PROPOSED REMEDIAL ACTION PLAN

National Rubber Adhesives
Operable Unit Number 02: On-Site
State Superfund Project
Long Island City, Queens County
Site No. 241028
June 2026

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

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SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), is proposing a remedy for the above referenced site. The disposal of hazardous wastes at the site has resulted in threats to public health and the environment that would be addressed by the remedy proposed by this Proposed Remedial Action Plan (PRAP). The disposal of hazardous wastes at this site, as more fully described in Section 6 of this document, has contaminated various environmental media. The proposed remedy is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This PRAP identifies the preferred remedy, summarizes the other alternatives considered, and discusses the reasons for the preferred remedy.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

NYSDEC has issued this document in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York; (6 NYCRR) Part 375. This document is a summary of the information that can be found in the site-related reports and documents in the document repositories identified below.

SECTION 2: CITIZEN PARTICIPATION

NYSDEC seeks input from the community on all PRAPs. This is an opportunity for public participation in the remedy selection process. The public is encouraged to review the reports and documents which are available at the following repositories:

DECinfo Locator
https://extapps.dec.ny.gov/data/DecDocs/241028/

Queens Public Library
Long Island City Branch
37-44 21st Street
Long Island City, NY 11101

Phone: 718-752-3700

Queens Community Board #2
43-22 50th Street
Woodside, NY 11377
Phone: 718-533-8773

A public comment period has been set from:

June 24, 2026 to July 24, 2026

A public meeting is scheduled for the following date:

Wednesday, July 15, 2026 at 6:30 P.M.

Public meeting location:

ATLAS High School Auditorium
28-01 41st Avenue
Long Island City, NY 11101

At the meeting, the findings of the remedial investigation (RI) and the feasibility study (FS) will be presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period will be held, during which verbal or written comments may be submitted on the PRAP.

Written comments may also be sent to:

Kyle Forster
NYS Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233
kyle.forster@dec.ny.gov

NYSDEC may modify the proposed remedy or select another of the alternatives presented in this PRAP based on new information or public comments. Therefore, the public is encouraged to review and comment on the proposed remedy identified herein. Comments will be summarized and addressed in the responsiveness summary section of the Record of Decision (ROD). The ROD is NYSDEC's final selection of the remedy for this site.

Receive Site Citizen Participation Information By Email

Please note that NYSDEC's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information

will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, and Brownfield Cleanup Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The 0.69-acre site is located in an urban/industrial section of Long Island City along the east side of 9th Street between 38th Avenue and 40th Avenue. It is bounded to the west by 9th Street, to the east by several commercial businesses, to the south by a residence, and to the north by a portion of a parking lot and a hotel.

Site Features: The site is generally flat and consists of a 16-story hotel covering approximately three-quarters of the southern portion of the site, with paved parking and walking areas and small landscaped areas surrounding the hotel. The hotel was constructed in 2022 within the approximate footprint of Former Buildings 2, 3 and 4 and the adjacent parking lot occupying the approximate footprint of Former Building 1.

Current Zoning and Land Use: The site is zoned light manufacturing in an M1-3 district which allows for manufacturing and commercial uses. The site currently resides on a portion of tax lot 19. The surrounding parcels are occupied by a residence and various commercial businesses including a hotel, an HVAC company, eateries, a storage company, and printing company.

Past Use of the Site: National Rubber Adhesives, Inc. operated an adhesives manufacturing facility from approximately 1933 until 1995 and occupied the northern two-thirds of the site consisting of Former Buildings 1, 2, and 3. Seven underground storage tanks (USTs) were previously beneath Former Building 2, including two 1,500 gallon USTs containing toluene, one 1,500 gallon UST containing methyl ethyl ketone (MEK), and four 550 gallon USTs containing gasoline. Two additional 550-gallon USTs suspected of storing gasoline were also removed beneath Former Building 3 and 4. Six 550-gallon USTs, which were previously closed in place beneath Former Building 1, were removed in April 2014 and suspected to contain heptane, hexane, and toluene. The nine USTs, associated piping, and impacted soils beneath Former Buildings 2, 3, and 4 were removed during foundation construction of the hotel in 2022.

Operable Units: The site is divided into two Operable Units. An operable unit represents a portion of a remedial program for a site that for technical or administrative reasons can be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination. Operable Unit 02 (OU 02) is the on-site area previously occupied by Former Buildings 1, 2, 3, and 4 of the Former National Rubber Adhesives manufacturing facility. OU 01 consists of off-site areas affected by the on-site contamination.

Site Geology and Hydrogeology: The site elevation ranges from approximately 12 to 13 feet above mean sea level. Site soil consists of interbedded layers of silty sands, sandy silts, and trace amounts of gravel. Limited urban fill is present in the southern portion of the site at depths up to 3 feet below grade. Bedrock resides at depths ranging from 7 feet in the southwest corner of the site, down to 18 feet along 9th Street. The existing hotel foundation was generally placed on the bedrock

surface, requiring some removal of bedrock for elevator pits and placement of flowable fill where bedrock resides at greater depths. Groundwater is present at approximately 7 to 9 feet below grade and flows to the west towards the East River, which is located approximately 1,000 feet west of the site.

Operable Unit (OU) Number 02 is the subject of this document.

A Record of Decision will be issued for OU 01 in the future.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

NYSDEC may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives that restrict the use of the site to commercial use (which allows for industrial use) as described in Part 375-1.8(g) are being evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the investigation to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is included in the Tables for the media being evaluated in Exhibit A.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRPs for the site, documented to date, include:

- National Rubber Adhesives, Inc.
- 9th Street LIC LLC
- Hamil Stratten Properties, LLC
- J&N Development, LLC
- Corastor Holding Company, Inc.

9th Street LIC LLC entered into an omnibus Order on Consent and Administrative Settlement dated April 17, 2020, to complete the remedial program for the Site (on and off-Site conditions [OU 02 and OU 01]). NYSDEC's authority and ability to require Corastor Holding Company, Inc./Hamil Stratten Properties, LLC to implement the Order on Consent and Administrative Settlement for the Site dated January 11, 2013 and J & N Development, LLC to implement the Modification to Order on Consent for the Site dated June 1, 2017 regarding J&N Development

LLC's obligations thereunder, is not limited should 9th Street LIC LLC fail to comply with the provisions of the Order on Consent and Administrative Settlement dated April 17, 2020.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil vapor
- indoor air
- sub-slab vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. NYSDEC has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCGs in the footnotes. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a hazardous waste that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminants of concern identified for this Operable Unit at this site are:

trichloroethene (TCE)	vinyl chloride
tetrachloroethene (PCE)	ethylbenzene
benzene	acetone
toluene	xylene (mixed)
dichloroethene (cis-1,2-)	1,2,4-trimethylbenzene

As illustrated in Exhibit A, the contaminants of concern exceed the applicable SCGs for:

- groundwater
- soil
- soil vapor intrusion

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

The following IRM has been completed at this site based on conditions observed during the RI.

IRM - Former Buildings 2, 3, and 4

The following remedy elements were included in the approved IRM Work Plan dated August 2018:

- Former on-site Buildings 2, 3, and 4 were demolished and demolition debris was taken off-site for proper disposal in order to implement the remedy.
- Excavation and off-site disposal of on-site soils beneath the existing hotel building footprint (approximate location of former Buildings 2, 3, and 4) to the depth of bedrock, located approximately 7 to 18 feet below grade. Approximately 1,900 tons of hazardous soil and 6,500 tons of non-hazardous soil were removed from the site. Nine underground storage tanks (USTs) and associated subsurface piping were removed and endpoint samples were collected. Documentation samples were also collected along the excavation extents. Additional excavation was attempted to the west of the hotel along 9th Street, but significant groundwater infiltration did not allow the excavation to be advanced deep enough to achieve protection of groundwater soil cleanup objectives (PGWSCOs).
- A cover system consisting of concrete building foundations, paved surface parking areas, and sidewalks was constructed and is being maintained.
- A sub-slab depressurization system (SSDS) was installed beneath the newly constructed hotel to mitigate the migration of vapors into the building from soil and groundwater.

IRM activities and sampling results are documented in a Construction Completion Report (CCR) dated July 2022 which was approved by NYSDEC.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing (post-IRM) and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water.

Based upon the resources and pathways identified and the toxicity of the contaminants of ecological concern at this site, a Fish and Wildlife Resources Impact Analysis (FWRIA) was deemed not necessary for OU 02.

For OU 02: On-Site Areas

Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, pesticides, and poly chlorinated biphenyls (PCBs). Groundwater was analyzed for per- and polyfluoroalkyl substances (PFAS). Soil vapor was analyzed for VOCs. Based upon investigations conducted to date, the primary contaminants of concern for OU 02 are toluene and gasoline-related contaminants in soil and groundwater, and tetrachloroethene (PCE) and trichloroethene (TCE) in soil vapor.

Soil – The VOC toluene is present along most of the western site boundary at a maximum concentration of 3,600 parts per million (ppm) and beneath the previously removed USTs under Former Building 1 in the northwest corner of the site at a maximum concentration of 500 ppm. The PGWSCO is 0.7 ppm, and the Commercial Use Soil Cleanup Objective (CUSCO) is 500 ppm. Other VOCs detected above their respective CUSCOs and applicable PGWSCOs include: 1,2,4-trimethylbenzene at concentrations up to 11 ppm (PGWSCO is 5.9 ppm), ethylbenzene up to 10 ppm (PGWSCO is 1 ppm), acetone up to 6.3 ppm (PGWSCO is 0.03 ppm), total xylenes up to 1.6 ppm (PGWSCO is 1.2 ppm), and benzene up to 0.38 ppm (PGWSCO is 0.06 ppm). No other VOCs were detected above CUSCOs or applicable PGWSCOs. Heptane was detected up to 130 ppm and hexane up to 330 ppm and are considered site-related VOCs however SCOs do not exist for these compounds.

No SVOCs, metals, pesticides, or PCBs were detected above their respective CUSCOs.

The data indicates there are off-site impacts in soil related to this site.

Groundwater – Toluene is present in groundwater at concentrations up to 309,000 parts per billion (ppb) in the northwest corner of the site, which is above the NYS Ambient Water Quality Standards and Guidance Value (AWQSGV) of 5 ppb. Trace amounts of light non-aqueous phase liquid (LNAPL) were identified at one well with similar concentrations in 2015, but not during subsequent gauging events. Additional VOCs were detected in groundwater, including acetone at concentrations up to 2,000 ppb (AWQSGV is 50 ppb), benzene up to 410 ppb (AWQSGV is 1 ppb), PCE up to 53 ppb (AWQSGV is 5 ppb), cis-1,2-dichloroethene (cis-1,2-DCE) up to 20 ppb

(AWQSGV is 5 ppb), TCE up to 6 ppb (AWQSGV is 5 ppb), and vinyl chloride up to 8 ppb (AWQSGV is 2 ppb).

SVOCs detected include maximum concentrations of naphthalene at 43 ppb (AWQSGV is 10 ppb), bis(2-ethylhexyl)phthalate at 22 ppb (AWQSGV is 5 ppb), and 1,4-dioxane at 1.8 ppb (AWQSGV is 0.35 ppb).

Aside from naturally occurring metals like iron and manganese, the only dissolved metals detected above standards were nickel at concentrations up to 530 ppb (AWQSGV is 100 ppb) and selenium up to 51 ppb (AWQSGV is 10 ppb).

For PFAS, perfluorooctanoic acid (PFOA) was detected at concentrations up to 27 parts per trillion (ppt) (AWQSGV is 6.7 ppt).

No pesticides or PCBs were detected above standards.

The data indicates there are off-site impacts in groundwater related to this site.

Soil Vapor – Air sampling and vacuum monitoring has demonstrated effective operation of the sub-slab depressurization system (SSDS) that resides beneath the newly constructed hotel which approximately encompasses the former footprint of Buildings 2, 3, and 4.

Impacts related to soil vapor intrusion have been identified at off-site structures, and additional sampling will be conducted as part of the off-site investigation under OU 01.

