorobenzene	EPA TO-15	AE	x	Y	
NY	Chloroethane	EPA TO-15	AE	x	Y	
NY	Chloroform	EPA TO-15	AE	x	Y	
NY	Chloromethane	EPA TO-15	AE	x	Y	
NY	cis-1,2-Dichloroethene	EPA TO-15	AE	x	Y	
NY	cis-1,3-Dichloropropene	EPA TO-15	AE	x	Y	
NY	Cyclohexane	EPA TO-15	AE	x	Y	
NY	Dibromochloromethane	EPA TO-15	AE	x	Y	
NY	Dichlorodifluoromethane	EPA TO-15	AE	x	Y	
NY	Ethylbenzene	EPA TO-15	AE	x	Y	
NY	Hexachlorobutadiene	EPA TO-15	AE	x	Y	
NY	Isopropyl Alcohol	EPA TO-15	AE	x	Y	
NY	Isopropylbenzene	EPA TO-15	AE	x	Y	
NY	m+p-Xylene	EPA TO-15	AE	x	Y	
NY	Methyl Alcohol (methanol)	EPA TO-15	AE	x	Y	
NY	Methyl Methacrylate	EPA TO-15	AE	x	Y	
NY	Methyl tert-butyl ether	EPA TO-15	AE	x	Y	
NY	Methylene Chloride	EPA TO-15	AE	x	Y	
NY	Naphthalene	EPA TO-15	AE	x	Y	
NY	n-Heptane	EPA TO-15	AE	x	Y	
NY	n-Hexane	EPA TO-15	AE	x	Y	
NY	o-Xylene	EPA TO-15	AE	x	Y	
NY	Styrene	EPA TO-15	AE	x	Y	
NY	Tert-Butyl Alcohol	EPA TO-15	AE	x	Y	
NY	Tetrachloroethene	EPA TO-15	AE	x	Y	
NY	Toluene	EPA TO-15	AE	x	Y	
NY	Total Xylenes	EPA TO-15	AE	x	Y	
NY	Trans-1,2-Dichloroethene	EPA TO-15	AE	x	Y	
NY	Trans-1,3-Dichloropropene	EPA TO-15	AE	x	Y	
NY	Trichloroethene	EPA TO-15	AE	x	Y	
NY	Trichlorofluoromethane	EPA TO-15	AE	x	Y	
NY	Vinyl acetate	EPA TO-15	AE	x	Y	
NY	Vinyl Bromide	EPA TO-15	AE	x	Y	
NY	Vinyl Chloride	EPA TO-15	AE	x	Y	
NY	Turbidity	EPA 180.1	DW	Y	x	
NY	Aluminum	EPA 200.7	DW	x	Y	
NY	Barium	EPA 200.7	DW	x	Y	
NY	Beryllium	EPA 200.7	DW	x	Y	
Ny	Boron	EPA 200.7	DW	x	Y	
NY	Cadmium	EPA 200.7	DW	x	Y	
NY	Calcium	EPA 200.7	DW	x	Y	
NY	Calcium Hardness	EPA 200.7	DW	x	Y	
NY	Chromium	EPA 200.7	DW	x	Y	
NY	Copper	EPA 200.7	DW	x	Y	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Iron	EPA 200.7	DW	x	Y	
NY	Magnesium	EPA 200.7	DW	x	Y	
NY	Manganese	EPA 200.7	DW	x	Y	
NY	Nickel	EPA 200.7	DW	x	Y	
NY	Potassium	EPA 200.7	DW	x	Y	
NY	Silver	EPA 200.7	DW	x	Y	
NY	Sodium	EPA 200.7	DW	x	Y	
Ny	Vanadium	EPA 200.7	DW	x	Y	
NY	Zinc	EPA 200.7	DW	x	Y	
NY	Aluminum	EPA 200.8	DW	x	Y	
NY	Antimony	EPA 200.8	DW	x	Y	
NY	Arsenic	EPA 200.8	DW	x	Y	
NY	Barium	EPA 200.8	DW	x	Y	
NY	Beryllium	EPA 200.8	DW	x	Y	
NY	Cadmium	EPA 200.8	DW	x	Y	
NY	Copper	EPA 200.8	DW	x	Y	
NY	Lead	EPA 200.8	DW	x	Y	
Ny	Manganese	EPA 200.8	DW	x	Y	
NY	Nickel	EPA 200.8	DW	x	Y	
NY	Selenium	EPA 200.8	DW	x	Y	
NY	Silver	EPA 200.8	DW	x	Y	
NY	Thallium	EPA 200.8	DW	x	Y	
NY	Vanadium	EPA 200.8	DW	x	Y	
NY	Zinc	EPA 200.8	DW	x	Y	
NY	Mercury	EPA 245.1	DW	x	Y	
NY	Chloride	EPA 300.0	DW	Y	x	
NY	Fluoride	EPA 300.0	DW	Y	x	
NY	Sulfate	EPA 300.0	DW	Y	x	
NY	Perchlorate	EPA 332.0	DW	Y	x	
NY	1,2-Dibromo-3-Chloropropane (DBCP)	EPA 504.1	DW	Y	x	
NY	1,2-Dibromoethane (EDB)	EPA 504.1	DW	Y	x	
NY	1,1,1,2-Tetrachloroethane	EPA 524.2	DW	Y	x	
NY	1,1,1-Trichloroethane	EPA 524.2	DW	Y	x	
NY	1,1,2,2-Tetrachloroethane	EPA 524.2	DW	Y	x	
NY	1,1,2-Trichloroethane	EPA 524.2	DW	Y	x	
NY	1,1-Dichloroethane	EPA 524.2	DW	Y	x	
NY	1,1-Dichloroethene	EPA 524.2	DW	Y	x	
NY	1,1-Dichloropropene	EPA 524.2	DW	Y	x	
NY	1,2,3-Trichlorobenzene	EPA 524.2	DW	Y	x	
NY	1,2,3-Trichloropropane	EPA 524.2	DW	Y	x	
NY	1,2,4-Trichlorobenzene	EPA 524.2	DW	Y	x	
NY	1,2,4-Trimethylbenzene	EPA 524.2	DW	Y	x	
NY	1,2-Dichlorobenzene	EPA 524.2	DW	Y	x	
NY	1,2-Dichloroethane	EPA 524.2	DW	Y	x	
NY	1,2-Dichloropropane	EPA 524.2	DW	Y	x	
NY	1,3,5-Trimethylbenzene	EPA 524.2	DW	Y	x	
NY	1,3-Dichlorobenzene	EPA 524.2	DW	Y	x	
NY	1,3-Dichloropropane	EPA 524.2	DW	Y	x	
NY	1,4-Dichlorobenzene	EPA 524.2	DW	Y	x	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	2,2-Dichloropropane	EPA 524.2	DW	Y	x	
NY	2-Chlorotoluene	EPA 524.2	DW	Y	x	
NY	4-Chlorotoluene	EPA 524.2	DW	Y	x	
NY	Benzene	EPA 524.2	DW	Y	x	
NY	Bromobenzene	EPA 524.2	DW	Y	x	
NY	Bromochloromethane	EPA 524.2	DW	Y	x	
NY	Bromodichloromethane	EPA 524.2	DW	Y	x	
NY	Bromoform	EPA 524.2	DW	Y	x	
NY	Bromomethane	EPA 524.2	DW	Y	x	
NY	Carbon Tetrachloride	EPA 524.2	DW	Y	x	
NY	Chlorobenzene	EPA 524.2	DW	Y	x	
NY	Chloroethane	EPA 524.2	DW	Y	x	
NY	Chloroform	EPA 524.2	DW	Y	x	
NY	Chloromethane	EPA 524.2	DW	Y	x	
NY	cis-1,2-Dichloroethene	EPA 524.2	DW	Y	x	
NY	cis-1,3-Dichloropropene	EPA 524.2	DW	Y	x	
NY	Dibromochloromethane	EPA 524.2	DW	Y	x	
NY	Dibromomethane	EPA 524.2	DW	Y	x	
NY	Dichlorodifluoromethane	EPA 524.2	DW	Y	x	
NY	Ethylbenzene	EPA 524.2	DW	Y	x	
NY	Hexachlorobutadiene	EPA 524.2	DW	Y	x	
NY	Isopropylbenzene	EPA 524.2	DW	Y	x	
NY	Methyl tert-butyl ether	EPA 524.2	DW	Y	x	
NY	Methylene chloride	EPA 524.2	DW	Y	x	
NY	Naphthalene	EPA 524.2	DW	Y	x	
NY	n-Butylbenzene	EPA 524.2	DW	Y	x	
NY	n-Propylbenzene	EPA 524.2	DW	Y	x	
NY	p-Isopropyltoluene	EPA 524.2	DW	Y	x	
NY	sec-Butylbenzene	EPA 524.2	DW	Y	x	
NY	Styrene	EPA 524.2	DW	Y	x	
NY	Tert-Butylbenzene	EPA 524.2	DW	Y	x	
NY	Tetrachloroethene	EPA 524.2	DW	Y	x	
NY	Toluene	EPA 524.2	DW	Y	x	
NY	Total Trihalomethanes	EPA 524.2	DW	Y	x	
NY	Total Xylenes	EPA 524.2	DW	Y	x	
NY	Trans-1,2-Dichloroethene	EPA 524.2	DW	Y	x	
NY	Trans-1,3-Dichloropropene	EPA 524.2	DW	Y	x	
NY	Trichloroethene	EPA 524.2	DW	Y	x	
NY	Trichlorofluoromethane	EPA 524.2	DW	Y	x	
NY	Vinyl chloride	EPA 524.2	DW	Y	x	
NY	Perfluoro-n-octanoic acid (PFOA)	EPA 537	DW	x	Y	
NY	Perfluorooctanesulfonic acid (PFOS)	EPA 537	DW	x	Y	
NY	Color	SM 2120B	DW	Y	x	
NY	Turbidity	SM 2130B	DW	Y	x	
NY	Odor	SM 2150B	DW	Y	x	
NY	Alkalinity	SM 2320B	DW	Y	x	
NY	Specific Conductance	SM 2510B	DW	Y	x	
NY	Total Dissolved Solids	SM 2540C	DW	Y	x	
NY	Cyanide, Distillation	SM 4500 CN C	DW	Y	x	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Cyanide, Total	SM 4500 CN E	DW	Y	x	
NY	Fluoride	SM 4500 F-C	DW	Y	x	
NY	Nitrate-N	SM 4500 NO3-F	DW	Y	x	
NY	Nitrite-N	SM 4500 NO3-F	DW	Y	x	
NY	Total Organic Carbon	SM 5310C	DW	Y	x	
NY	Heterotrophic Plate Count	SM 9215B	DW	Y	x	
NY	Coliform, Total	SM 9223B	DW	Y	x	
NY	E. Coli	SM 9223B	DW	Y	x	P/A
NY	E. Coli	SM 9223B	DW	Y	x	Enumeration
NY	Specific Conductance	EPA 120.1	NPW	Y	x	
NY	Mercury	EPA 1631E	NPW	x	Y	
NY	Oil & Grease	EPA 1664A	NPW	Y	x	
NY	Oil & Grease (TPH)	EPA 1664A	NPW	Y	x	
NY	Turbidity	EPA 180.1	NPW	Y	x	
NY	Aluminum	EPA 200.7	NPW	x	Y	
NY	Antimony	EPA 200.7	NPW	x	Y	
NY	Arsenic	EPA 200.7	NPW	x	Y	
NY	Barium	EPA 200.7	NPW	x	Y	
NY	Beryllium	EPA 200.7	NPW	x	Y	
NY	Boron	EPA 200.7	NPW	x	Y	
NY	Cadmium	EPA 200.7	NPW	x	Y	
NY	Calcium	EPA 200.7	NPW	x	Y	
NY	Chromium	EPA 200.7	NPW	x	Y	
NY	Cobalt	EPA 200.7	NPW	x	Y	
NY	Copper	EPA 200.7	NPW	x	Y	
NY	Iron	EPA 200.7	NPW	x	Y	
NY	Lead	EPA 200.7	NPW	x	Y	
NY	Magnesium	EPA 200.7	NPW	x	Y	
NY	Manganese	EPA 200.7	NPW	x	Y	
NY	Molybdenum	EPA 200.7	NPW	x	Y	
NY	Nickel	EPA 200.7	NPW	x	Y	
NY	Potassium	EPA 200.7	NPW	x	Y	
NY	Selenium	EPA 200.7	NPW	x	Y	
NY	Silica, Dissolved	EPA 200.7	NPW	x	Y	
NY	Silver	EPA 200.7	NPW	x	Y	
NY	Sodium	EPA 200.7	NPW	x	Y	
NY	Strontium	EPA 200.7	NPW	x	Y	
NY	Thallium	EPA 200.7	NPW	x	Y	
NY	Tin	EPA 200.7	NPW	x	Y	
NY	Titanium	EPA 200.7	NPW	x	Y	
NY	Total Hardness (CaCO3)	EPA 200.7	NPW	x	Y	
NY	Vanadium	EPA 200.7	NPW	x	Y	
NY	Zinc	EPA 200.7	NPW	x	Y	
NY	Aluminum	EPA 200.8	NPW	x	Y	
NY	Antimony	EPA 200.8	NPW	x	Y	
NY	Arsenic	EPA 200.8	NPW	x	Y	
NY	Barium	EPA 200.8	NPW	x	Y	
NY	Beryllium	EPA 200.8	NPW	x	Y	
NY	Cadmium	EPA 200.8	NPW	x	Y	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Chromium	EPA 200.8	NPW	x	Y	
NY	Cobalt	EPA 200.8	NPW	x	Y	
NY	Copper	EPA 200.8	NPW	x	Y	
NY	Lead	EPA 200.8	NPW	x	Y	
NY	Manganese	EPA 200.8	NPW	x	Y	
NY	Molybdenum	EPA 200.8	NPW	x	Y	
NY	Nickel	EPA 200.8	NPW	x	Y	
NY	Selenium	EPA 200.8	NPW	x	Y	
NY	Silver	EPA 200.8	NPW	x	Y	
NY	Thallium	EPA 200.8	NPW	x	Y	
NY	Vanadium	EPA 200.8	NPW	x	Y	
NY	Zinc	EPA 200.8	NPW	x	Y	
NY	Mercury	EPA 245.1	NPW	x	Y	
NY	Bromide	EPA 300.0	NPW	Y	x	
NY	Chloride	EPA 300.0	NPW	Y	x	
NY	Fluoride	EPA 300.0	NPW	Y	x	
NY	Nitrate-N	EPA 300.0	NPW	Y	x	
NY	Sulfate	EPA 300.0	NPW	Y	x	
NY	Acid Digestion of Waters	EPA 3005A	NPW	x	Y	
NY	Microwave Acid Digestion	EPA 3015A	NPW	x	Y	
NY	Acid Digestion of Waters	EPA 3020A	NPW	x	Y	
NY	Ammonia	EPA 350.1	NPW	Y	x	
NY	Nitrogen, Total Kjeldahl	EPA 351.1	NPW	Y	x	
NY	Separatory Funnel Extraction	EPA 3510C	NPW	Y	Y	
NY	Nitrate-N	EPA 353.2	NPW	Y	x	
NY	Nitrate-Nitrite	EPA 353.2	NPW	Y	x	
NY	Chemical Oxygen Demand	EPA 410.4	NPW	Y	x	
NY	Total Phenolics	EPA 420.1	NPW	Y	x	
NY	Purge & Trap Aqueous	EPA 5030C	NPW	Y	x	
NY	Aluminum	EPA 6010C	NPW	x	Y	
NY	Antimony	EPA 6010C	NPW	x	Y	
NY	Arsenic	EPA 6010C	NPW	x	Y	
NY	Barium	EPA 6010C	NPW	x	Y	
NY	Beryllium	EPA 6010C	NPW	x	Y	
NY	Boron	EPA 6010C	NPW	x	Y	
NY	Cadmium	EPA 6010C	NPW	x	Y	
NY	Calcium	EPA 6010C	NPW	x	Y	
NY	Chromium	EPA 6010C	NPW	x	Y	
NY	Cobalt	EPA 6010C	NPW	x	Y	
NY	Copper	EPA 6010C	NPW	x	Y	
NY	Iron	EPA 6010C	NPW	x	Y	
NY	Lead	EPA 6010C	NPW	x	Y	
NY	Magnesium	EPA 6010C	NPW	x	Y	
NY	Manganese	EPA 6010C	NPW	x	Y	
NY	Molybdenum	EPA 6010C	NPW	x	Y	
NY	Nickel	EPA 6010C	NPW	x	Y	
NY	Potassium	EPA 6010C	NPW	x	Y	
NY	Selenium	EPA 6010C	NPW	x	Y	
NY	Silver	EPA 6010C	NPW	x	Y	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Sodium	EPA 6010C	NPW	x	Y	
NY	Strontium	EPA 6010C	NPW	x	Y	
NY	Thallium	EPA 6010C	NPW	x	Y	
NY	Tin	EPA 6010C	NPW	x	Y	
NY	Vanadium	EPA 6010C	NPW	x	Y	
NY	Zinc	EPA 6010C	NPW	x	Y	
NY	Aluminum	EPA 6020A	NPW	x	Y	
NY	Antimony	EPA 6020A	NPW	x	Y	
NY	Arsenic	EPA 6020A	NPW	x	Y	
NY	Barium	EPA 6020A	NPW	x	Y	
NY	Beryllium	EPA 6020A	NPW	x	Y	
NY	Boron	EPA 6020A	NPW	x	Y	
NY	Cadmium	EPA 6020A	NPW	x	Y	
NY	Calcium	EPA 6020A	NPW	x	Y	
NY	Chromium	EPA 6020A	NPW	x	Y	
NY	Cobalt	EPA 6020A	NPW	x	Y	
NY	Copper	EPA 6020A	NPW	x	Y	
NY	Iron	EPA 6020A	NPW	x	Y	
NY	Lead	EPA 6020A	NPW	x	Y	
NY	Magnesium	EPA 6020A	NPW	x	Y	
NY	Manganese	EPA 6020A	NPW	x	Y	
NY	Molybdenum	EPA 6020A	NPW	x	Y	
NY	Nickel	EPA 6020A	NPW	x	Y	
NY	Potassium	EPA 6020A	NPW	x	Y	
NY	Selenium	EPA 6020A	NPW	x	Y	
NY	Silver	EPA 6020A	NPW	x	Y	
NY	Strontium	EPA 6020A	NPW	x	Y	
NY	Thallium	EPA 6020A	NPW	x	Y	
NY	Tin	EPA 6020A	NPW	x	Y	
NY	Titanium	EPA 6020A	NPW	x	Y	
NY	Vanadium	EPA 6020A	NPW	x	Y	
NY	Zinc	EPA 6020A	NPW	x	Y	
NY	4,4'-DDD	EPA 608	NPW	Y	x	
NY	4,4'-DDE	EPA 608	NPW	Y	x	
NY	4,4'-DDT	EPA 608	NPW	Y	x	
NY	Aldrin	EPA 608	NPW	Y	x	
NY	Alpha-BHC	EPA 608	NPW	Y	x	
NY	Beta-BHC	EPA 608	NPW	Y	x	
NY	Chlordane	EPA 608	NPW	Y	x	
NY	Delta-BHC	EPA 608	NPW	Y	x	
NY	Dieldrin	EPA 608	NPW	Y	x	
NY	Endosulfan I	EPA 608	NPW	Y	x	
NY	Endosulfan II	EPA 608	NPW	Y	x	
NY	Endosulfan Sulfate	EPA 608	NPW	Y	x	
NY	Endrin	EPA 608	NPW	Y	x	
NY	Endrin Aldehyde	EPA 608	NPW	Y	x	
NY	Heptachlor	EPA 608	NPW	Y	x	
NY	Heptachlor Epoxide	EPA 608	NPW	Y	x	
NY	Lindane (gamma-BHC)	EPA 608	NPW	Y	x	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Methoxychlor	EPA 608	NPW	Y	x	