For OU 01: Off-Site Areas

Soil and groundwater were analyzed for volatile organic compounds (VOCs). Groundwater was analyzed for per- and polyfluoroalkyl substances (PFAS). Soil vapor has been analyzed for VOCs. Based on the investigations conducted to date, the primary contaminants of concern off-site are toluene in soil and groundwater, and PCE and TCE in soil vapor. All data was collected after the on-site IRM.

Soil – Toluene was detected in off-site soils at concentrations up to 4,500 ppm (PGWSCO is 0.7 ppm) in the immediate vicinity of the northwestern property boundary.

Groundwater – Toluene was detected at concentrations up to 235,000 ppb (AWQSGV is 5 ppb) immediately downgradient of the northwestern property boundary. Other site-related contaminants were detected in off-site groundwater above AWQSGVs including ethylbenzene up to 55 ppb (AWQSGV is 5 ppb), benzene up to 52 ppb (AWQSGV is 1 ppb), total xylenes up to 32 ppb (AWQSGV is 5 ppb), isopropylbenzene up to 16 ppb (AWQSGV is 5 ppb), MTBE up to 49 ppb (AWQSGV is 10 ppb), cis-1,2-DCE up to 44 ppb (AWQSGV is 5 pp), TCE up to 7 ppb (AWQSGV is 5 ppb), and vinyl chloride up to 14 ppb (AWQSGV is 2 ppb).

For PFAS, PFOA was detected at a maximum concentration of 70 ppt (AWQSGV is 2.7 ppt) and perfluorooctanesulfonic acid (PFOS) at a maximum of 9.3 ppt (AWQSGV is 6.7 ppt).

Soil Vapor – Off-site soil vapor intrusion investigations have identified PCE and TCE in sub-slab soil vapor at nearby buildings at concentrations up to 3,700 ug/m3 and 1,300 ug/m3, respectively. Additional soil vapor intrusion evaluations and mitigation of off-site properties are ongoing.

A separate PRAP and ROD will be issued for OU 01 off-site areas.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure.*

Direct contact with contaminants in the soil is unlikely because the majority of the site is covered with buildings and pavement. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in soil vapor (air spaces within the soil) may move into buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. A sub-slab depressurization system (a system that ventilates / removes the air beneath the building) has been installed in the on-site building to prevent the indoor air quality from being affected by the contamination in soil vapor beneath the building. Environmental sampling indicates soil vapor intrusion from site contamination is a potential concern for off-site buildings.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

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

Soil

RAOs for Public Health Protection

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

RAOs for Environmental Protection

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

Soil Vapor

RAOs for Public Health Protection

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

SECTION 7: SUMMARY OF THE PROPOSED REMEDY

To be selected, the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. The remedy must also attain the remedial action objectives identified for the site, which are presented in Section 6.5. Potential remedial alternatives for the Site were identified, screened and evaluated in the FS report.

A summary of the remedial alternatives that were considered for this site is presented in Exhibit B. Cost information is presented in the form of present worth, which represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved. A summary of the Remedial Alternatives Costs is included as Exhibit C.

The basis for NYSDEC's proposed remedy is set forth at Exhibit D.

The proposed remedy is referred to as the Excavation, Soil Vapor Extraction, Cover System, Groundwater Treatment and Vapor Mitigation remedy.

The estimated present worth cost to implement the remedy is $8,500,000. The cost to construct the remedy is estimated to be $4,500,000 and the estimated average annual operation, monitoring and maintenance cost is $90,000.

The elements of the proposed remedy are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the

design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques, any future on-site buildings which are part of the remedy should be constructed, to the extent feasible, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) in order to improve energy efficiency as an element of construction.

As part of the remedial design program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise^{TMN} (available in the Sustainable Remediation Forum [SURF] library) or similar NYSDEC accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

2. Excavation

Excavation and off-site disposal of contaminant source areas, including:

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);

- non-aqueous phase liquids;
- soil with visual waste material or non-aqueous phase liquid;
- soils which exceed the protection of groundwater soil cleanup objectives (SCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards;
- any USTs, underground piping, or other structures associated with a source of contamination; and
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

Approximately 2,750 cubic yards of soils contaminated with toluene exceeding protection of groundwater SCOs will be removed from on and off-site areas between the existing hotel and 9th Street. The excavation will remove toluene impacted soils within and beneath the water table and generally to the depth of bedrock, which is present at depths up to 18 feet below grade. If the excavation does not extend to bedrock, confirmation samples will be collected at the remedial excavation depth and analyzed to verify that SCOs for the site have been achieved. If confirmation sampling indicates that SCOs were not achieved at the stated remedial depth, the Remedial Party must notify NYSDEC, submit the sample results and, in consultation with NYSDEC, determine if further remedial excavation is necessary.

To ensure proper handling and disposal of excavated material, waste characterization sampling will be completed for all identified contaminated site material. Waste characterization sampling will be performed exclusively for the purposes of off-site disposal in a manner suitable to receiving facilities and in conformance with applicable federal, state and local laws, rules, and regulations and facility-specific permits.

3. Backfill

On-site soil which does not exceed the lower of the above excavation criteria or the protection of groundwater SCOs for any constituent may be used anywhere beneath the cover system, including below the water table, to backfill the excavation or reestablish the site grade.

Backfill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and reestablish the site grade. The site will be re-graded to accommodate installation of a cover system as described in Remedy Element 4.

4. Cover System

A site cover currently exists in areas not occupied by buildings and will be maintained to allow for commercial use of the site. Any site redevelopment or remedial work will maintain the existing site cover. The site cover may include paved surface parking areas, sidewalks or soil where the upper one foot of exposed surface soil meets the applicable soil cleanup objectives (SCOs) for commercial use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6NYCRR part 375-6.7(d).

5. Soil Vapor Extraction

Soil vapor extraction (SVE) will be implemented to remove volatile organic compounds (VOCs) from the subsurface and prevent off-site migration of contaminated vapor. VOCs will be physically removed from the soil by applying a vacuum to wells that have been installed into the vadose zone (the area below the ground but above the water table). The vacuum draws air through the soil matrix which carries the VOCs from the soil to the SVE well. The air extracted from the SVE wells is then treated as necessary prior to being discharged to the atmosphere.

The number and layout of SVE wells will be determined based on a pilot test conducted during the remedial design. The air containing VOCs extracted from the SVE wells will be treated by passing the air stream through activated carbon which removes the VOCs from the air prior to it being discharged to the atmosphere.

Upon system startup, SVE wells will be tested to confirm vacuum influence and effectiveness of the system. If there are no SVE wells located near the site boundaries of concern, vacuum monitoring points will be installed near the site boundaries to evaluate SVE effectiveness at preventing off-site migration of contaminated vapors.

The operation of the SVE system will continue until the remedial objectives have been achieved, or until NYSDEC determines whether continued operation is technically impracticable or not feasible.

6. In-Situ Chemical Oxidation

In-situ chemical oxidation (ISCO) will be implemented to treat contaminants in groundwater and, if necessary, soil below the groundwater table. Alkaline-activated persulfate will be placed in the excavated area and/or injected into the subsurface, as appropriate, to destroy the contaminants in three treatment areas totaling approximately 15,000 square feet including an area in the eastern corner of the site to address chlorinated solvents, and in an area on-site along the northwest property boundary which extends off-site across 9th Street to address toluene. The method and depth of injection will be determined during the remedial design.

7. Vapor Mitigation

Any on-site buildings will be required to have a sub-slab depressurization system, or other acceptable measures, to mitigate the migration of vapors into the building from the subsurface. A sub-slab depressurization system (SSDS) was installed as part of the Interim Remedial Measure (IRM) and will continue operation under the Site Management Plan discussed in Remedy Element 9.

8. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to NYSDEC a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for commercial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOHMH; and
- require compliance with the NYSDEC approved Site Management Plan.

9. Site Management Plan

A Site Management Plan is required, which includes the following:

a) an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in Remedy Element 8 above.

Engineering Controls: The cover system discussed in Remedy Element 4, the SVE system discussed in Remedy Element 5, and the SSDS discussed in Remedy Element 7 above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- a provision for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible. The nature and extent of contamination in areas where access was previously limited or unavailable will be immediately and thoroughly investigated pursuant to a plan approved by NYSDEC. Based on the investigation results and the NYSDEC determination of the need for a remedy, a Remedial Action Work Plan (RAWP) will be developed for the final remedy for the site, including removal and/or treatment of any source areas to the extent feasible. Citizen Participation Plan (CPP) activities would continue through this process. Any necessary remediation will be completed prior to, or in association with, redevelopment. This includes the parking lot adjacent to the on-site hotel, and on and off-site areas between the hotel and 9th Street;
- a provision should redevelopment occur to ensure no soil exceeding protection of groundwater concentrations will remain below storm water retention basin or infiltration structures.
- descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Remedy Element 4 above

will be placed in any areas where the upper one foot of exposed surface soil exceed the applicable soil cleanup objectives (SCOs)
    - provisions for the management and inspection of the identified engineering controls;
    - maintaining site access controls and NYSDEC notification; and
    - the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b) A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
    - monitoring of groundwater and soil vapor to assess the performance and effectiveness of the remedy;
    - a schedule of monitoring and frequency of submittals to the NYSDEC; and
    - monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

c) An Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:
    - procedures for operating and maintaining the remedy;
    - compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
    - maintaining site access controls and NYSDEC notification; and
    - providing the NYSDEC access to the site and O&M records.

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium for which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are arranged into four categories; volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), inorganics (metals and cyanide), and per- and polyfluoroalkyl substances (PFAS). No pesticides or polychlorinated biphenyls (PCBs) were detected above the use specific soil cleanup objectives. For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 4 and Section 6.1.1 are also presented.

Waste/Source Areas

As described in the Supplemental Remedial Investigation/Updated Feasibility Study (SRI/UFS) report, waste/source materials were identified at the site and are impacting groundwater, soil, and soil vapor.

Wastes are defined in 6 NYCRR Part 375-1.2(aw) and include solid, industrial and/or hazardous wastes. Source Areas are defined in 6 NYCRR Part 375(au). Source areas are areas of concern at a site where substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium. Source areas were identified at the site near former underground storage tank (UST) areas where toluene and gasoline were stored. Toluene and gasoline-related contaminants were identified in site soils and groundwater as shown in Figures 2A, 2B, and 3A, and 3B.

A source area identified at the site was addressed by the IRM described in Section 6.2. The remaining source area identified during the RI will be addressed in the remedy selection process.

Groundwater

Groundwater samples were collected from overburden and bedrock monitoring wells. The results of the groundwater samples are presented in the below table and indicate which contaminants in site groundwater exceed the SCGs for VOCs. No private wells were sampled in the immediate vicinity of the site since NYC residents get water from a public supply system. Figures 3A and 3B locate where the groundwater contamination resides in relation to site features.