NY	PCB-1016	EPA 608	NPW	Y	x	
NY	PCB-1221	EPA 608	NPW	Y	x	
NY	PCB-1232	EPA 608	NPW	Y	x	
NY	PCB-1242	EPA 608	NPW	Y	x	
NY	PCB-1248	EPA 608	NPW	Y	x	
NY	PCB-1254	EPA 608	NPW	Y	x	
NY	PCB-1260	EPA 608	NPW	Y	x	
NY	Toxaphene	EPA 608	NPW	Y	x	
NY	1,1,1-Trichloroethane	EPA 624	NPW	Y	x	
NY	1,1,2,2-Tetrachloroethane	EPA 624	NPW	Y	x	
NY	1,1,2-Trichloroethane	EPA 624	NPW	Y	x	
NY	1,1-Dichloroethane	EPA 624	NPW	Y	x	
NY	1,1-Dichloroethene	EPA 624	NPW	Y	x	
NY	1,2-Dichlorobenzene	EPA 624	NPW	Y	x	
NY	1,2-Dichloroethane	EPA 624	NPW	Y	x	
NY	1,2-Dichloropropane	EPA 624	NPW	Y	x	
NY	1,3-Dichlorobenzene	EPA 624	NPW	Y	x	
NY	1,4-Dichlorobenzene	EPA 624	NPW	Y	x	
NY	2-Chloroethyl Vinyl ether	EPA 624	NPW	Y	x	
NY	Acetone	EPA 624	NPW	Y	x	
NY	Acrolein	EPA 624	NPW	Y	x	
NY	Acrylonitrile	EPA 624	NPW	Y	x	
NY	Benzene	EPA 624	NPW	Y	x	
NY	Bromodichloromethane	EPA 624	NPW	Y	x	
NY	Bromoform	EPA 624	NPW	Y	x	
NY	Bromomethane	EPA 624	NPW	Y	x	
NY	Carbon Tetrachloride	EPA 624	NPW	Y	x	
NY	Chlorobenzene	EPA 624	NPW	Y	x	
NY	Chloroethane	EPA 624	NPW	Y	x	
NY	Chloroform	EPA 624	NPW	Y	x	
NY	Chloromethane	EPA 624	NPW	Y	x	
NY	cis-1,2-Dichloroethene	EPA 624	NPW	Y	x	
NY	cis-1,3-Dichloropropene	EPA 624	NPW	Y	x	
NY	Dibromochloromethane	EPA 624	NPW	Y	x	
NY	Dichlorodifluoromethane	EPA 624	NPW	Y	x	
NY	Ethylbenzene	EPA 624	NPW	Y	x	
NY	Methylene Chloride	EPA 624	NPW	Y	x	
NY	Methyl tert-butyl ether	EPA 624	NPW	Y	x	
NY	Styrene	EPA 624	NPW	Y	x	
NY	Tert-Butyl Alcohol	EPA 624	NPW	Y	x	
NY	Tetrachloroethene	EPA 624	NPW	Y	x	
NY	Toluene	EPA 624	NPW	Y	x	
NY	Total Xylenes	EPA 624	NPW	Y	x	
NY	Trans-1,2-Dichloroethene	EPA 624	NPW	Y	x	
NY	Trans-1,3-Dichloropropene	EPA 624	NPW	Y	x	
NY	Trichloroethene	EPA 624	NPW	Y	x	
NY	Trichlorofluoromethane	EPA 624	NPW	Y	x	
NY	Vinyl Acetate	EPA 624	NPW	Y	x	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Vinyl Chloride	EPA 624	NPW	Y	x	
NY	1,2,4-Trichlorobenzene	EPA 625	NPW	Y	x	
NY	2,4,5-Trichlorophenol	EPA 625	NPW	Y	x	
NY	2,4,6-Trichlorophenol	EPA 625	NPW	Y	x	
NY	2,4-Dichlorophenol	EPA 625	NPW	Y	x	
NY	2,4-Dimethylphenol	EPA 625	NPW	Y	x	
NY	2,4-Dinitrophenol	EPA 625	NPW	Y	x	
NY	2,4-Dinitrotoluene (2,4-DNT)	EPA 625	NPW	Y	x	
NY	2,6-Dinitrotoluene (2,6-DNT)	EPA 625	NPW	Y	x	
NY	2-Chloronaphthalene	EPA 625	NPW	Y	x	
NY	2-Chlorophenol	EPA 625	NPW	Y	x	
NY	2-Methyl-4,6-dinitrophenol	EPA 625	NPW	Y	x	
NY	2-Methylphenol	EPA 625	NPW	Y	x	
NY	2-Nitrophenol	EPA 625	NPW	Y	x	
NY	3,3-Dichlorobenzidine	EPA 625	NPW	Y	x	
NY	3-Methylphenol	EPA 625	NPW	Y	x	
NY	4-Bromophenyl phenyl ether	EPA 625	NPW	Y	x	
NY	4-Chloro-3-methylphenol	EPA 625	NPW	Y	x	
NY	4-Chlorophenyl phenyl ether	EPA 625	NPW	Y	x	
NY	4-Methylphenol	EPA 625	NPW	Y	x	
NY	4-Nitrophenol	EPA 625	NPW	Y	x	
NY	Acenaphthene	EPA 625	NPW	Y	x	
NY	Acenaphthylene	EPA 625	NPW	Y	x	
NY	Acetophenone	EPA 625	NPW	Y	x	
NY	Aniline	EPA 625	NPW	Y	x	
NY	Anthracene	EPA 625	NPW	Y	x	
NY	Benzidine	EPA 625	NPW	Y	x	
NY	Benzo(a)anthracene	EPA 625	NPW	Y	x	
NY	Benzo(a)pyrene	EPA 625	NPW	Y	x	
NY	Benzo(b)fluoranthene	EPA 625	NPW	Y	x	
NY	Benzo(ghi)perylene	EPA 625	NPW	Y	x	
NY	Benzo(k)fluoranthene	EPA 625	NPW	Y	x	
NY	Bis(2-chloroethoxy) methane	EPA 625	NPW	Y	x	
NY	Bis(2-chloroethyl) ether	EPA 625	NPW	Y	x	
NY	Bis(2-chloroisopropyl) ether	EPA 625	NPW	Y	x	
NY	Bis(2-ethylhexyl) phthalate	EPA 625	NPW	Y	x	
NY	Butyl Benzyl phthalate	EPA 625	NPW	Y	x	
NY	Carbazole	EPA 625	NPW	Y	x	
NY	Chrysene	EPA 625	NPW	Y	x	
NY	Dibenzo(a,h)anthracene	EPA 625	NPW	Y	x	
NY	Diethyl phthalate	EPA 625	NPW	Y	x	
NY	Dimethyl phthalate	EPA 625	NPW	Y	x	
NY	Di-n-butyl phthalate	EPA 625	NPW	Y	x	
NY	Di-n-octyl phthalate	EPA 625	NPW	Y	x	
NY	Fluoranthene	EPA 625	NPW	Y	x	
NY	Fluorene	EPA 625	NPW	Y	x	
NY	Hexachlorobenzene	EPA 625	NPW	Y	x	
NY	Hexachlorobutadiene	EPA 625	NPW	Y	x	
NY	Hexachlorocyclopentadiene	EPA 625	NPW	Y	x	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Hexachloroethane	EPA 625	NPW	Y	x	
NY	Indeno(1,2,3-cd)pyrene	EPA 625	NPW	Y	x	
NY	Isophorone	EPA 625	NPW	Y	x	
NY	Naphthalene	EPA 625	NPW	Y	x	
NY	N-Decane	EPA 625	NPW	Y	x	
NY	Nitrobenzene	EPA 625	NPW	Y	x	
NY	N-Nitrosodimethylamine	EPA 625	NPW	Y	x	
NY	N-Nitrosodi-n-propylamine	EPA 625	NPW	Y	x	
NY	N-Nitrosodiphenylamine	EPA 625	NPW	Y	x	
NY	N-Octadecane	EPA 625	NPW	Y	x	
NY	Pentachlorophenol	EPA 625	NPW	Y	x	
NY	Phenanthrene	EPA 625	NPW	Y	x	
NY	Phenol	EPA 625	NPW	Y	x	
NY	Pyrene	EPA 625	NPW	Y	x	
NY	Pyridine	EPA 625	NPW	Y	x	
NY	Chromium VI	EPA 7196A	NPW	Y	x	
NY	Mercury	EPA 7470A	NPW	x	Y	
NY	1,2-Dibromoethane (EDB)	EPA 8011	NPW	Y	x	
NY	1,2-Dibromo-3-Chloropropane (DBCP)	EPA 8011	NPW	Y	x	
NY	Diesel Range Organics	EPA 8015C	NPW	Y	x	
NY	Gasoline Range Organics	EPA 8015C	NPW	Y	x	
NY	Amyl alcohol	EPA 8015D	NPW	x	Y	
NY	Diesel Range Organics	EPA 8015D	NPW	x	Y	
NY	Ethyl alcohol	EPA 8015D	NPW	x	Y	
NY	Ethylene glycol	EPA 8015D	NPW	x	Y	
NY	Gasoline Range Organics	EPA 8015D	NPW	x	Y	
NY	Iso-butyl Alcohol	EPA 8015D	NPW	x	Y	
NY	Methyl Alcohol (methanol)	EPA 8015D	NPW	x	Y	
NY	Tert-Butyl Alcohol	EPA 8015D	NPW	x	Y	
NY	4,4'-DDD	EPA 8081B	NPW	Y	Y	
NY	4,4'-DDE	EPA 8081B	NPW	Y	Y	
NY	4,4'-DDT	EPA 8081B	NPW	Y	Y	
NY	Aldrin	EPA 8081B	NPW	Y	Y	
NY	alpha-BHC	EPA 8081B	NPW	Y	Y	