Table 1 – Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG (ppb)[b] *(ppt)	Frequency Exceeding SCG
VOCs			
1,2,4-Trimethylbenzene	0.2-72.8	5	2/48
1,3,5-Trimethylbenzene	0.21-15	5	1/48

Acetone	1.3-2,000	50	2/48
Benzene	0.32-410	1	16/48
Cis-1,2-Dichloroethylene	0.29-45	5	13/48
Ethylbenzene	0.26-130	5	5/48
Isopropylbenzene (Cumene)	0.4-12	5	2/48
M-P-Xylene	0.65-61	5	5/48
N-Propylbenzene	0.37-28	5	1/48
O-Xylene (1,2-Dimethylbenzene)	0.22-23	5	2/48
Methyl Tert-Butyl Ether	0.2-57	10	5/48
Tetrachloroethylene (PCE)	0.24-85.5	5	4/48
Toluene	0.23-309,000	5	15/48
Trichloroethylene (TCE)	0.21-17	5	5/48
Vinyl Chloride	0.44-13.7	2	4/48
Xylenes, Total	0.65-61	5	5/48
SVOCs			
Bis(2-Ethylhexyl) Phthalate	1.20-22.0	5	1/10
Naphthalene	1.8-43	10	2/10
1,4-Dioxane (P-Dioxane)	0.033-1.8	0.35	3/10
Inorganics			
Antimony	1.30-11.5	3	1/10
Antimony (DISSOLVED)	1.30-1.30	3	0/10
Arsenic	1.10-42.2	25	2/10
Arsenic (DISSOLVED)	1.10-17.8	25	0/10
Beryllium	0.120-6.40	3	2/10
Beryllium (DISSOLVED)	0.120-0.120	3	0/10
Cadmium	0.120-6.20	5	1/10
Cadmium (DISSOLVED)	0.120-0.323	5	0/10
Chromium, Total	0.240-185	50	3/10
Chromium, Total (DISSOLVED)	0.240-2.90	50	0/10
Copper	1.90-305	200	1/10
Copper (DISSOLVED)	1.90-4.30	200	0/10
Iron	390-226,000	300	14/14
Iron (DISSOLVED)	163-12,400	300	9/10
Lead	1.30-138	25	5/10
Lead (DISSOLVED)	1.30-4.70	25	0/10
Magnesium	8,910-205,000	35,000	2/10
Magnesium (DISSOLVED)	8,900-213,000	35,000	1/10
Manganese	292-21,500	300	17/18
Manganese (DISSOLVED)	98.2-22,400	300	9/10
Nickel	1.40-515	100	2/10

Nickel (DISSOLVED)	0.755-530	100	1/10
Selenium	4.00-49.6	10	2/10
Selenium (DISSOLVED)	4.00-51.5	10	2/10
Sodium	25,900-179,000	20,000	10/10
Sodium (DISSOLVED)	24,900-160,000	20,000	10/10
Thallium	1.60-7.80	0.5	10/10
Thallium (DISSOLVED)	1.60-7.80	0.5	10/10
Zinc	6.20-8,980	2,000	1/10
Zinc (DISSOLVED)	6.20-8,540	2,000	1/10
PFAS			
Perfluorooctanoic acid (PFOA)	11.7-69.6	2.7*	5/5
Perfluorooctanesulfonic acid (PFOS)	4.52-9.11	6.7*	1/5

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).
* - PFAS are reported in ppt (parts per trillion), which is equivalent to nanograms per liter, ng/L, in water.

The primary groundwater contaminant is toluene and is attributed to the site's former rubber and adhesive manufacturing processes. It was detected along 9th Steet in both on-site and off-site wells with the highest concentrations along the northwestern property boundary. Acetone, also attributed to historical site uses, was detected exceeding standards at two locations. Other VOCs including benzene, ethylbenzene, xylene, 1,2,4-trimetheylbenzene, and methyl tert-butyl ether (MTBE) were detected in groundwater and are attributed to the historical storage of gasoline at the site. Chlorinated VOCs including tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride were also identified in on-site groundwater and are attributed to former on-site manufacturing processes.

Dissolved phase metals including iron, magnesium, manganese and sodium are considered to represent site background conditions, as these are naturally occurring elements. The concentrations of other dissolved phase metals, SVOCs, and PFAS detected in groundwater are relatively low, and are not an exposure concern considering the groundwater underlying the site is not a source of drinking water. Therefore, the metals, SVOCs, and PFAS found in groundwater are not considered site specific contaminants of concern. No PCBs or pesticides were detected above standards in groundwater.

Based on the findings of the RI, the presence of toluene, gasoline, and chlorinated solvents has resulted in the contamination of groundwater. The site's primary contaminants of concern which will drive the remediation of groundwater to be addressed by the remedy selection process are: toluene, acetone, benzene, ethylbenzene, xylene, PCE, TCE, cis-1,2-DCE, and vinyl chloride.

Soil

Subsurface soil samples were collected at the site during the RI at depths ranging from 0 to 18 feet below grade. The results indicate that concentrations of toluene in site soils exceed the commercial use soil cleanup objective (CUSCO) and the protection of groundwater soil cleanup objective (PGWSCO). Other VOCs detected in site

soils at levels exceeding the applicable PGWSCOs include benzene, xylene, ethylbenzene, and 1,2,4-trimethylbenzene. Figures 2A and 2B show the location of soil impacts to be addressed by the remedy.

Table 2 - Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG (ppm)[b]	Frequency Exceeding Unrestricted Use SCG	Commercial SCG (ppm)[c]	Frequency Exceeding Commercial SCG	Protection of Groundwater SCG (ppm)[d]	Frequency Exceeding Groundwater SCG
VOCs							
1,2,4-Trimethylbenzene	0.033-11	5.9	1/52	500	0/52	5.9	1/52
Acetone	0.0063-6.3	0.03	5/52	500	0/52	0.03	5/52
Benzene	0.005 – 0.38	0.06	1/52	20	0/52	0.06	1/52
Ethylbenzene	0.0033-10	1	2/52	390	0/52	1	2/52
Methylene Chloride	0.0032-16	0.05	12/52	500	0/52	0.05	12/52
Toluene	0.0042-4,500	0.7	19/52	500	4/52	0.7	19/52
Xylenes, Total	0.0052-36	0.26	6/52	500	0/52	1.2	4/52
SVOCs							
O-Cresol	0.0212-0.821	0.33	3/20	500	0/20	0.33	3/20
Pesticides/PCBs							
4,4'-DDD	0.00167-0.0066	0.0033	1/19	33	0/19	14	0/19
4,4'-DDT	0.00167-0.0415	0.0033	1/19	27	0/19	136	0/19
Inorganics							
Chromium	0.506-34.6	30	1/20	1,700	0/20	19	2/20
Lead	2.06-310	63	2/20	1000	0/20	450	0/20
Mercury	0.0367-0.663	0.18	3/20	1.1	0/20	0.73	0/20
Selenium	1.51-6.66	3.9	8/20	1,700	0/20	4	8/20
Zinc	29.6-481	109	2/20	10,000	0/20	2480	0/20

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil.
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.
c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Commercial Use, unless otherwise noted.
d - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Groundwater.

The primary soil contaminant of concern is toluene, and its presence is associated with historical storage and site use related to rubber and adhesive manufacturing. Other contaminants including acetone, ethylbenzene, xylene, and 1,2,4-trimethylbenzene were also found above PGWSCOs and are attributed to historical site use. The SVOC and pesticides found in soil are not considered contaminants of concern due to the relatively low frequency and concentrations detected, and the lack of their presence in groundwater. The metals detected in soil are not considered contaminants of concern since they are not present at concentrations above the CUSCOs and were not detected at an elevated frequency or concentration in dissolved phase groundwater samples.

Based on the findings of the Remedial Investigation, the historical on-site storage and use of toluene for adhesive and rubber manufacturing has resulted in the contamination of soil. The site's primary contaminants of concern

which will drive the remediation of soil to be addressed by the remedy selection process are: toluene, xylene, ethylbenzene, and 1,2,4-trimethylbenzene.

Soil Vapor

The evaluation of the potential for soil vapor intrusion resulting from the presence of site related soil or groundwater contamination was evaluated by the sampling of soil vapor, sub-slab soil vapor under structures, and indoor air inside structures. PCE and TCE were detected in sub-slab vapor at concentrations up to 53,000 µg/m³ and 2,200 µg/m³, respectively, and in indoor air at corresponding concentrations up to 30 µg/m³ and 10 µg/m³, respectively. PCE and TCE were both detected in the indoor air of all Former Buildings prior to their demolition, with the highest concentrations in sub-slab vapor residing beneath Former Buildings 3 and 4, and the highest indoor air concentrations in Former Building 2. Soil vapor contamination identified during the RI was mitigated during the IRM for the on-site hotel building as described in Section 6.2.

Indoor air and sub-slab vapor samples have been collected at several off-site structures and results indicate that soil vapor intrusion from site contamination is a concern. Mitigation of these properties is under evaluation as part of OU 01.

Based on the findings of the Remedial Investigation, the disposal of hazardous waste has resulted in the contamination of soil vapor. The site's primary contaminants of concern which will drive the remediation of soil vapor to be addressed by the remedy selection process are: PCE and TCE.

Exhibit B

Description of Remedial Alternatives

Alternative 1: No Further Action with Site Management

The No Further Action with Site Management Alternative recognizes the remediation of the site completed by the IRMs described in Section 6.2 and Site Management and Institutional Controls and Engineering Controls are necessary to confirm the effectiveness of the IRM. This alternative maintains engineering controls which were part of the IRM and includes institutional controls, in the form of an environmental easement and site management plan, necessary to protect public health and the environment from contamination remaining at the site after the IRMs.

Present Worth: *$1,250,000*
Capital Cost: *$0*
Annual Costs: *$50,000*

Alternative 2: Soil Vapor Extraction (SVE), Cover System, Groundwater Treatment and Vapor Mitigation

This alternative includes installation of a soil vapor extraction (SVE) system to remediate unsaturated soils and prevent off-site migration of impacted soil vapor. A pilot test will inform the design of the SVE system and extracted vapors will be treated as required prior to discharge to the atmosphere. A cover system is included to prevent exposure to remaining contamination and will consist of pavement, sidewalks, or soil where the upper 1 foot of exposed surface soil meets the applicable soil cleanup objectives (SCOs) for commercial use. The sub-slab depressurization system IRM described in Section 6.2 will continue to operate as well. Groundwater will be treated with in-situ chemical oxidation (ISCO) injections and the effectiveness evaluated with long term groundwater monitoring. Additional chemical injections will be required as determined by groundwater monitoring data. A contingency for the treatment of saturated soils is included and will be implemented if deemed necessary. This alternative includes institutional controls, in the form of an environmental easement and a site management plan (SMP), necessary to protect public health and the environment from remaining contamination.

Present Worth: *$3,500,000*
Capital Cost: *$400,000*
Annual Costs: *$90,000*

Alternative 3: Soil Vapor Extraction (SVE), Cover System, Groundwater Pump & Treat and Vapor Mitigation

This alternative includes installation of an SVE system to remediate unsaturated soils and prevent off-site migration of impacted soil vapor. A pilot test will inform the design of the SVE system and extracted vapors will be treated as required prior to discharge to the atmosphere. A cover system is included to prevent exposure to remaining contamination and will consist of pavement, sidewalks, or soil where the upper 1 foot of exposed surface soil meets the applicable SCOs for commercial use. The sub-slab depressurization system IRM described in Section 6.2 will continue to operate as well. A groundwater pump & treat system will also be installed to

address impacted groundwater. Groundwater will be extracted at the downgradient edge of the property, treated to remove VOCs, and then reinjected upgradient of the extraction wells. Groundwater monitoring will be performed to evaluate the effectiveness of the treatment and to guide when the system has achieved remedial objectives. This alternative includes institutional controls, in the form of an environmental easement and a site management plan (SMP), necessary to protect public health and the environment from remaining contamination.

Present Worth: *$20,000,000*
Capital Cost: *$300,000*
Annual Costs: *$800,000*

Alternative 4: Cleanup to Pre-Disposal Conditions

This alternative achieves all the SCGs discussed in Section 6.1.1 and Exhibit A and meets the unrestricted use SCOs listed in Part 375-6.8 (a). This alternative includes the excavation of all soil contamination above unrestricted use SCOs. Due to the shallow depth of groundwater, excavation dewatering will be performed under this alternative. This alternative does not rely on institutional or engineering controls to prevent future exposure. There is no Site Management, no restrictions, and no periodic review. This alternative has no annual monitoring and maintenance costs.