NY	alpha-Chlordane	EPA 8081B	NPW	Y	Y	
NY	beta-BHC	EPA 8081B	NPW	Y	Y	
NY	Chlordane	EPA 8081B	NPW	Y	Y	
NY	delta-BHC	EPA 8081B	NPW	Y	Y	
NY	Dieldrin	EPA 8081B	NPW	Y	Y	
NY	Endosulfan I	EPA 8081B	NPW	Y	Y	
NY	Endosulfan II	EPA 8081B	NPW	Y	Y	
NY	Endosulfan Sulfate	EPA 8081B	NPW	Y	Y	
NY	Endrin	EPA 8081B	NPW	Y	Y	
NY	Endrin Aldehyde	EPA 8081B	NPW	Y	Y	
NY	Endrin Ketone	EPA 8081B	NPW	Y	Y	
NY	gamma-Chlordane	EPA 8081B	NPW	Y	Y	
NY	Heptachlor	EPA 8081B	NPW	Y	Y	
NY	Heptachlor Epoxide	EPA 8081B	NPW	Y	Y	
NY	Hexachlorobenzene	EPA 8081B	NPW	x	Y	

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Lindane (gamma-BHC)	EPA 8081B	NPW	Y	Y	
NY	Methoxychlor	EPA 8081B	NPW	Y	Y	
NY	Mirex	EPA 8081B	NPW	x	Y	
NY	Toxaphene	EPA 8081B	NPW	Y	Y	
NY	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (PCB	EPA 8082A	NPW	x	Y	
NY	2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170)	EPA 8082A	NPW	x	Y	
NY	2,2',3,3',4,4'-Hexachlorobiphenyl (PCB 128)	EPA 8082A	NPW	x	Y	
NY	2,2',3,4,4',5'-Hexachlorobiphenyl (PCB 138)	EPA 8082A	NPW	x	Y	
NY	2,2',3,5'-Tetrachlorobiphenyl (PCB 44)	EPA 8082A	NPW	x	Y	
NY	2,2',5,5'-Tetrachlorobiphenyl (PCB 52)	EPA 8082A	NPW	x	Y	
NY	2,2',5-Trichlorobiphenyl (PCB 18)	EPA 8082A	NPW	x	Y	
NY	2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	EPA 8082A	NPW	x	Y	
NY	2,3',4,4'-Tetrachlorobiphenyl (PCB 66)	EPA 8082A	NPW	x	Y	
NY	PCB-1016	EPA 8082A	NPW	Y	Y	
NY	PCB-1221	EPA 8082A	NPW	Y	Y	
NY	PCB-1232	EPA 8082A	NPW	Y	Y	
NY	PCB-1242	EPA 8082A	NPW	Y	Y	
NY	PCB-1248	EPA 8082A	NPW	Y	Y	
NY	PCB-1254	EPA 8082A	NPW	Y	Y	
NY	PCB-1260	EPA 8082A	NPW	Y	Y	
NY	PCB-1262	EPA 8082A	NPW	Y	Y	
NY	PCB-1268	EPA 8082A	NPW	Y	Y	
NY	2,4,5-T	EPA 8151A	NPW	Y	x	
NY	2,4,5-TP (Silvex)	EPA 8151A	NPW	Y	x	
NY	2,4-D	EPA 8151A	NPW	Y	x	
NY	2,4-DB	EPA 8151A	NPW	Y	x	
NY	Dalapon	EPA 8151A	NPW	Y	x	
NY	Dicamba	EPA 8151A	NPW	Y	x	
NY	Dichloroprop	EPA 8151A	NPW	Y	x	
NY	Dinoseb	EPA 8151A	NPW	Y	x	
NY	1,1,1,2-Tetrachloroethane	EPA 8260C	NPW	Y	x	
NY	1,1,1-Trichloroethane	EPA 8260C	NPW	Y	x	
NY	1,1,2,2-Tetrachloroethane	EPA 8260C	NPW	Y	x	
NY	1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C	NPW	Y	x	
NY	1,1,2-Trichloroethane	EPA 8260C	NPW	Y	x	
NY	1,1-Dichloroethane	EPA 8260C	NPW	Y	x	
NY	1,1-Dichloroethene	EPA 8260C	NPW	Y	x	
NY	1,1-Dichloropropene	EPA 8260C	NPW	Y	x	
NY	1,2,3-Trichlorobenzene	EPA 8260C	NPW	Y	x	
NY	1,2,3-Trichloropropane	EPA 8260C	NPW	Y	x	
NY	1,2,4-Trichlorobenzene	EPA 8260C	NPW	Y	x	
NY	1,2,4-Trimethylbenzene	EPA 8260C	NPW	Y	x	
NY	1,2-Dibromo-3-Chloropropane (DBCP)	EPA 8260C	NPW	Y	x	
NY	1,2-Dibromoethane (EDB)	EPA 8260C	NPW	Y	x	
NY	1,2-Dichlorobenzene	EPA 8260C	NPW	Y	x	
NY	1,2-Dichloroethane	EPA 8260C	NPW	Y	x	
NY	1,2-Dichloropropane	EPA 8260C	NPW	Y	x	
NY	1,3,5-Trimethylbenzene	EPA 8260C	NPW	Y	x	
NY	1,3-Dichlorobenzene	EPA 8260C	NPW	Y	x	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	1,3-Dichloropropane	EPA 8260C	NPW	Y	x	
NY	1,4-Dichlorobenzene	EPA 8260C	NPW	Y	x	
NY	1,4-Dioxane	EPA 8260C	NPW	Y	x	
NY	1-Butanol	EPA 8260C	NPW	Y	x	
NY	2,2-Dichloropropane	EPA 8260C	NPW	Y	x	
NY	2-Butanone	EPA 8260C	NPW	Y	x	
NY	2-Chloroethyl Vinyl ether	EPA 8260C	NPW	Y	x	
NY	2-Chlorotoluene	EPA 8260C	NPW	Y	x	
NY	2-Hexanone	EPA 8260C	NPW	Y	x	
NY	4-Chlorotoluene	EPA 8260C	NPW	Y	x	
NY	4-Methyl-2-Pentanone	EPA 8260C	NPW	Y	x	
NY	Acetone	EPA 8260C	NPW	Y	x	
NY	Acrolein	EPA 8260C	NPW	Y	x	
NY	Acrylonitrile	EPA 8260C	NPW	Y	x	
NY	Benzene	EPA 8260C	NPW	Y	x	
NY	Bromobenzene	EPA 8260C	NPW	Y	x	
NY	Bromochloromethane	EPA 8260C	NPW	Y	x	
NY	Bromodichloromethane	EPA 8260C	NPW	Y	x	
NY	Bromoform	EPA 8260C	NPW	Y	x	
NY	Bromomethane	EPA 8260C	NPW	Y	x	
NY	Carbon Disulfide	EPA 8260C	NPW	Y	x	
NY	Carbon Tetrachloride	EPA 8260C	NPW	Y	x	
NY	Chlorobenzene	EPA 8260C	NPW	Y	x	
NY	Chloroethane	EPA 8260C	NPW	Y	x	
NY	Chloroform	EPA 8260C	NPW	Y	x	
NY	Chloromethane	EPA 8260C	NPW	Y	x	
NY	cis-1,2-Dichloroethene	EPA 8260C	NPW	Y	x	
NY	cis-1,3-Dichloropropene	EPA 8260C	NPW	Y	x	
NY	Cyclohexane	EPA 8260C	NPW	Y	x	
NY	Dibromochloromethane	EPA 8260C	NPW	Y	x	
NY	Dibromomethane	EPA 8260C	NPW	Y	x	
NY	Dichlorodifluoromethane	EPA 8260C	NPW	Y	x	
NY	Diethyl ether	EPA 8260C	NPW	Y	x	
NY	Diisopropyl ether	EPA 8260C	NPW	Y	x	
NY	Ethanol	EPA 8260C	NPW	Y	x	
NY	Ethyl acetate	EPA 8260C	NPW	Y	x	
NY	Ethyl Methacrylate	EPA 8260C	NPW	Y	x	
NY	Ethylbenzene	EPA 8260C	NPW	Y	x	
NY	Hexachlorobutadiene	EPA 8260C	NPW	Y	x	
NY	Isopropyl Alcohol	EPA 8260C	NPW	Y	x	
NY	Isopropylbenzene	EPA 8260C	NPW	Y	x	
NY	m+p-Xylene	EPA 8260C	NPW	Y	x	
NY	Methyl Acetate	EPA 8260C	NPW	Y	x	
NY	Methyl Cyclohexane	EPA 8260C	NPW	Y	x	
NY	Iodomethane (Methyl Iodide)	EPA 8260C	NPW	Y	x	
NY	Methyl Methacrylate	EPA 8260C	NPW	Y	x	
NY	Methyl tert-butyl ether	EPA 8260C	NPW	Y	x	
NY	Methylene Chloride	EPA 8260C	NPW	Y	x	
NY	Naphthalene	EPA 8260C	NPW	Y	x	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	n-Butylbenzene	EPA 8260C	NPW	Y	x	
NY	n-Propylbenzene	EPA 8260C	NPW	Y	x	
NY	o-Xylene	EPA 8260C	NPW	Y	x	
NY	p-Isopropyltoluene	EPA 8260C	NPW	Y	x	
NY	sec-Butylbenzene	EPA 8260C	NPW	Y	x	
NY	Styrene	EPA 8260C	NPW	Y	x	
NY	Tert-Amyl Methyl Ether (TAME)	EPA 8260C	NPW	Y	x	
NY	Tert-Butyl Alcohol	EPA 8260C	NPW	Y	x	
NY	tert-butyl Ethyl Ether	EPA 8260C	NPW	Y	x	
NY	Tert-Butylbenzene	EPA 8260C	NPW	Y	x	
NY	Tetrachloroethene	EPA 8260C	NPW	Y	x	
NY	Tetrahydrofuran	EPA 8260C	NPW	Y	x	
NY	Toluene	EPA 8260C	NPW	Y	x	
NY	Total Xylenes	EPA 8260C	NPW	Y	x	
NY	Trans-1,2-Dichloroethene	EPA 8260C	NPW	Y	x	
NY	Trans-1,3-Dichloropropene	EPA 8260C	NPW	Y	x	
NY	Trans-1,4-Dichloro-2-butene	EPA 8260C	NPW	Y	x	
NY	Trichloroethene	EPA 8260C	NPW	Y	x	
NY	Trichlorofluoromethane	EPA 8260C	NPW	Y	x	
NY	Vinyl acetate	EPA 8260C	NPW	Y	x	
NY	Vinyl Chloride	EPA 8260C	NPW	Y	x	
NY	1,1'-Biphenyl	EPA 8270D	NPW	x	Y	
NY	1,2,4,5-Tetrachlorobenzene	EPA 8270D	NPW	Y	Y	
NY	1,2,4-Trichlorobenzene	EPA 8270D	NPW	Y	Y	
NY	1,2-Dichlorobenzene	EPA 8270D	NPW	Y	Y	
NY	1,2-Diphenylhydrazine	EPA 8270D	NPW	Y	Y	
NY	1,3-Dichlorobenzene	EPA 8270D	NPW	Y	Y	
NY	1,4-Dichlorobenzene	EPA 8270D	NPW	Y	Y	
NY	1,4-Dioxane	EPA 8270D	NPW	x	Y	
NY	2,3,4,6-Tetrachlorophenol	EPA 8270D	NPW	Y	Y	
NY	2,4,5-Trichlorophenol	EPA 8270D	NPW	Y	Y	
NY	2,4,6-Trichlorophenol	EPA 8270D	NPW	Y	Y	
NY	2,4-Dichlorophenol	EPA 8270D	NPW	Y	Y	
NY	2,4-Dimethylphenol	EPA 8270D	NPW	Y	Y	
NY	2,4-Dinitrophenol	EPA 8270D	NPW	Y	Y	
NY	2,4-Dinitrotoluene (2,4-DNT)	EPA 8270D	NPW	Y	Y	
NY	2,6-Dinitrotoluene (2,6-DNT)	EPA 8270D	NPW	Y	Y	
NY	2-Chloronaphthalene	EPA 8270D	NPW	Y	Y	
NY	2-Chlorophenol	EPA 8270D	NPW	Y	Y	
NY	2-Methyl-4,6-dinitrophenol	EPA 8270D	NPW	Y	Y	
NY	2-Methylnaphthalene	EPA 8270D	NPW	Y	Y	
NY	2-Methylphenol	EPA 8270D	NPW	Y	Y	
NY	2-Nitroaniline	EPA 8270D	NPW	Y	Y	
NY	2-Nitrophenol	EPA 8270D	NPW	Y	Y	
NY	3,3-Dichlorobenzidine	EPA 8270D	NPW	Y	Y	
NY	3-Methylphenol	EPA 8270D	NPW	Y	Y	
NY	3-Nitroaniline	EPA 8270D	NPW	Y	Y	
NY	4-Bromophenyl phenyl ether	EPA 8270D	NPW	Y	Y	
NY	4-Chloro-3-methylphenol	EPA 8270D	NPW	Y	Y	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	4-Chloroaniline	EPA 8270D	NPW	Y	Y	
NY	4-Chlorophenyl phenyl ether	EPA 8270D	NPW	Y	Y	
NY	4-Methylphenol	EPA 8270D	NPW	Y	Y	
NY	4-Nitroaniline	EPA 8270D	NPW	Y	Y	
NY	4-Nitrophenol	EPA 8270D	NPW	Y	Y	
NY	Acenaphthene	EPA 8270D	NPW	Y	Y	
NY	Acenaphthylene	EPA 8270D	NPW	Y	Y	
NY	Acetophenone	EPA 8270D	NPW	Y	x	
NY	Aniline	EPA 8270D	NPW	Y	Y	
NY	Anthracene	EPA 8270D	NPW	Y	Y	
NY	Atrazine	EPA 8270D	NPW	Y	x	
NY	Benzaldehyde	EPA 8270D	NPW	Y	Y	
NY	Benzidine	EPA 8270D	NPW	Y	Y	
NY	Benzo(a)anthracene	EPA 8270D	NPW	Y	Y	
NY	Benzo(a)pyrene	EPA 8270D	NPW	Y	Y	
NY	Benzo(b)fluoranthene	EPA 8270D	NPW	Y	Y	
NY	Benzo(ghi)perylene	EPA 8270D	NPW	Y	Y	
NY	Benzo(k)fluoranthene	EPA 8270D	NPW	Y	Y	
NY	Benzoic Acid	EPA 8270D	NPW	Y	Y	
NY	Benzyl alcohol	EPA 8270D	NPW	Y	Y	
NY	Biphenyl	EPA 8270D	NPW	Y	x	
NY	Bis(2-chloroethoxy) methane	EPA 8270D	NPW	Y	Y	
NY	Bis(2-chloroethyl) ether	EPA 8270D	NPW	Y	Y	
NY	Bis(2-chloroisopropyl) ether	EPA 8270D	NPW	Y	Y	
NY	Bis(2-ethylhexyl) phthalate	EPA 8270D	NPW	Y	Y	
NY	Butyl Benzyl phthalate	EPA 8270D	NPW	Y	Y	
NY	Caprolactam	EPA 8270D	NPW	Y	Y	
NY	Carbazole	EPA 8270D	NPW	Y	Y	
NY	Chrysene	EPA 8270D	NPW	Y	Y	
NY	Cresols, Total	EPA 8270D	NPW	Y	x	
NY	Dibenzo(a,h)anthracene	EPA 8270D	NPW	Y	Y	
NY	Dibenzofuran	EPA 8270D	NPW	Y	Y	
NY	Diethyl phthalate	EPA 8270D	NPW	Y	Y	
NY	Dimethyl phthalate	EPA 8270D	NPW	Y	Y	
NY	Di-n-butyl phthalate	EPA 8270D	NPW	Y	Y	
NY	Di-n-octyl phthalate	EPA 8270D	NPW	Y	Y	
NY	Diphenylamine	EPA 8270D	NPW	Y	x	
NY	Fluoranthene	EPA 8270D	NPW	Y	Y	
NY	Fluorene	EPA 8270D	NPW	Y	Y	
NY	Hexachlorobenzene	EPA 8270D	NPW	Y	Y	
NY	Hexachlorobutadiene	EPA 8270D	NPW	Y	Y	
NY	Hexachlorocyclopentadiene	EPA 8270D	NPW	Y	Y	
NY	Hexachloroethane	EPA 8270D	NPW	Y	Y	
NY	Indeno(1,2,3-cd)pyrene	EPA 8270D	NPW	Y	Y	
NY	Isophorone	EPA 8270D	NPW	Y	x	
NY	Naphthalene	EPA 8270D	NPW	Y	Y	
NY	Nitrobenzene	EPA 8270D	NPW	Y	Y	
NY	N-Nitrosodimethylamine	EPA 8270D	NPW	Y	Y	
NY	N-Nitrosodi-n-propylamine	EPA 8270D	NPW	Y	Y	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	N-Nitrosodiphenylamine	EPA 8270D	NPW	Y	Y	
NY	Parathion	EPA 8270D	NPW	Y	x	
NY	Pentachlorophenol	EPA 8270D	NPW	Y	Y	
NY	Phenanthrene	EPA 8270D	NPW	Y	Y	
NY	Phenol	EPA 8270D	NPW	Y	Y	
NY	Pyrene	EPA 8270D	NPW	Y	Y	
NY	Pyridine	EPA 8270D	NPW	Y	Y	
NY	Thionazin	EPA 8270D	NPW	Y	x	
NY	Acenaphthene	EPA 8270D-SIM	NPW	Y	Y	
NY	Acenaphthylene	EPA 8270D-SIM	NPW	Y	Y	
NY	Anthracene	EPA 8270D-SIM	NPW	Y	Y	
NY	Benzo(a)anthracene	EPA 8270D-SIM	NPW	Y	Y	
NY	Benzo(a)anthracene	EPA 8270D-SIM	NPW	Y	x	
NY	Benzo(a)pyrene	EPA 8270D-SIM	NPW	Y	Y	
NY	Benzo(a)pyrene	EPA 8270D-SIM	NPW	Y	x	
NY	Benzo(b)fluoranthene	EPA 8270D-SIM	NPW	Y	Y	
NY	Benzo(b)fluoranthene	EPA 8270D-SIM	NPW	Y	x	
NY	Benzo(ghi)perylene	EPA 8270D-SIM	NPW	Y	Y	
NY	Benzo(k)fluoranthene	EPA 8270D-SIM	NPW	Y	x	
NY	Benzo(k)fluoranthene	EPA 8270D-SIM	NPW	Y	Y	
NY	Chrysene	EPA 8270D-SIM	NPW	Y	Y	
NY	Dibenzo(a,h)anthracene	EPA 8270D-SIM	NPW	Y	Y	
NY	Dibenzo(a,h)anthracene	EPA 8270D-SIM	NPW	Y	x	
NY	Fluoranthene	EPA 8270D-SIM	NPW	Y	Y	
NY	Fluorene	EPA 8270D-SIM	NPW	Y	Y	
NY	Indeno(1,2,3-cd)pyrene	EPA 8270D-SIM	NPW	Y	Y	
NY	Indeno(1,2,3-cd)pyrene	EPA 8270D-SIM	NPW	Y	x	
NY	Naphthalene	EPA 8270D-SIM	NPW	Y	Y	
NY	Phenanthrene	EPA 8270D-SIM	NPW	Y	Y	
NY	Pyrene	EPA 8270D-SIM	NPW	Y	Y	
NY	Formaldehyde	EPA 8315A	NPW	Y	x	
NY	Cyanide - Amenable, Distillation	EPA 9010C	NPW	Y	x	
NY	Cyanide, Distillation	EPA 9010C	NPW	Y	x	
NY	Total Cyanide	EPA 9012B	NPW	Y	x	
NY	Total Cyanide	EPA 9014	NPW	Y	x	