Capital Cost: *$18,000,000*

Alternative 5: Excavation, Soil Vapor Extraction (SVE), Cover System, Groundwater Treatment and Vapor Mitigation

This alternative includes targeted excavation to address toluene-impacted soils between the existing hotel and 9th Street, and beneath the former tank grave beneath Former Building 1. Soils exceeding Part 375 Protection of Groundwater SCOs will be removed and endpoint samples would be collected along the excavation sidewalls for analysis of VOCs. The excavation extents would also be adjusted for utilities and access-related reasons to the existing hotel entrance on 9th Street. Due to the shallow depth of groundwater, excavation dewatering will be performed under this alternative. An SVE system will also be installed to remediate residual contamination not addressed by excavation, and to prevent off-site migration of impacted soil vapor. A pilot test will inform the design of the SVE system and extracted vapors will be treated as required prior to discharge to the atmosphere. A cover system is included to prevent exposure to remaining contamination and will consist of pavement, sidewalks, or soil where the upper 1 foot of exposed surface soil meets the applicable SCOs for commercial use. The sub-slab depressurization system IRM described in Section 6.2 will continue to operate as well. Groundwater will be treated with ISCO injections and the effectiveness evaluated with long term groundwater monitoring. Additional chemical injections will be required as determined by groundwater monitoring data. A contingency for the treatment of residual impacted saturated soils is included and will be implemented if deemed necessary. This alternative includes institutional controls, in the form of an environmental easement and a site management plan (SMP), necessary to protect public health and the environment from any contamination identified at the site.

Present Worth: *$8,500,000*
Capital Cost: *$4,500,000*
Annual Costs: *$90,000*

Exhibit C

Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
1 – No Further Action with Site Management	$0	$50,000	$1,250,000
2 – Soil Vapor Extraction (SVE), Cover System, Groundwater Treatment and Vapor Mitigation	$400,000	$90,000	$3,500,000
3 – Soil Vapor Extraction (SVE), Cover System, Groundwater Pump & Treat and Vapor Mitigation	$300,000	$800,000	$20,000,000
4 – Cleanup to Pre-disposal Conditions	$18,000,000	$0	n/a
5 – Excavation, Soil Vapor Extraction (SVE), Cover System, Groundwater Treatment and Vapor Mitigation	$4,500,000	$90,000	$8,500,000

Exhibit D

SUMMARY OF THE PROPOSED REMEDY

NYSDEC is proposing Alternative 5, Excavation, Soil Vapor Extraction (SVE), Cover System, Groundwater Treatment and Vapor Mitigation, as the remedy for this site. Alternative 5 achieves the remediation goals for the site by removing the most impacted soils that are impacting groundwater quality. The SVE system will address residual impacts in unsaturated soils and a Cover System will prevent exposure to remaining contamination. Groundwater will be addressed with ISCO and be monitored to determine if additional treatment is needed. A contingency will be included for additional ISCO treatment of saturated subsurface soils following evaluation of post-excavation soil data and groundwater monitoring data. The sub-slab depressurization system IRM described in Section 6.2 will continue to operate as well. An Environmental Easement will also be placed on the property which includes the institutional controls necessary for protection of public health and the environment, and to guide long term operation of the remedial components. The elements of this remedy are described in Section 7. The proposed remedy is depicted in Figure 4.

Basis for Selection

Alternative 5 targets excavation of the most impacted soils including those with toluene concentrations up to 4,500 ppm. The SVE system will address residually impacted soils above the water table and help to prevent migration of impacted soil vapor. ISCO will be used to break down toluene and other VOCs present in site groundwater. Groundwater monitoring will be performed to ensure treatment was effective and to determine whether additional ISCO injections are needed. A contingency for the treatment of residual impacted saturated soils is included and will be implemented if deemed necessary. This alternative is expected to achieve cleanup levels for VOCs over time as set forth in NYSDEC Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1). Alternative 5 has challenges of implementing a large-scale excavation next to an operating hotel and adjacent street in a densely populated urban setting. Standard construction and health and safety measures will be taken while implementing the remedy. Alternative 5 relies on institutional controls (ICs) and engineering controls (ECs) to maintain the existing vapor mitigation system and to monitor the effectiveness of the SVE system and groundwater treatment. A Site Management Plan (SMP) will be prepared for groundwater monitoring and maintenance of the vapor mitigation system.

Alternative 5 is the recommended remedy because it meets the RAOs through removal of source material impacting groundwater and the treatment of groundwater and contingency treatment of residual soil impacts. This Alternative costs more than Alternative 2 but provides a greater degree of human health and environmental protection. Both long-term and short-term human health and environmental protection are provided through the removal of source material, treatment of groundwater, and long-term groundwater monitoring. Furthermore, contact with groundwater is limited due to the area being provided with a public water supply and local ICs in place restricting well drilling and groundwater use.

The proposed remedy is based on the results of the RI and the evaluation of alternatives. The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the SRI/UFS report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

The proposed remedy (Alternative 5) satisfies this criterion by removing source material present at and below the water table, which is the most significant threat to the environment. Alternative 5 addresses residual contamination in groundwater and soil via treatment and prevents migration of impacted soil vapor which is the most significant threat to public health. Alternative 1 (No Further Action) does not provide adequate protection to public health and the environment and will not be evaluated further. Alternative 2 and 3 address soil vapor-related impacts to protect human health but they do not address source material which is the most significant threat to the environment. Alternative 4, by removing all contaminated soil above unrestricted use SCOs, meets the threshold criteria. The potential for soil vapor intrusion will be significantly reduced and groundwater quality will improve more quickly under Alternative 4 and 5 since source material will be addressed. Alternatives 2, 3, and 5 rely on a local groundwater use restriction, vapor mitigation, and a cover system to protect human health.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which NYSDEC has determined to be applicable on a case-specific basis.

Alternative 5 complies with SCGs. It addresses source areas of contamination and complies with the commercial use SCOs at the surface through construction of a cover system. It also creates conditions necessary to restore groundwater quality to the extent practicable. Alternative 4 complies with SCGs to the greatest degree by removing all soil contaminants present above unrestricted use SCOs. Alternatives 2 and 3 also comply with this criterion but to a lesser degree or lower certainty than Alternatives 4 and 5 since they rely on only treatment of the source material, without any removal to improve soil and groundwater quality. Alternatives 2, 3, and 5 also rely on vapor mitigation to comply with SCGs related to soil vapor intrusion. It is expected Alternatives 4 and 5 will significantly reduce groundwater concentrations within 5 years; groundwater contamination is expected to remain above SCGs under Alternatives 2 and 3 for more than 5 years. Because Alternatives 2, 3, 4, and 5 satisfy the threshold criteria, the remaining criteria are particularly important in selecting a final remedy for the site.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

Long-term effectiveness is best achieved by those alternatives that include excavation of source material (Alternatives 4 and 5). Alternative 5 addresses source material through removal, to the extent practicable, and treatment and relies on engineering and institutional controls to manage residual contamination. Alternative 4 removes all soils above unrestricted use SCOs thereby eliminating all environmental risks and without the need for engineering or institutional controls to limit any remaining risk. This criterion is least satisfied by Alternatives 2 and 3 since they do not include removal of source material and rely solely on engineering and institutional controls to manage environmental risks. The cleanup timeframes are therefore considered to be much quicker

with Alternative 4 and 5 compared to Alternatives 2 and 3. Groundwater use restrictions and a cover system is included with Alternatives 2, 3, and 5. Alternatives 4 and 5 are considered to reduce the potential for soil vapor intrusion to a greater degree than Alternatives 2 and 3.

4. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Alternative 5 achieves this criterion by addressing source material by removal, to the extent practicable, and treatment thereby reducing contamination toxicity, mobility and volume. Potential exposures are controlled through a combination of source removal and treatment and engineering and institutional controls. Alternative 4 achieves this criterion to the greatest degree by removing all contaminated soils above unrestricted use SCOs and does not rely on institutional controls to manage remaining contamination. Alternatives 2 and 3 achieve this criterion to the least degree since neither include removal of source material, only treatment, and rely on engineering and institutional controls to reduce the toxicity, mobility or volume of contamination and control potential exposures.

5. Short-term Impacts and Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Alternative 4 achieves the remedial goals in the shortest time but has the most significant short-term impacts to the surrounding community given the high probability of closing 9th Street to facilitate the large excavation, the introduction of odors to the surrounding community, and increased truck traffic for several months. Alternative 5 achieves the remedial goals in slightly longer amount of time but has less short-term impacts on the surrounding community due to the smaller, more targeted excavation area and unlikely need for public road closures. Alternatives 2 and 3 achieve the remedial goals to the least degree and in the longest amount of time and have the least short-term impacts due to the lack of excavation. Alternatives 2 and 5 have potential short-term impacts related to handling and injecting chemicals into the subsurface and need to ensure workers and the public are not exposed to unsafe conditions. Potential corrosive impacts to utilities or other building materials will also need to be considered and evaluated prior to implementation of Alternatives 2 and 5.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

The alternatives face different types of challenges for implementability to varying degrees. Alternative 4 is the least implementable due to the large-scale excavation and has significant challenges such as: design and construction of robust support of excavation measures; handling large volumes of excavated material and the associated increased truck traffic on local roads for several months; and the need for phasing due to the on-site hotel operations. Alternative 5 faces similar excavation-related challenges as Alternative 4, but to a lesser degree due to the horizontal and vertical excavation limits being lesser than 4. Potential challenges for implementation of Alternative 2 include the ability to install wide-scale injection wells and additional performance monitoring wells and challenges associated with performing injection events in a densely populated, urban setting.

Alternative 3 faces potential challenges with placement of the pump and treat system given the lack of space between the hotel and 9th Street. Overall, Alternatives 2 and 3 are slightly more implementable than Alternative 5 due to the lack of excavation challenges.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

The most expensive alternative is Alternative 3 with a total present worth cost of $20,000,000 followed by Alternative 4 at $18,000,000, Alternative 5 at $8,500,000, and Alternative 2 at $3,500,000. It should be noted that a total present worth value was not calculated for Alternative 4 since there are no annual costs, and the $18,000,000 represents the capital cost. Although Alternative 2 is the least expensive, the contaminated soil would not be addressed to the same degree as Alternative 4 or 5 and would likely require additional injections over a longer period of time. Although Alternative 4 is effective at addressing source material through removal, it has a substantially higher estimated cost than Alternative 5. Therefore, Alternative 5 is considered the most cost-effective alternative.

8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, NYSDEC may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy.

The site is in an urban area and zoned for commercial use and no future land use changes are anticipated. Site soils exceed commercial use and site groundwater is restricted by a municipal institutional control. Potential exposures related to soil vapor intrusion are addressed through the institutional controls included in Alternatives 2, 3, and 5. The removal of all soils above unrestricted use SCOs in Alternative 4 will allow for all land uses subject to local zoning. Alternatives 2, 3, and 5 all allow for commercial use, which is consistent with the current zoning, by utilizing engineering and institutional controls to manage remaining contamination.

The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

9. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and the PRAP are evaluated. A responsiveness summary will be prepared that describes public comments received and how NYSDEC will address the concerns raised. If the selected remedy differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

Alternative 5 is being proposed because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion.