NY	Sulfide	EPA 9030B	NPW	Y	x	
NY	Phenolics	EPA 9065	NPW	Y	x	
NY	Ethane	EPA RSK-175	NPW	x	Y	
NY	Ethene	EPA RSK-175	NPW	x	Y	
NY	Methane	EPA RSK-175	NPW	x	Y	
NY	Propane	EPA RSK-175	NPW	x	Y	
NY	Nitrogen, Total Kjeldahl	Lachat 10-107-06-2	NPW	Y	x	
NY	Cyanide, Total	Lachat 10-204-00-1-X	NPW	Y	x	
NY	Color	SM 2120B	NPW	Y	x	
NY	Turbidity	SM 2130B	NPW	Y	x	
NY	Acidity	SM 2310B	NPW	Y	x	
NY	Alkalinity	SM 2320B	NPW	Y	x	
NY	Total Hardness (CaCO3)	SM 2340B	NPW	x	Y	
NY	Specific Conductance	SM 2510B	NPW	Y	x	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Total Residue	SM 2540B	NPW	Y	x	
NY	Total Dissolved Solids	SM 2540C	NPW	Y	x	
NY	Total Suspended Solids	SM 2540D	NPW	Y	x	
NY	Volatile Solids	SM 2540E	NPW	Y	x	
NY	Total Settleable Solids	SM 2540F	NPW	Y	x	
NY	Chromium VI	SM 3500 Cr B	NPW	Y	x	
NY	Sulfate	SM 4500 SO4-E	NPW	Y	x	
NY	Chloride	SM 4500 CL-E	NPW	Y	x	
NY	Cyanide, Total	SM 4500 CN E	NPW	Y	x	
NY	Fluoride Preliminary Distillation	SM 4500 F-B	NPW	Y	x	
NY	Fluoride	SM 4500 F-C	NPW	Y	x	
NY	Ammonia	SM 4500 NH3 B	NPW	Y	x	
NY	Ammonia	SM 4500 NH3-H	NPW	Y	x	
NY	Nitrogen, Total Kjeldahl	SM 4500 NH3-H	NPW	Y	x	
NY	Nitrogen, Total Kjeldahl (Distillation)	SM 4500Norg-C	NPW	Y	x	
NY	Nitrite-N	SM 4500 NO2-B	NPW	Y	x	
NY	Nitrate-N	SM 4500 NO3-F	NPW	Y	x	
NY	Nitrate-N	SM 4500 NO3-F	NPW	Y	x	
NY	Nitrate-Nitrite	SM 4500 NO3-F	NPW	Y	x	
NY	Orthophosphate	SM 4500 P-E	NPW	Y	x	
NY	Total Phosphorus (Digestion)	SM 4500 P-B	NPW	Y	x	
NY	Total Phosphorus	SM 4500 P-E	NPW	Y	x	
NY	Sulfide	SM 4500 S2-D	NPW	Y	x	
NY	Sulfate	SM 4500 SO4-E	NPW	Y	x	
NY	Biochemical Oxygen Demand	SM 5210B	NPW	Y	x	
NY	Biochemical Oxygen Demand - Carbonaceous	SM 5210B	NPW	Y	x	
NY	Chemical Oxygen Demand	SM 5220D	NPW	Y	x	
NY	Total Organic Carbon	SM 5310C	NPW	Y	x	
NY	Surfactants (MBAS)	SM 5540C	NPW	Y	x	
NY	Heterotrophic Plate Count	SM 9215B	NPW	Y	x	
NY	Coliform, Total MPN	SM 9221B	NPW	Y	x	
NY	Coliform, Fecal MPN	SM 9221C	NPW	Y	x	
NY	Coliform, Fecal MPN	SM 9221E	NPW	Y	x	
NY	Coliform, Total MF	SM 9222B	NPW	Y	x	
Ny	Titanium	EPA 6010C	NPW	x	Y	
NY	Flashpoint	EPA 1010A	SCM	Y	x	
NY	Ignitability	EPA 1030	SCM	Y	x	
NY	TCLP	EPA 1311	SCM	Y	Y	
NY	SPLP	EPA 1312	SCM	Y	x	
NY	Microwave Acid Digestion	EPA 3050B	SCM	Y	Y	
NY	Microwave Acid Digestion	EPA 3051A	SCM	Y	Y	
NY	Chromium VI Digestion	EPA 3060A	SCM	x	Y	
NY	Soxhlet Extraction	EPA 3540C	SCM	Y	Y	
NY	Microwave Acid Digestion	EPA 3546	SCM	Y	x	
NY	Microscale Solvent Extraction (MSE)	EPA 3570	SCM	x	Y	
NY	Waste Dilution	EPA 3580A	SCM	Y	Y	
NY	Purge & Trap Soil Low/High	EPA 5035A	SCM	Y	x	
NY	Aluminum	EPA 6010C	SCM	x	Y	
NY	Antimony	EPA 6010C	SCM	x	Y	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Arsenic	EPA 6010C	SCM	x	Y	
NY	Barium	EPA 6010C	SCM	x	Y	
NY	Beryllium	EPA 6010C	SCM	x	Y	
NY	Boron	EPA 6010C	SCM	x	Y	
NY	Cadmium	EPA 6010C	SCM	x	Y	
NY	Calcium	EPA 6010C	SCM	x	Y	
NY	Chromium	EPA 6010C	SCM	x	Y	
NY	Cobalt	EPA 6010C	SCM	x	Y	
NY	Copper	EPA 6010C	SCM	x	Y	
NY	Iron	EPA 6010C	SCM	x	Y	
NY	Lead	EPA 6010C	SCM	x	Y	
NY	Magnesium	EPA 6010C	SCM	x	Y	
NY	Manganese	EPA 6010C	SCM	x	Y	
NY	Molybdenum	EPA 6010C	SCM	x	Y	
NY	Nickel	EPA 6010C	SCM	x	Y	
NY	Potassium	EPA 6010C	SCM	x	Y	
NY	Selenium	EPA 6010C	SCM	x	Y	
NY	Silver	EPA 6010C	SCM	x	Y	
NY	Sodium	EPA 6010C	SCM	x	Y	
NY	Strontium	EPA 6010C	SCM	x	Y	
NY	Thallium	EPA 6010C	SCM	x	Y	
NY	Tin	EPA 6010C	SCM	x	Y	
NY	Titanium	EPA 6010C	SCM	x	Y	
NY	Vanadium	EPA 6010C	SCM	x	Y	
NY	Zinc	EPA 6010C	SCM	x	Y	
NY	Aluminum	EPA 6020A	SCM	x	Y	
NY	Antimony	EPA 6020A	SCM	x	Y	
NY	Arsenic	EPA 6020A	SCM	x	Y	
NY	Barium	EPA 6020A	SCM	x	Y	
NY	Beryllium	EPA 6020A	SCM	x	Y	
NY	Boron	EPA 6020A	SCM	x	Y	
NY	Cadmium	EPA 6020A	SCM	x	Y	
NY	Calcium	EPA 6020A	SCM	x	Y	
NY	Chromium	EPA 6020A	SCM	x	Y	
NY	Cobalt	EPA 6020A	SCM	x	Y	
NY	Copper	EPA 6020A	SCM	x	Y	
NY	Iron	EPA 6020A	SCM	x	Y	
NY	Lead	EPA 6020A	SCM	x	Y	
NY	Magnesium	EPA 6020A	SCM	x	Y	
NY	Manganese	EPA 6020A	SCM	x	Y	
NY	Molybdenum	EPA 6020A	SCM	x	Y	
NY	Nickel	EPA 6020A	SCM	x	Y	
NY	Potassium	EPA 6020A	SCM	x	Y	
NY	Selenium	EPA 6020A	SCM	x	Y	
NY	Silver	EPA 6020A	SCM	x	Y	
NY	Sodium	EPA 6020A	SCM	x	Y	
NY	Strontium	EPA 6020A	SCM	x	Y	
NY	Thallium	EPA 6020A	SCM	x	Y	
NY	Tin	EPA 6020A	SCM	x	Y	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Vanadium	EPA 6020A	SCM	x	Y	
NY	Zinc	EPA 6020A	SCM	x	Y	
NY	Chromium VI	EPA 7196A	SCM	Y	x	
NY	Mercury	EPA 7471B	SCM	x	Y	
NY	Mercury	EPA 7474	SCM	x	Y	
NY	Diesel Range Organics	EPA 8015C	SCM	Y	x	
NY	Gasoline Range Organics	EPA 8015C	SCM	Y	x	
NY	Diesel Range Organics	EPA 8015D	SCM	x	Y	
NY	Ethylene glycol	EPA 8015D	SCM	x	Y	
NY	Gasoline Range Organics	EPA 8015D	SCM	x	Y	
NY	Iso-butyl Alcohol	EPA 8015D	SCM	x	Y	
NY	Tert-Butyl Alcohol	EPA 8015D	SCM	x	Y	
NY	4,4'-DDD	EPA 8081B	SCM	Y	Y	
NY	4,4'-DDE	EPA 8081B	SCM	Y	Y	
NY	4,4'-DDT	EPA 8081B	SCM	Y	Y	
NY	Aldrin	EPA 8081B	SCM	Y	Y	
NY	alpha-BHC	EPA 8081B	SCM	Y	Y	
NY	alpha-Chlordane	EPA 8081B	SCM	Y	x	
NY	beta-BHC	EPA 8081B	SCM	Y	Y	
NY	Chlordane	EPA 8081B	SCM	Y	Y	
NY	delta-BHC	EPA 8081B	SCM	Y	Y	
NY	Dieldrin	EPA 8081B	SCM	Y	Y	
NY	Endosulfan I	EPA 8081B	SCM	Y	Y	
NY	Endosulfan II	EPA 8081B	SCM	Y	Y	
NY	Endosulfan Sulfate	EPA 8081B	SCM	Y	Y	
NY	Endrin	EPA 8081B	SCM	Y	Y	
NY	Endrin Aldehyde	EPA 8081B	SCM	Y	Y	