N
W E
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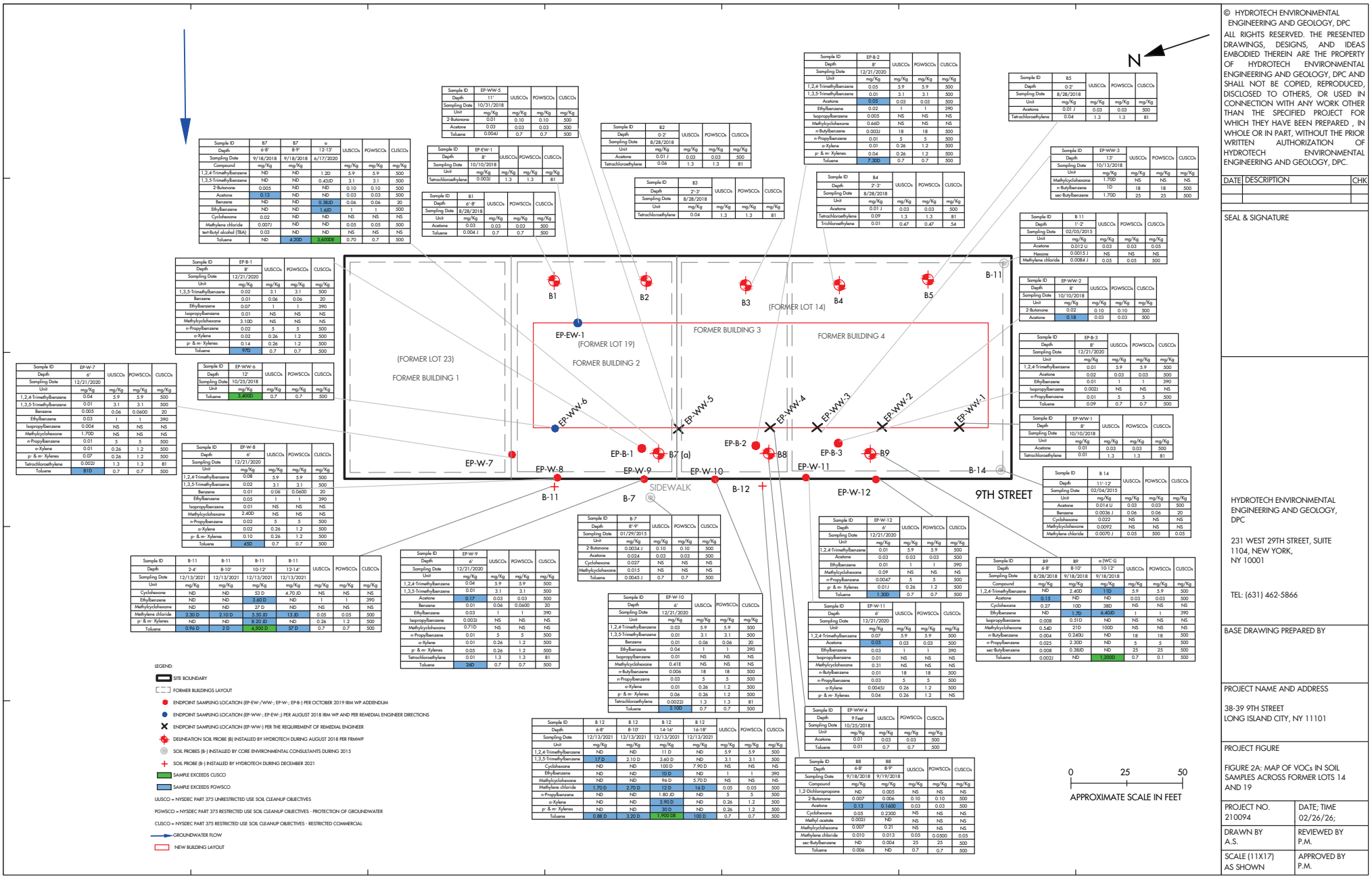
National Rubber Adhesives
Site No. 241028
Site Location Map
Figure 1

NEW YORK STATE
Department of Environmental Conservation



Sample ID	B7	B7	a	UUSCO₆	PGWSCO₆	CUSCO₆
Depth	6-8'	8-9'	12-13'			
Sampling Date	9/18/2018	9/18/2018	6/17/2020			
Compound	mg/Kg	mg/Kg		mg/Kg	mg/Kg	mg/Kg
1,2,4-Trimethylbenzene	ND	ND	1.2D	5.9	5.9	500
1,3,5-Trimethylbenzene	ND	ND	0.43JD	3.1	3.1	500
2-Butanone	0.005	ND	ND	0.10	0.10	500
Acetone	0.13	ND	ND	0.03	0.03	500
Benzene	ND	ND	0.38JD	0.06	0.06	20
Ethylbenzene	ND	ND	1.6D	1	1	500
Cyclohexane	0.02	ND	ND	NS	NS	NS
Methylene chloride	0.007J	ND	ND	0.05	0.05	500
tert-Butyl alcohol (TBA)	0.03	ND	ND	NS	NS	NS
Toluene	ND	4.20D	3.60DE	0.70	0.7	500

Sample ID	EP-WW-5			
Depth	11'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	10/31/2018			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
2-Butanone	0.01	0.10	0.10	500
Acetone	0.03	0.03	0.03	500
Toluene	0.004J	0.7	0.7	500

Sample ID	EP-EW-1			
Depth	8'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	10/10/2018			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Tetrachloroethylene	0.003J	1.3	1.3	81

Sample ID	B1			
Depth	6'-8'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	8/28/2018			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.03	0.03	0.03	500
Toluene	0.004 J	0.7	0.7	500

Sample ID	B2			
Depth	0-2'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	8/28/2018			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.01 J	0.03	0.03	500
Tetrachloroethylene	0.06	1.3	1.3	81

Sample ID	B3			
Depth	2'-3'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	8/28/2018			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Tetrachloroethylene	0.04	1.3	1.3	81

Sample ID	EP-B-2			
Depth	8'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	12/21/2020			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
1,2,4-Trimethylbenzene	0.05	5.9	5.9	500
1,3,5-Trimethylbenzene	0.01	3.1	3.1	500
Acetone	0.05	0.03	0.03	500
Ethylbenzene	0.02	1	1	390
Isopropylbenzene	0.005	NS	NS	NS
Methylcyclohexane	0.660	NS	NS	NS
n-Butylbenzene	0.003J	18	18	500
n-Propylbenzene	0.01	5	5	500
o-Xylene	0.01	0.26	1.2	500
p- & m- Xylenes	0.04	0.26	1.2	500
Toluene	7.30D	0.7	0.7	500

Sample ID	B4			
Depth	2'-3'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	8/28/2018			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.01 J	0.03	0.03	500
Tetrachloroethylene	0.09	1.3	1.3	81
Trichloroethylene	0.01	0.47	0.47	54

Sample ID	B5			
Depth	0-2'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	8/28/2018			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.01 J	0.03	0.03	500
Tetrachloroethylene	0.04	1.3	1.3	81

Sample ID	EP-WW-3			
Depth	13'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	10/13/2018			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Methylcyclohexane	1.70D	NS	NS	NS
n-Butylbenzene	1D	18	18	500
sec-Butylbenzene	1.70D	25	25	500

Sample ID	B 11			
Depth	1'-2'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	02/05/2015			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.012 U	0.03	0.03	0.05
Hexane	0.0015 J	NS	NS	NS
Methylene chloride	0.0084 J	0.05	0.05	500

Sample ID	EP-WW-2			
Depth	8'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	10/10/2018			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
2-Butanone	0.02	0.10	0.10	500
Acetone	0.18	0.03	0.03	500

Sample ID	EP-B-3			
Depth	8'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	12/21/2020			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
1,2,4-Trimethylbenzene	0.01	5.9	5.9	500
Acetone	0.02	0.03	0.03	500
Ethylbenzene	0.01	1	1	390
Isopropylbenzene	0.002J	NS	NS	NS
n-Propylbenzene	0.01	5	5	500
Toluene	0.09	0.7	0.7	500

Sample ID	EP-WW-1			
Depth	8'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	10/10/2018			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.01	0.03	0.03	500
Tetrachloroethylene	0.01	1.3	1.3	81

Sample ID	B 14			
Depth	11'-12'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	02/04/2015			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.014 U	0.03	0.03	500
Benzene	0.0036 J	0.06	0.06	20
Cyclohexane	0.022	NS	NS	NS
Methylcyclohexane	0.0092	NS	NS	NS
Methylene chloride	0.0070 J	0.05	500	0.05

Sample ID	EP-W-7			
Depth	6'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	12/21/2020			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
1,2,4-Trimethylbenzene	0.04	5.9	5.9	500
1,3,5-Trimethylbenzene	0.01	3.1	3.1	500
Benzene	0.005	0.06	0.0600	20
Ethylbenzene	0.03	1	1	390
Isopropylbenzene	0.004	NS	NS	NS
Methylcyclohexane	1.70D	NS	NS	NS
n-Propylbenzene	0.01	5	5	500
o-Xylene	0.01	0.26	1.2	500
p- & m- Xylenes	0.07	0.26	1.2	500
Tetrachloroethylene	0.002J	1.3	1.3	81
Toluene	81D	0.7	0.7	500

Sample ID	EP-WW-6			
Depth	12'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	10/25/2018			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Toluene	3.40JD	0.7	0.7	500

Sample ID	EP-W-8			
Depth	6'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	12/21/2020			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
1,2,4-Trimethylbenzene	0.08	5.9	5.9	500
1,3,5-Trimethylbenzene	0.02	3.1	3.1	500
Benzene	0.01	0.06	0.0600	20
Ethylbenzene	0.05	1	1	390
Isopropylbenzene	0.01	NS	NS	NS
Methylcyclohexane	2.40D	NS	NS	NS
n-Propylbenzene	0.02	5	5	500
o-Xylene	0.02	0.26	1.2	500
p- & m- Xylenes	0.10	0.26	1.2	500
Toluene	45D	0.7	0.7	500

Sample ID	B-7			
Depth	8'-9'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	01/29/2015			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
2-Butanone	0.023J	0.10	0.10	500
Acetone	0.024	0.03	0.03	500
Cyclohexane	0.027	NS	NS	NS
Methylcyclohexane	0.015	NS	NS	NS
Toluene	0.0045 J	0.7	0.7	500

Sample ID	EP-W-9			
Depth	6'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	12/21/2020			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
1,2,4-Trimethylbenzene	0.04	5.9	5.9	500
1,3,5-Trimethylbenzene	0.01	3.1	3.1	500
Acetone	0.17	0.03	0.03	500
Benzene	0.01	0.06	0.0600	20
Ethylbenzene	0.03	1	1	390
Isopropylbenzene	0.003J	NS	NS	NS
Methylcyclohexane	0.71D	NS	NS	NS
n-Propylbenzene	0.01	5	5	500
o-Xylene	0.01	0.26	1.2	500
p- & m- Xylenes	0.05	0.26	1.2	500
Tetrachloroethylene	0.01	1.3	1.3	81
Toluene	26D	0.7	0.7	500

Sample ID	EP-W-10			
Depth	6'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	12/21/2020			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
1,2,4-Trimethylbenzene	0.03	5.9	5.9	500
1,3,5-Trimethylbenzene	0.01	3.1	3.1	500
Benzene	0.01	0.06	0.06	20
Ethylbenzene	0.04	1	1	390
Isopropylbenzene	0.01	NS	NS	NS
Methylcyclohexane	0.41E	NS	NS	NS
n-Butylbenzene	0.006	18	18	500
n-Propylbenzene	0.03	5	5	500
o-Xylene	0.01	0.26	1.2	500
p- & m- Xylenes	0.06	0.26	1.2	500
Tetrachloroethylene	0.0022J	1.3	1.3	81
Toluene	2.10D	0.7	0.7	500

Sample ID	EP-W-11			
Depth	6'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	12/21/2020			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
1,2,4-Trimethylbenzene	0.07	5.9	5.9	500
Acetone	0.03	0.03	0.03	500
Ethylbenzene	0.03	1	1	390
Isopropylbenzene	0.01	NS	NS	NS
Methylcyclohexane	0.31	NS	NS	NS
n-Butylbenzene	0.01	18	18	500
n-Propylbenzene	0.03	5	5	500
o-Xylene	0.004J	0.26	1.2	500
p- & m- Xylenes	0.04	0.26	1.2	NS

Sample ID	EP-W-12			
Depth	6'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	12/21/2020			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
1,2,4-Trimethylbenzene	0.01	5.9	5.9	500
Acetone	0.03	0.03	0.03	500
Ethylbenzene	0.01	1	1	390
Methylcyclohexane	0.09	NS	NS	NS
n-Propylbenzene	0.0047	5	5	500
p- & m- Xylenes	0.011	0.26	1.2	500
Toluene	1.30D	0.7	0.7	500

Sample ID	B9	B9	a (WC-L)			
Depth	6-8'	8-10'	10-12'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	8/28/2018	9/18/2018	9/18/2018			
Compound	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
1,2,4-Trimethylbenzene	ND	2.40D	11D	5.9	5.9	500
Acetone	0.15	ND	ND	0.03	0.03	500
Cyclohexane	0.27	10D	38D	NS	NS	NS
Ethylbenzene	ND	1.7D	6.40JD	1	1	390
Isopropylbenzene	0.008	0.51D	ND	NS	NS	NS
Methylcyclohexane	0.54D	21D	100D	NS	NS	NS
n-Butylbenzene	0.004	0.24DJ	ND	18	18	500
n-Propylbenzene	0.025	2.30D	ND	5	5	500
sec-Butylbenzene	0.008	0.38JD	ND	25	25	500
Toluene	0.002J	ND	1.20DD	0.7	0.1	500

Sample ID	EP-W-4			
Depth	9 Feet	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	10/25/2018			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.01	0.03	0.03	500
Toluene	0.01	0.7	0.7	500

Sample ID	B11	B11	B11	B11			
Depth	2-4'	8-10'	10-12'	12-14'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	12/13/2021	12/13/2021	12/13/2021	12/13/2021			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Cyclohexane	ND	ND	53 D	4.70 JD	NS	NS	NS
Ethylbenzene	ND	ND	3.60 D	ND	1	1	390
Methylcyclohexane	ND	ND	27 D	ND	NS	NS	NS
Methylene chloride	2.30 D	2.10 D	5.50 JD	13 JD	0.05	0.05	500
p- & m- Xylenes	ND	ND	8.20 JD	ND	0.26	1.2	500
Toluene	0.96 D	2 D	4,500 D	57 D	0.7	0.7	500

Sample ID	B 12	B 12	B 12	B 12			
Depth	6-8'	8-10'	14-16'	16-18'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	12/13/2021	12/13/2021	12/13/2021	12/13/2021			
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
1,2,4-Trimethylbenzene	ND	ND	11 D	ND	5.9	5.9	500
1,3,5-Trimethylbenzene	17 D	2.10 D	3.60 D	ND	3.1	3.1	500
Cyclohexane	ND	ND	100 D	7.90 D	NS	NS	NS
Ethylbenzene	ND	ND	10 D	ND	1	1	390
Methylcyclohexane	ND	ND	96 D	5.70 D	NS	NS	NS
Methylene chloride	1.70 D	2.70 D	12 D	16 D	0.05	0.05	500
n-Propylbenzene	ND	ND	1.80 JD	ND	5	5	500
o-Xylene	ND	ND	5.90 D	ND	0.26	1.2	500
p- & m- Xylenes	ND	ND	30 D	ND	0.26	1.2	500
Toluene	0.88 D	3.20 D	1,900 DE	100 D	0.7	0.7	500

Sample ID	B8	B8			
Depth	6-8'	8-9'	UUSCO₆	PGWSCO₆	CUSCO₆
Sampling Date	9/18/2018	9/19/2018			
Compound	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
1,2-Dichloropropane	ND	0.005	NS	NS	NS
2-Butanone	0.007	0.006	0.10	0.10	500
Acetone	0.13	0.160D	0.03	0.03	500
Cyclohexane	0.05	0.230D	NS	NS	NS
Methyl acetate	0.002J	ND	NS	NS	NS
Methylcyclohexane	0.007	0.21	NS	NS	NS
Methylene chloride	0.010	0.013	0.05	0.0500	0.05
sec-Butylbenzene	ND	0.004	25	25	500
Toluene	0.006	ND	0.7	0.7	500

LEGEND:

- SITE BOUNDARY
- FORMER BUILDINGS LAYOUT
- ENDPOINT SAMPLING LOCATION (EP-EW-/WW-; EP-W-; EP-B-) PER OCTOBER 2019 IRM WP ADDENDUM
- ENDPOINT SAMPLING LOCATION (EP-WW-; EP-EW-) PER AUGUST 2018 IRM WP AND PER REMEDIAL ENGINEER DIRECTIONS
- ENDPOINT SAMPLING LOCATION (EP-WW-) PER THE REQUIREMENT OF REMEDIAL ENGINEER
- DELINEATION SOIL PROBE (B) INSTALLED BY HYDROTECH DURING AUGUST 2018 PER FIRMWP
- SOIL PROBES (B-) INSTALLED BY CORE ENVIRONMENTAL CONSULTANTS DURING 2015
- SOIL PROBE (B-) INSTALLED BY HYDROTECH DURING DECEMBER 2021
- SAMPLE EXCEEDS CUSCO
- SAMPLE EXCEEDS PGWSCO

UUSCO = NYSDEC PART 375 UNRESTRICTED USE SOIL CLEANUP OBJECTIVES

PGWSCO = NYSDEC PART 375 RESTRICTED USE SOIL CLEANUP OBJECTIVES - PROTECTION OF GROUNDWATER

CUSCO = NYSDEC PART 375 RESTRICTED USE SOIL CLEANUP OBJECTIVES - RESTRICTED COMMERCIAL

- GROUNDWATER FLOW
- NEW BUILDING LAYOUT

DATE	DESCRIPTION	CHK

SEAL & SIGNATURE

HYDROTECH ENVIRONMENTAL ENGINEERING AND GEOLOGY, DPC

231 WEST 29TH STREET, SUITE 1104, NEW YORK, NY 10001

TEL: (631) 462-5866

BASE DRAWING PREPARED BY

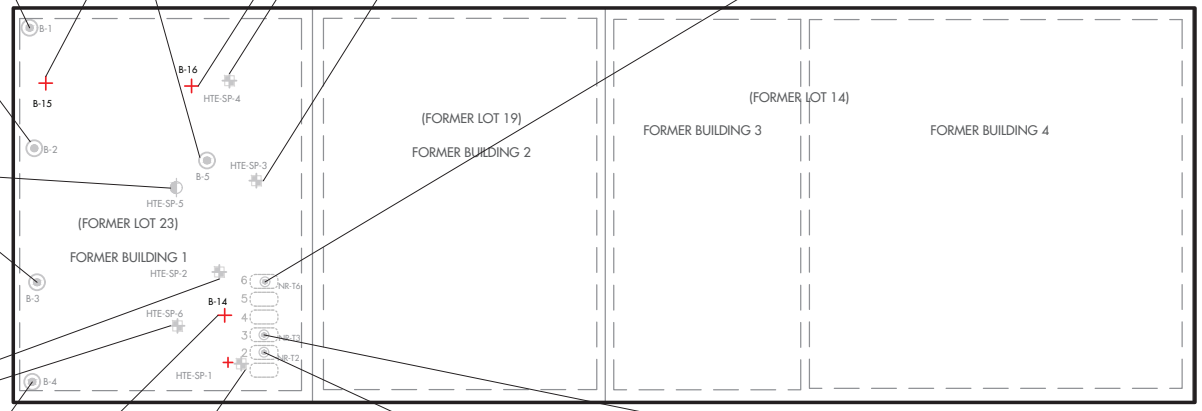
PROJECT NAME AND ADDRESS

38-39 9TH STREET
LONG ISLAND CITY, NY 11101

PROJECT FIGURE

FIGURE 2A: MAP OF VOCs IN SOIL SAMPLES ACROSS FORMER LOTS 14 AND 19

PROJECT NO. 210094	DATE; TIME 02/26/26;
DRAWN BY A.S.	REVIEWED BY P.M.
SCALE (11X17) AS SHOWN	APPROVED BY P.M.



B-1				
Depth	7'-8'			
Date	1/26/2015	UUSCOs	PGWSCOs	CUSCOs
Compound	mg/Kg			
Toluene	0.0046	0.7	0.7	500

B-2				
Depth	6.5'-7.5'			
Date	1/26/2015	UUSCOs	PGWSCOs	CUSCOs
Compound	mg/Kg			
Toluene	0.0073	0.7	0.7	500

B-3				
Depth	6'-7'			
Date	1/26/2015	UUSCOs	PGWSCOs	CUSCOs
Compound	mg/Kg			
Toluene	0.0042 J	0.7	0.7	500

B-4				
Depth	5.5'-6.5'			
Date	1/26/2015	UUSCOs	PGWSCOs	CUSCOs
Compound	mg/Kg			
Toluene	0.0011 J	0.7	0.7	500

B-5				
Depth	7'-8'			
Date	1/28/2015	UUSCOs	PGWSCOs	CUSCOs
Compound	mg/Kg			
Tetrachloroethylene	0.017	1.3	1.3	81
Trichloroethylene	0.0031 J	0.47	0.47	54

B-15	
Date	04/28/2022
Compound	mg/Kg
VOCs	NA

B-13				
Depth	5'-7'			
Date	4/28/2022	UUSCOs	PGWSCOs	CUSCOs
Compound	mg/Kg			
2-butanone	0.003 J	0.10	0.10	500
Acetone	0.02	0.03	0.03	500
Methylene chloride	0.03	0.05	0.05	500

B-14						
Depth	10'-12'	11'-13'				
Date	4/28/2022	4/28/2022	UUSCOs	PGWSCOs	CUSCOs	
Compound	mg/Kg	mg/Kg				
1,2,4-Trimethylbenzene	0.03	ND	5.9	5.9	500	
1,3,5-Trimethylbenzene	0.01	ND	3.1	3.1	500	
Acetone	ND	0.01	0.03	0.03	500	
Cyclohexane	0.10	ND	NS	NS	NS	
Ethylbenzene	0.07	0.003 J	1	1	390	
Methylcyclohexane	0.95 D	0.003 J	NS	NS	NS	
Methylene chloride	ND	0.02	0.05	0.05	500	
N-propylbenzene	0.005 J	ND	5	5	500	
O-xylene	0.02	ND	0.26	1.2	500	
p- & m- xylene	0.13	0.005 J	0.26	1.2	500	
Toluene	26 D	7.10 D	0.7	0.7	500	

HTE-SP-1					HTE-SP-1a						
Depth	5'-7'	8'-10'	8'-10' (DUPLICATE)	6'-8'	8'-10'	8'-10' (DUPLICATE)	10'-12'	12'-14'	UUSCOs	PGWSCOs	CUSCOs
Date	7/30/2020	7/30/2020	7/30/2020	12/13/2021	12/13/2021	12/13/2021	12/13/2021	12/13/2021			
Compound	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg			
Acetone	0.0170	0.47 JD	3.70 D	ND	ND	6.30 D	ND	ND	0.03	0.03	500
Carbon disulfide	ND	ND	0.52 BD	ND	ND	ND	ND	ND	NS	NS	NS
Cyclohexane	ND	ND	ND	0.17 D	2.10 JD	23 D	12 D	ND	NS	NS	NS
Methylcyclohexane	ND	23 D	10 D	ND	ND	12 D	5.30 D	ND	NS	NS	NS
Methylene chloride	ND	0.72 JD	3 D	0.50 JD	ND	4.90 D	ND	2.60 D	0.05	0.05	500
Tetrachloroethylene	0.0130	ND	ND	ND	ND	ND	ND	ND	1.3	1.3	81
Toluene	ND	ND	ND	0.18 JD	280 D	280 D	3,800 DE	6.10 D	0.7	0.7	500

HTE-SP-2					
Depth	5-7	8-9			
Date	7/30/2020	7/30/2020	UUSCOs	PGWSCOs	CUSCOs
Compound	mg/Kg	mg/Kg			
Acetone	0.00650 J	1.30	0.03	0.03	500
Carbon disulfide	ND	0.48 BD	NS	NS	NS
Methylcyclohexane	ND	1.60 D	NS	NS	NS
Tetrachloroethylene	0.00300 J	ND	1.3	1.3	81

HTE-SP-3						
Depth	5'-7'	8'-10'				
Date	7/30/2020	7/30/2020	UUSCOs	PGWSCOs	CUSCOs	
Compound	mg/Kg	mg/Kg				
Acetone	0.0110	0.00780	0.03	0.03	500	
Methylene chloride	ND	0.00680	0.05	0.05	500	
Tetrachloroethylene	0.00350 J	ND	1.3	1.3	81	
Toluene	ND	0.00420	0.7	0.7	500	