NY	Endrin Ketone	EPA 8081B	SCM	Y	Y	
NY	gamma-Chlordane	EPA 8081B	SCM	Y	Y	
NY	Heptachlor	EPA 8081B	SCM	Y	Y	
NY	Heptachlor Epoxide	EPA 8081B	SCM	Y	Y	
NY	Lindane (gamma-BHC)	EPA 8081B	SCM	Y	Y	
NY	Methoxychlor	EPA 8081B	SCM	Y	Y	
NY	Mirex	EPA 8081B	SCM	x	Y	
NY	Toxaphene	EPA 8081B	SCM	Y	Y	
NY	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (PCB	EPA 8082A	SCM	x	Y	
NY	2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170)	EPA 8082A	SCM	x	Y	
NY	2,2',3,3',4,4'-Hexachlorobiphenyl (PCB 128)	EPA 8082A	SCM	x	Y	
NY	2,2',3,4,4',5,5'-Heptacholorbiphenyl (PCB 180)	EPA 8082A	SCM	x	Y	
NY	2,2',3,4,4',5',6-Heptachlorobiphenyl (PCB 183)	EPA 8082A	SCM	x	Y	
NY	2,2',3,4,4',5'-Hexachlorobiphenyl (PCB 138)	EPA 8082A	SCM	x	Y	
NY	2,2',3,4',5,5',6-Heptachlorobiphenyl (PCB 187)	EPA 8082A	SCM	x	Y	
NY	2,2',3,4,5,5'-Hexachlorobiphenyl (PCB 141)	EPA 8082A	SCM	x	Y	
NY	2,2',3,4,5'-Pentachlorobiphenyl (PCB 87)	EPA 8082A	SCM	x	Y	
NY	2,2',3,5,5',6-Hexachlorobiphenyl (PCB 151)	EPA 8082A	SCM	x	Y	
NY	2,2',3,5'-Tetrachlorobiphenyl (PCB 44)	EPA 8082A	SCM	x	Y	
NY	2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153)	EPA 8082A	SCM	x	Y	
NY	2,2',4,5,5'-Pentachlorobiphenyl (PCB 101)	EPA 8082A	SCM	x	Y	
NY	2,2',5,5'-Tetrachlorobiphenyl (PCB 52)	EPA 8082A	SCM	x	Y	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	2,2',5-Trichlorobiphenyl (PCB 18)	EPA 8082A	SCM	x	Y	
NY	2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	EPA 8082A	SCM	x	Y	
NY	2,3',4,4'-Tetrachlorobiphenyl (PCB 66)	EPA 8082A	SCM	x	Y	
NY	2,3-Dichlorobiphenyl (PCB 5)	EPA 8082A	SCM	x	Y	
NY	2,4'-Trichlorobiphenyl (PCB 31)	EPA 8082A	SCM	x	Y	
NY	2-Chlorobiphenyl (PCB 1)	EPA 8082A	SCM	x	Y	
NY	PCB-1016	EPA 8082A	SCM	Y	Y	
NY	PCB-1221	EPA 8082A	SCM	Y	Y	
NY	PCB-1232	EPA 8082A	SCM	Y	Y	
NY	PCB-1242	EPA 8082A	SCM	Y	Y	
NY	PCB-1248	EPA 8082A	SCM	Y	Y	
NY	PCB-1254	EPA 8082A	SCM	Y	Y	
NY	PCB-1260	EPA 8082A	SCM	Y	Y	
NY	PCB-1262	EPA 8082A	SCM	Y	Y	
NY	PCB-1268	EPA 8082A	SCM	Y	Y	
NY	PCBs in Oil	EPA 8082A	SCM	Y	x	
NY	2,4,5-T	EPA 8151A	SCM	Y	x	
NY	2,4,5-TP (Silvex)	EPA 8151A	SCM	Y	x	
NY	2,4-D	EPA 8151A	SCM	Y	x	
NY	2,4-DB	EPA 8151A	SCM	Y	x	
NY	Dalapon	EPA 8151A	SCM	Y	x	
NY	Dicamba	EPA 8151A	SCM	Y	x	
NY	Dichloroprop	EPA 8151A	SCM	Y	x	
NY	Dinoseb	EPA 8151A	SCM	Y	x	
NY	MCPA	EPA 8151A	SCM	Y	x	
NY	MCPP	EPA 8151A	SCM	Y	x	
NY	1,1,1,2-Tetrachloroethane	EPA 8260C	SCM	Y	x	
NY	1,1,1-Trichloroethane	EPA 8260C	SCM	Y	x	
NY	1,1,2,2-Tetrachloroethane	EPA 8260C	SCM	Y	x	
NY	1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C	SCM	Y	x	
NY	1,1,2-Trichloroethane	EPA 8260C	SCM	Y	x	
NY	1,1-Dichloroethane	EPA 8260C	SCM	Y	x	
NY	1,1-Dichloroethene	EPA 8260C	SCM	Y	x	
NY	1,1-Dichloropropene	EPA 8260C	SCM	Y	x	
NY	1,2,3-Trichloropropane	EPA 8260C	SCM	Y	x	
NY	1,2,4-Trichlorobenzene	EPA 8260C	SCM	Y	x	
NY	1,2,4-Trimethylbenzene	EPA 8260C	SCM	Y	x	
NY	1,2-Dibromo-3-Chloropropane (DBCP)	EPA 8260C	SCM	Y	x	
NY	1,2-Dibromoethane (EDB)	EPA 8260C	SCM	Y	x	
NY	1,2-Dichlorobenzene	EPA 8260C	SCM	Y	x	
NY	1,2-Dichloroethane	EPA 8260C	SCM	Y	x	
NY	1,2-Dichloropropane	EPA 8260C	SCM	Y	x	
NY	1,3,5-Trimethylbenzene	EPA 8260C	SCM	Y	x	
NY	1,3-Dichlorobenzene	EPA 8260C	SCM	Y	x	
NY	1,3-Dichloropropane	EPA 8260C	SCM	Y	x	
NY	1,4-Dichlorobenzene	EPA 8260C	SCM	Y	x	
NY	1,4-Dioxane	EPA 8260C	SCM	Y	x	
NY	2,2-Dichloropropane	EPA 8260C	SCM	Y	x	
NY	2-Butanone	EPA 8260C	SCM	Y	x	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	2-Chloroethyl Vinyl ether	EPA 8260C	SCM	Y	x	
NY	2-Chlorotoluene	EPA 8260C	SCM	Y	x	
NY	2-Hexanone	EPA 8260C	SCM	Y	x	
NY	4-Chlorotoluene	EPA 8260C	SCM	Y	x	
NY	4-Methyl-2-Pentanone	EPA 8260C	SCM	Y	x	
NY	Acetone	EPA 8260C	SCM	Y	x	
NY	Acrolein	EPA 8260C	SCM	Y	x	
NY	Acrylonitrile	EPA 8260C	SCM	Y	x	
NY	Benzene	EPA 8260C	SCM	Y	x	
NY	Bromobenzene	EPA 8260C	SCM	Y	x	
NY	Bromochloromethane	EPA 8260C	SCM	Y	x	
NY	Bromodichloromethane	EPA 8260C	SCM	Y	x	
NY	Bromoform	EPA 8260C	SCM	Y	x	
NY	Bromomethane	EPA 8260C	SCM	Y	x	
NY	Carbon Disulfide	EPA 8260C	SCM	Y	x	
NY	Carbon Tetrachloride	EPA 8260C	SCM	Y	x	
NY	Chlorobenzene	EPA 8260C	SCM	Y	x	
NY	Chloroethane	EPA 8260C	SCM	Y	x	
NY	Chloroform	EPA 8260C	SCM	Y	x	
NY	Chloromethane	EPA 8260C	SCM	Y	x	
NY	cis-1,2-Dichloroethene	EPA 8260C	SCM	Y	x	
NY	cis-1,3-Dichloropropene	EPA 8260C	SCM	Y	x	
NY	Cyclohexane	EPA 8260C	SCM	Y	x	
NY	Dibromochloromethane	EPA 8260C	SCM	Y	x	
NY	Dibromomethane	EPA 8260C	SCM	Y	x	
NY	Dichlorodifluoromethane	EPA 8260C	SCM	Y	x	
NY	Diethyl ether	EPA 8260C	SCM	Y	x	
NY	Ethyl acetate	EPA 8260C	SCM	Y	x	
NY	Ethyl Methacrylate	EPA 8260C	SCM	Y	x	
NY	Ethylbenzene	EPA 8260C	SCM	Y	x	
NY	Hexachlorobutadiene	EPA 8260C	SCM	Y	x	
NY	Isopropylbenzene	EPA 8260C	SCM	Y	x	
NY	m+p-Xylene	EPA 8260C	SCM	Y	x	
NY	Methyl Acetate	EPA 8260C	SCM	Y	x	
NY	Methyl Cyclohexane	EPA 8260C	SCM	Y	x	
NY	Methyl tert-butyl ether	EPA 8260C	SCM	Y	x	
NY	Methylene Chloride	EPA 8260C	SCM	Y	x	
NY	Naphthalene	EPA 8260C	SCM	Y	x	
NY	n-Butanol	EPA 8260C	SCM	Y	x	
NY	n-Butylbenzene	EPA 8260C	SCM	Y	x	
NY	n-Propylbenzene	EPA 8260C	SCM	Y	x	
NY	o-Xylene	EPA 8260C	SCM	Y	x	
NY	p-Isopropyltoluene	EPA 8260C	SCM	Y	x	
NY	sec-Butylbenzene	EPA 8260C	SCM	Y	x	
NY	Styrene	EPA 8260C	SCM	Y	x	
NY	Tert-Butyl Alcohol	EPA 8260C	SCM	Y	x	
NY	Tert-Butylbenzene	EPA 8260C	SCM	Y	x	
NY	Tetrachloroethene	EPA 8260C	SCM	Y	x	
NY	Toluene	EPA 8260C	SCM	Y	x	

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Total Xylenes	EPA 8260C	SCM	Y	x	
NY	Trans-1,2-Dichloroethene	EPA 8260C	SCM	Y	x	
NY	Trans-1,3-Dichloropropene	EPA 8260C	SCM	Y	x	
NY	Trans-1,4-Dichloro-2-butene	EPA 8260C	SCM	Y	x	
NY	Trichloroethene	EPA 8260C	SCM	Y	x	
NY	Trichlorofluoromethane	EPA 8260C	SCM	Y	x	
NY	Vinyl Acetate	EPA 8260C	SCM	Y	x	
NY	Vinyl Chloride	EPA 8260C	SCM	Y	x	
NY	1,1'-Biphenyl	EPA 8270D	SCM	x	Y	
NY	1,2,4,5-Tetrachlorobenzene	EPA 8270D	SCM	Y	Y	
NY	1,2,4-Trichlorobenzene	EPA 8270D	SCM	Y	Y	
NY	1,2-Dichlorobenzene	EPA 8270D	SCM	Y	Y	
NY	1,2-Diphenylhydrazine	EPA 8270D	SCM	Y	Y	
NY	1,3-Dichlorobenzene	EPA 8270D	SCM	Y	Y	
NY	1,4-Dichlorobenzene	EPA 8270D	SCM	Y	Y	
NY	2,3,4,6-Tetrachlorophenol	EPA 8270D	SCM	Y	Y	
NY	2,4,5-Trichlorophenol	EPA 8270D	SCM	Y	Y	
NY	2,4,6-Trichlorophenol	EPA 8270D	SCM	Y	Y	
NY	2,4-Dichlorophenol	EPA 8270D	SCM	Y	Y	
NY	2,4-Dimethylphenol	EPA 8270D	SCM	Y	Y	
NY	2,4-Dinitrophenol	EPA 8270D	SCM	Y	Y	
NY	2,4-Dinitrotoluene (2,4-DNT)	EPA 8270D	SCM	Y	x	
NY	2,6-Dinitrotoluene (2,6-DNT)	EPA 8270D	SCM	Y	x	
NY	2-Chloronaphthalene	EPA 8270D	SCM	Y	Y	
NY	2-Chlorophenol	EPA 8270D	SCM	Y	Y	
NY	2-Methyl-4,6-dinitrophenol	EPA 8270D	SCM	Y	Y	
NY	2-Methylnaphthalene	EPA 8270D	SCM	Y	Y	
NY	2-Methylphenol	EPA 8270D	SCM	Y	Y	
NY	2-Nitroaniline	EPA 8270D	SCM	Y	Y	
NY	2-Nitrophenol	EPA 8270D	SCM	Y	Y	
NY	3,3-Dichlorobenzidine	EPA 8270D	SCM	Y	Y	
NY	3-Methylphenol	EPA 8270D	SCM	Y	Y	
NY	3-Nitroaniline	EPA 8270D	SCM	Y	Y	
NY	4-Bromophenyl phenyl ether	EPA 8270D	SCM	Y	Y	
NY	4-Chloro-3-methylphenol	EPA 8270D	SCM	Y	Y	
NY	4-Chlorophenyl phenyl ether	EPA 8270D	SCM	Y	Y	
NY	4-Methylphenol	EPA 8270D	SCM	Y	Y	
NY	4-Nitroaniline	EPA 8270D	SCM	Y	Y	
NY	4-Nitrophenol	EPA 8270D	SCM	Y	Y	
NY	Acenaphthene	EPA 8270D	SCM	Y	Y	
NY	Acenaphthylene	EPA 8270D	SCM	Y	Y	
NY	Acetophenone	EPA 8270D	SCM	Y	Y	
NY	Aniline	EPA 8270D	SCM	Y	Y	
NY	Anthracene	EPA 8270D	SCM	Y	Y	
NY	Atrazine	EPA 8270D	SCM	Y	x	
NY	Benzaldehyde	EPA 8270D	SCM	Y	Y	
NY	Benzidine	EPA 8270D	SCM	Y	Y	
NY	Benzo(a)anthracene	EPA 8270D	SCM	Y	Y	
NY	Benzo(a)pyrene	EPA 8270D	SCM	Y	Y	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Benzo(b)fluoranthene	EPA 8270D	SCM	Y	Y	
NY	Benzo(ghi)perylene	EPA 8270D	SCM	Y	Y	
NY	Benzo(k)fluoranthene	EPA 8270D	SCM	Y	Y	
NY	Benzoic Acid	EPA 8270D	SCM	Y	Y	
NY	Benzyl alcohol	EPA 8270D	SCM	Y	Y	
NY	Biphenyl	EPA 8270D	SCM	Y	x	
NY	Bis(2-chloroethoxy) methane	EPA 8270D	SCM	Y	Y	
NY	Bis(2-chloroethyl) ether	EPA 8270D	SCM	Y	Y	
NY	Bis(2-chloroisopropyl) ether	EPA 8270D	SCM	Y	Y	
NY	Bis(2-ethylhexyl) phthalate	EPA 8270D	SCM	Y	Y	
NY	Butyl Benzyl phthalate	EPA 8270D	SCM	Y	Y	
NY	Caprolactam	EPA 8270D	SCM	Y	Y	
NY	Carbazole	EPA 8270D	SCM	Y	Y	
NY	Chrysene	EPA 8270D	SCM	Y	Y	
NY	Dibenzo(a,h)anthracene	EPA 8270D	SCM	Y	Y	
NY	Dibenzofuran	EPA 8270D	SCM	Y	Y	
NY	Diethyl phthalate	EPA 8270D	SCM	Y	Y	
NY	Dimethyl phthalate	EPA 8270D	SCM	Y	Y	
NY	Di-n-butyl phthalate	EPA 8270D	SCM	Y	Y	
NY	Di-n-octyl phthalate	EPA 8270D	SCM	Y	Y	
NY	Diphenylamine	EPA 8270D	SCM	Y	x	
NY	Fluoranthene	EPA 8270D	SCM	Y	Y	
NY	Fluorene	EPA 8270D	SCM	Y	Y	
NY	Hexachlorobenzene	EPA 8270D	SCM	Y	Y	
NY	Hexachlorobutadiene	EPA 8270D	SCM	Y	x	
NY	Hexachlorocyclopentadiene	EPA 8270D	SCM	Y	Y	
NY	Hexachloroethane	EPA 8270D	SCM	Y	Y	
NY	Indeno(1,2,3-cd)pyrene	EPA 8270D	SCM	Y	Y	
NY	Isophorone	EPA 8270D	SCM	Y	Y	
NY	Naphthalene	EPA 8270D	SCM	Y	Y	
NY	Nitrobenzene	EPA 8270D	SCM	Y	Y	
NY	N-Nitrosodimethylamine	EPA 8270D	SCM	Y	Y	
NY	N-Nitrosodi-n-propylamine	EPA 8270D	SCM	Y	Y	
NY	N-Nitrosodiphenylamine	EPA 8270D	SCM	Y	Y	
NY	Parathion	EPA 8270D	SCM	Y	x	
NY	Pentachloronitrobenzene	EPA 8270D	SCM	Y	Y	
NY	Pentachlorophenol	EPA 8270D	SCM	Y	Y	
NY	Phenanthrene	EPA 8270D	SCM	Y	Y	
NY	Phenol	EPA 8270D	SCM	Y	Y	
NY	Pyrene	EPA 8270D	SCM	Y	Y	
NY	Pyridine	EPA 8270D	SCM	Y	Y	
NY	Acenaphthene	EPA 8270D-SIM	SCM	Y	x	
NY	Acenaphthylene	EPA 8270D-SIM	SCM	Y	x	
NY	Anthracene	EPA 8270D-SIM	SCM	Y	x	
NY	Benzo(a)anthracene	EPA 8270D-SIM	SCM	Y	x	
NY	Benzo(a)pyrene	EPA 8270D-SIM	SCM	Y	x	
NY	Benzo(b)fluoranthene	EPA 8270D-SIM	SCM	Y	x	
NY	Benzo(ghi)perylene	EPA 8270D-SIM	SCM	Y	x	
NY	Benzo(k)fluoranthene	EPA 8270D-SIM	SCM	Y	x	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Chrysene	EPA 8270D-SIM	SCM	Y	x	
NY	Dibenzo(a,h)anthracene	EPA 8270D-SIM	SCM	Y	x	
NY	Fluoranthene	EPA 8270D-SIM	SCM	Y	x	
NY	Fluorene	EPA 8270D-SIM	SCM	Y	x	
NY	Indeno(1,2,3-cd)pyrene	EPA 8270D-SIM	SCM	Y	x	
NY	Naphthalene	EPA 8270D-SIM	SCM	Y	x	
NY	Phenanthrene	EPA 8270D-SIM	SCM	Y	x	
NY	Pyrene	EPA 8270D-SIM	SCM	Y	x	
NY	Cyanide - Amenable, Distillation	EPA 9010C	SCM	Y	x	
NY	Cyanide, Distillation	EPA 9010C	SCM	Y	x	
NY	Cyanide, Total	EPA 9012B	SCM	Y	x	
NY	Cyanide, Total	EPA 9014	SCM	Y	x	
NY	Extractable Organic Halides (EOX)	EPA 9023	SCM	Y	x	
NY	Sulfate	EPA 9038	SCM	Y	x	
NY	pH	EPA 9040C	SCM	Y	x	
NY	pH	EPA 9045D	SCM	Y	x	
NY	Specific Conductance	EPA 9050A	SCM	Y	x	
NY	Total Organic Carbon	EPA 9060	SCM	x	Y	
NY	Total Phenolics	EPA 9065	SCM	Y	x	
NY	Oil & Grease	EPA 9071B	SCM	Y	x	
NY	Chloride	EPA 9251	SCM	Y	x	
NY	Total Organic Carbon	Lloyd Kahn	SCM	x	Y	