HTE-SP-4						
Depth	2'-4'	5'-7'	-			
Date	7/30/2020	7/30/2020	12/13/2021	UUSCOs	PGWSCOs	CUSCOs
Compound	mg/Kg	mg/Kg	mg/Kg			
Acetone	0.0110	0.00750 J	NA	0.03	0.03	500
Methylene chloride	0.00510 J	ND	NA	0.05	0.05	500
Tetrachloroethylene	0.00910	0.00470	NA	1.3	1.3	81

HTE-SP-5					
Depth	5'-7'	8'-10'			
Date	7/30/2020	7/30/2020	UUSCOs	PGWSCOs	CUSCOs
Compound	mg/Kg	mg/Kg			
2-Butanone	ND	0.00370 J	0.10	0.10	500
Acetone	0.00630 J	0.00860	0.03	0.03	500
Tetrachloroethylene	0.00860	ND	1.3	1.3	81

HTE-SP-6					
Depth	5'-7'	8'-10'			
Date	7/30/2020	7/30/2020	UUSCOs	PGWSCOs	CUSCOs
Compound	mg/Kg	mg/Kg			
Acetone	0.0150	ND	0.03	0.03	500
Carbon disulfide	ND	0.62 BD	NS	NS	NS

NR-T6-0.5				
Depth	0.5'			
Date	7/9/2014	UUSCOs	PGWSCOs	CUSCOs
Compound	mg/Kg			
Toluene	15 J	0.7	0.7	500
Ethylbenzene	0.0042 J	NS	NS	NS
p- & m- xylene	0.0082 J	0.26	1.2	500
Hexane	0.77	NS	NS	NS

NR-T3-0-0.5	NR-T3-1.0-1.5			
Depth	0.5'	1.0'-1.5'	UUSCOs	PGWSCOs	CUSCOs
Date	7/9/2014	7/9/2014			
Compound	mg/Kg	mg/Kg			
Toluene	200 J	500	0.7	0.7	500
Ethylbenzene	ND	0.42 J	1	1	390
O-xylene	ND	0.29 J	0.26	1.2	500
p- & m- xylene	0.51 J	1.3 J	0.26	1.2	500
Heptane	28	130	NS	NS	NS
Hexane	93	330	NS	NS	NS

NR-T2-0-0.5	NR-T2-2.5-3.0			
Depth	0-0.5'	2.5'-3'	UUSCOs	PGWSCOs	CUSCOs
Date	7/9/2014	7/9/2014			
Compound	mg/Kg	mg/Kg			
Toluene	280 J	200	0.7	0.7	500
p- & m- xylene	0.97 J	0.45 J	0.26	1.2	500
Heptane	47	31	NS	NS	NS
Hexane	170	30	NS	NS	NS

LEGEND:

- SITE BOUNDARY
- FORMER BUILDINGS LAYOUT
- LOCATION OF FORMER UNDERGROUND STORAGE TANKS CLOSED AND REMOVED BY CORE ENVIRONMENTAL CONSULTANTS IN 2014
- CONCENTRATION EXCEEDS PART 375 UNRESTRICTED USE SOIL CLEANUP OBJECTIVES (UUSCO)
- CONCENTRATION EXCEEDS PART 375 RESTRICTED USE SOIL CLEANUP OBJECTIVES - RESTRICTED COMMERCIAL (CUSCO)
- CONCENTRATION EXCEEDS PART 375 RESTRICTED USE SOIL CLEANUP OBJECTIVES - PROTECTION OF GROUNDWATER (PGWSCO)
- GROUNDWATER FLOW
- SOIL PROBES (B-) INSTALLED BY CORE ENVIRONMENTAL CONSULTANTS DURING 2015
- POST-TANK EXCAVATION SOIL PROBES (NR-T-) INSTALLED BY CORE ENVIRONMENTAL CONSULTANTS DURING 2014
- SOIL PROBES (HTE-SP-) INSTALLED BY HYDROTECH DURING JULY 2020
- POST-TANK EXCAVATION SOIL PROBES (NR-T-) INSTALLED BY CORE ENVIRONMENTAL CONSULTANTS DURING 2014
- SOIL PROBES (B-) INSTALLED BY HYDROTECH DURING DECEMBER 2021

ND	NOT DETECTED
D	RESULT IS FROM AN ANALYSIS THAT REQUIRED DILUTION
J	ANALYTE DETECTED AT OR ABOVE THE METHOD DETECTION LIMIT BUT BELOW THE REPORTING LIMIT
B	ANALYTE FOUND IN THE ANALYSIS BATCH BLANK
NS	NO REGULATORY LIMIT HAS BEEN ESTABLISHED FOR THIS ANALYTE
NA	NOT SAMPLED - DATA NOT AVAILABLE

SOURCES FOR BORING LOCATIONS AND HISTORIC DATA:

1. CORE ENVIRONMENTAL CONSULTANTS - REMEDIAL INVESTIGATION/FEASIBILITY STUDY REPORT (RI/FS) 2016
2. ALL SPECIFIED BORING DEPTHS ARE IN FEET

0 20 40

APPROXIMATE SCALE IN FEET

DATE	DESCRIPTION	CHK

SEAL & SIGNATURE

HYDROTECH ENVIRONMENTAL ENGINEERING AND GEOLOGY, DPC

231 WEST 29TH STREET, SUITE 1104, NEW YORK, NY 10001

TEL: (631) 462-5866

BASE DRAWING PREPARED BY

PROJECT NAME AND ADDRESS

38-39 9TH STREET
LONG ISLAND CITY, NY 11101

PROJECT FIGURE

FIGURE 2B: MAP OF VOCs IN SOIL SAMPLES ACROSS FORMER LOT 23

PROJECT NO. 210094	DATE; TIME 02/26/26;
DRAWN BY A.S.	REVIEWED BY P.M.
SCALE (11X17) AS SHOWN	APPROVED BY P.M.

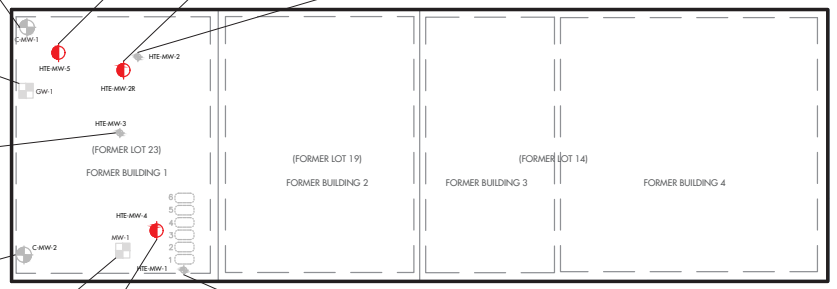
Sample ID	GW-1	GW-1	GQS
Sampling Date	3/10/2015	8/7/2020	
1,2,4-Trimethylbenzene	ND	0.590	5
Acetone	ND	40.30	50
Benzene	0.74 J	1.99	1
Carbon disulfide	ND	7.420	NS
Toluene	6.5	2.010	5
cis-1,2-Dichloroethylene	56.6	19.60	5
Vinyl chloride	77	7.75	2
Ethylbenzene	ND	3.230	5
Isopropylbenzene	ND	0.750	5
Hexane	1.4	ND	3
Methyl tert-butyl ether	ND	3.600	10
n-Propylbenzene	ND	0.690	5
o-Xylene	ND	0.220 J	5
Tetrachloroethylene	0.67 J	3.330	5
trans-1,2-Dichloroethylene	ND	1.290	5
Trichloroethylene	1.3	2.860	5

Sample ID	C-MW-1	C-MW-1	GQS
Sampling Date	3/10/2015	8/7/2020	
Benzene	ND	0.320 J	1
Chloroform	ND	0.570	7
Tetrachloroethylene	336	52.90	5
Toluene	ND	12.90	5
Methyl tert-butyl ether	ND	0.210 J	10
Trichloroethylene	26	3.990	5
cis-1,2-Dichloroethylene	122	6.76	5
trans-1,2-dichloroethylene	ND	0.290 J	5
Vinyl chloride	3.8	0.440 J	2

Sample ID	HTE-MW-5	GQS
Sampling Date	6/16/2022	
1,1,1-Trichloroethane	0.50	5
1,1-Dichloroethane	1.60	5
Acetone	1.58 J	50
Carbon disulfide	0.31 JB	-
Chloroform	0.45 J	7
cis-1,2-Dichloroethylene	7.88	5
Methyl tert-butyl ether (MTBE)	0.21 J	10
Tetrachloroethylene	19	5
trans-1,2-Dichloroethylene	0.32 J	5
Trichloroethylene	4.48	5
Vinyl Chloride	0.57	2

Sample ID	HTE-MW-2	HTE-MW-2R	GQS
Sampling Date	8/10/2020	6/16/2022	
1,2,4-Trimethylbenzene	ND	0.27 J	5
2-Butanone	ND	3.23	50
2-Hexanone	ND	0.35 J	50
cis-1,2-Dichloroethylene	16.60	7.17	5
Tetrachloroethylene	85.50	18	5
Trichloroethylene	9.03	6.35	5
1,1,1-Trichloroethane	2.920	0.93	5
1,1-Dichloroethane	0.600	2.08	5
Acetone	3.270	2.29	50
Benzene	0.220 J	ND	1
Carbon disulfide	ND	2.82 B	~
Chloroform	1.580	0.86	7
Ethylbenzene	0.260	ND	5
Toluene	0.890 B	3.13	5
trans-1,2-Dichloroethylene	0.470 J	0.27 J	5
Vinyl Chloride	0.530	0.79	2

Sample ID	HTE-MW-3	GQS
Sampling Date	8/7/2020	
Acetone	71.60 D	50
Benzene	1.50	1
Toluene	94.20 D	5
1,1-Dichloroethane	0.370 J	5
cis-1,2-Dichloroethylene	1.500	5
Ethylbenzene	0.300 J	5
Methyl tert-butyl ether	1.010	10
p- & m- Xylenes	0.650 J	5
Tetrachloroethylene	0.860	5
trans-1,2-Dichloroethylene	0.200 J	5
Trichloroethylene	0.390 J	5



9TH STREET

Sample ID	C-MW-2	C-MW-2	GQS
Sampling Date	3/10/2015	11/20/2018	
Benzene	0.96 J	WELL NOT FOUND	1
Toluene	0.61 J	WELL NOT FOUND	5
Ethylbenzene	2.4	WELL NOT FOUND	5
o-Xylene	2.2	WELL NOT FOUND	5
p- & m- Xylenes	0.72 J	WELL NOT FOUND	5
Tetrachloroethylene	1.7	WELL NOT FOUND	5
cis-1,2-Dichloroethylene	ND	WELL NOT FOUND	5
Trichloroethylene	ND	WELL NOT FOUND	5
Hexane	ND	WELL NOT FOUND	3
Heptane	ND	WELL NOT FOUND	3
Vinyl Chloride	ND	WELL NOT FOUND	2

Sample ID	HTE-MW-4	GQS
Sampling Date	6/16/2022	
Toluene	2400 BD	5

Sample ID	HTE-MW-1	GQS
Sampling Date	8/7/2020	
Benzene	410 D	1
Toluene	309,000 D	5

Sample ID	MW-1	MW-1	MW-1	GQS
Sampling Date	3/10/2015	11/20/2018	8/7/2020	
Acetone	ND	3.08	2,000 D	
Benzene	0.8 J	1.14	ND	1
Carbon disulfide	ND	ND	0.500	NS
Chloroform	ND	ND	3.140	7
Cyclohexane	ND	ND	1.500	ND
Toluene	0.26 J	ND	4.250	5
Tetrachloroethylene	0.57 J	ND	ND	5
4-Methyl-2-pentanone	ND	0.7 JD	ND	NS
Isopropylbenzene	ND	0.4 JD	ND	5
Styrene	ND	0.44 JD	ND	5
tert-Butyl alcohol (TBA)	ND	1.53	ND	NS

GROUNDWATER SAMPLES

LEGEND:

- SITE BOUNDARY
- EXCEEDS NYSDEC TOGS GROUNDWATER STANDARDS AND GUIDANCE VALUES - GQS
- LOCATION OF FORMER UNDERGROUND STORAGETANKS CLOSED AND REMOVED BY CORE ENVIRONMENTAL CONSULTANTS (Core) IN 2014
- FORMER MONITORING WELLS (GW-1; MW-1) INSTALLED BY AMERICAN ENVIRONMENTAL SOLUTIONS INC. (A.E.S.) IN 2005 AND 2007
- FORMER MONITORING WELLS (GCM-MW-) INSTALLED BY CORE ENVIRONMENTAL CONSULTANTS DURING 2015
- MONITORING WELLS (HTE-MW-) INSTALLED BY HYDROTECH DURING AUGUST 2020
- MONITORING WELL (HTE-MW-) INSTALLED BY HYDROTECH DURING DECEMBER 2021-APRIL 2022
- GROUNDWATER FLOW
- FORMER BUILDINGS LAYOUT

ND NOT DETECTED

D RESULT IS FROM AN ANALYSIS THAT REQUIRED DILUTION

J ANALYTE DETECTED AT OR ABOVE THE METHOD DETECTION LIMIT BUT BELOW THE REPORTING LIMIT

B ANALYSTE FOUND IN THE ANALYSIS BATCH BLANK

NS NO REGULATORY LIMIT HAS BEEN ESTABLISHED FOR THIS ANALYTE

NOTE: ALL RESULTS ARE REPORTED IN MICROGRAMS PER LITER (UG/L)

SOURCES FOR BORING LOCATIONS AND HISTORIC DATA:

1. CORE ENVIRONMENTAL CONSULTANTS - REMEDIAL INVESTIGATION/FEASIBILITY STUDY REPORT (RI/FS) 2016
2. ALL SPECIFIED BORING DEPTHS ARE IN FEET

0 20 40
APPROXIMATE SCALE IN FEET

DATE	DESCRIPTION	CHK

SEAL & SIGNATURE

HYDROTECH ENVIRONMENTAL ENGINEERING AND GEOLOGY, DPC

231 WEST 29TH STREET, SUITE 1104
NEW YORK, NY 10001

TEL: (631) 462-5866

BASE DRAWING PREPARED BY

PROJECT NAME AND ADDRESS

38-39 9TH STREET
LONG ISLAND CITY, NY 11101

PROJECT FIGURE

FIGURE 3A: MAP OF VOCS IN ON-SITE GROUNDWATER

PROJECT NO.	DATE; TIME
210094	09/18/25; 10:20
DRAWN BY	REVIEWED BY
A.S.	P.M.
SCALE (11X17)	APPROVED BY
AS SHOWN	P.M.

SAMPLE ID	HRP-MW-4						
SAMPLING DATE	7/16/2012	3/10/2015	3/30/2016	NOV. 2018	8/10/2020	6/15/2022	GQS
TOLUENE	70,000	19,500	26,000	170	2,180 D	75.6	5
BENZENE	560	300	410	150	123 D	52	1
M- & P- XYLENES	ND	124	130	19	14.8 D	29.4	5
1,2,4- TRIMETHYLBENZENE	ND	ND	ND	ND	4.9 D	1.84	5
1,3,5- TRIMETHYLBENZENE	ND	ND	ND	ND	1.05 JD	0.52	5
ACETONE	ND	ND	ND	ND	ND	2.83	50
CYCLOHEXANE	320 J	ND	ND	ND	118 D	72.8 D	NS
ETHYLBENZENE	ND	68.4	53	5.9	4.7 D	1.04	5
METHYLCYCLOHEXANE	ND	ND	ND	ND	39.8 D	29.9	NS
O-XYLENE	ND	29.2	ND	ND	1.85 JD	2.29	5
PCE	ND	0.43 J	ND	ND	ND	ND	5
TCE	ND	ND	ND	ND	ND	ND	5
HEXANE	ND	20.6	ND	ND	ND	NT	3
HEPTANE	ND	7.5	ND	ND	ND	NT	3
VC	ND	0.31 J	ND	ND	ND	ND	2
XYLENES, TOTAL	400 J	29.2	ND	ND	1.85 JD	2.29	5

SAMPLE ID	HRP-MW-7			
SAMPLING DATE	7/17/2012	3/30/2016	8/14/2020	GQS
CIS-1,2-DCE	7.5	9	2.65	5
MTBE	5.8	ND	0.62	10
PCE	1	ND	0.43 J	5
TCE	3.2	ND	0.73	5
VC	ND	ND	0.63	2

SAMPLE ID	HRP-MW-8				
SAMPLING DATE	7/17/2012	3/29/2016	NOV. 2018	8/17/2020	GQS
TOLUENE	ND	ND	11,000	0.88	5
CIS-1,2-DCE	37	42	45	43.5	5
MTBE	130	80	57	41.8	10
TCE	13	6.7	7.1	6.61	5
VC	17	16	10	13.7	2
1,1-DICHLOROETHANE	ND	ND	ND	0.22 J	5
1,1-DICHLOROETHYLENE	ND	ND	ND	0.24 J	5
CHLOROMETHANE	ND	ND	ND	1.48	5
PCE	1.5	ND	0.29 J	0.4	5
TRANS-1,2-DCE	ND	ND	0.78 J	0.88	5

SAMPLE ID	HRP-BR-2						
SAMPLING DATE	7/16/2012	3/10/2015	3/30/2016	NOV. 2018	8/10/2020	6/15/2022	GQS
BENZENE	1.3	1.3	3.1	2	13.7	ND	1
1,2,4-TRIMETHYLBEZENE	ND	ND	ND	ND	0.22 J	ND	5
CYCLOHEXANE	96	ND	55	120	2.59	1.10	3
MTBE	ND	ND	ND	ND	38.1	49.4	10
METHYLCYCLOHEXANE	33	ND	37	62	1.19	0.23 J	NS
TOLUENE	3.2	1.1	21,000	ND	0.42 JB	2.08	5
M- & P- XYLENES	ND	0.79 J	ND	0.88 J	ND	ND	5
METHYLENE CHLORIDE	ND	ND	220	1.7	ND	ND	5
PCE	ND	ND	ND	0.36 J	ND	ND	5
ETHYL BENZENE	2	ND	ND	ND	ND	ND	5

SAMPLE ID	HRP-MW-3				
SAMPLING DATE	7/17/2012	3/29/2016	8/10/2020	6/15/2022	GQS
MTBE	ND	ND	0.53	ND	10
TOLUENE	ND	ND	0.23 JB	ND	5
VC	5.4	ND	ND	ND	2
TCE	12	ND	ND	ND	5
PCE	24	ND	ND	ND	5
CIS-1,2-DCE	41	ND	ND	ND	5
1,1-DICHLOROETHANE	0.92 J	ND	ND	ND	5

SAMPLE ID	HRP-MW-5			
SAMPLING DATE	7/17/2012	3/29/2016	8/13/2020	8/13/2020-DUPLICATE
VOCs	ND	ND	ND	ND

SAMPLE ID	HRP-MW-6			
SAMPLING DATE	7/18/2012	3/29/2016	8/13/2020	GQS
TOLUENE	0.79	ND	ND	5
PCE	ND	ND	0.24 J	5

SAMPLE ID	KS-MW-2			
SAMPLING DATE	7/18/2012	3/29/2016	8/15/2020	
VOCs	ND	ND	NOT SAMPLED	

SAMPLE ID	HRP-BR-3					
SAMPLING DATE	7/17/2012	3/29/2016	NOV. 2018	8/17/2020	8/15/2022	GQS
TOLUENE	ND	ND	ND	ND	ND	5
CIS-1,2-DCE	ND	ND	ND	16.8	17.3	5
PCE	ND	ND	0.61 J	2.03	1.41	5
TCE	ND	ND	ND	2.19	2.22	5
VC	ND	ND	ND	1.73	1.78	2
MTBE	ND	ND	ND	2.98	11.4	10
TRANS-1,2-DCE	ND	ND	ND	0.23 J	0.2 J	5

SAMPLE ID	HRP-BR-1						
SAMPLING DATE	7/17/2012	3/10/2016	3/30/2016	NOV. 2018	8/17/2020	6/17/2022	GQS
TOLUENE	42,000	9,500	21,000	8,200	198 D	0.42 J	5
BENZENE	ND	49.9	ND	110	11	2	1
ETHYLBENZENE	ND	10.8	ND	38	5.67	0.54	5
M- & P- XYLENES	ND	36.2	ND	ND	17	3.64	5
1,2,4- TRIMETHYLBENZENE	ND	ND	ND	ND	1.73	0.36 J	5
1,3,5- TRIMETHYLBENZENE	ND	ND	ND	ND	0.56	ND	5
CYCLOHEXANE	ND	ND	ND	ND	25.5	37.5	NS
ISOPROPYLBENZENE	ND	ND	ND	ND	0.43 J	ND	5
METHYLCYCLOHEXANE	ND	ND	ND	ND	17	4.5	NS
N-PROPYLBENZENE	ND	ND	ND	ND	0.46 J	ND	5
O-XYLENE	ND	7	ND	ND	0.99	ND	5
SEC-BUTYLBENZENE	ND	ND	ND	ND	0.32 J	ND	5
HEPTANE	ND	25.3	ND	ND	0.32 J	ND	3
HEXANE	ND	48.9	ND	ND	0.32 J	ND	3
TETRACHLOROETHYLENE	ND	<1.0	ND	ND	0.32 J	ND	5
TRICHLOROETHYLENE	ND	0.49 J	ND	ND	0.32 J	ND	5
CIS-1,2-DCE	ND	<1.0	ND	ND	0.32 J	ND	5
VC	ND	<1.0	ND	ND	0.32 J	ND	2

SAMPLE ID	KS-MW-3		
SAMPLING DATE	NOV. 2018	8/16/2020	
VOCs	DRY	DRY	

SAMPLE ID	HRP-MW-1				
SAMPLING DATE	7/16/2012	3/30/2016	8/12/2020	8/12/2020-DUPLICATE	GQS
N-BUTYLBENZENE	ND	ND	0.21 J	0.22 J	5
SEC-BUTYLBENZENE	ND	ND	2.34	2.22	5
TERT-BUTYLBENZENE	ND	ND	0.54	0.3	5

SAMPLE ID	KS-MW-1				
SAMPLING DATE	3/29/2016	NOV. 2018	8/14/2020	6/16/2022	GQS
1,2,4-TRIMETHYLBENZENE	ND	ND	ND	0.67	5
1,3,5-TRIMETHYLBENZENE	ND	ND	ND	0.21 J	5
2-BUTANONE	ND	ND	ND	0.3 J	50
ACETONE	ND	ND	ND	7.24	50
TOLUENE	42,000	11,000	ND	0.66	5
BENZENE	ND	370	ND	4.85	1
CARBON DISULFIDE	ND	ND	ND	0.3 JB	NS
CYCLOHEXANE	ND	ND	ND	34.9	NS
METHYLCYCLOHEXANE	ND	ND	ND	5.75	NS
P- & M- XYLENES	ND	110	ND	1.58	5

SAMPLE ID	C-MW-3				
SAMPLING DATE	3/10/2015	8/24/2018	8/8/2020	6/15/2022	GQS
BENZENE	52.5	7.39	WELL COULD NOT BE FOUND	ND	1
ETHYLBENZENE	12.6	0.83		ND	5
P- & M- XYLENES	29.1	2.19		ND	5
TOLUENE	24,400	1,520		235,000	5

SAMPLE ID	C-MW-3R	
SAMPLING DATE	6/15/2022	GQS
BENZENE	ND	1
ETHYLBENZENE	ND	5
P- & M- XYLENES	ND	5
TOLUENE	235,000	5

SAMPLE ID	C-MW-5			C-MW-5R		C-MW-5R (DUPLICATE)	GQS
SAMPLING DATE	3/10/2015	8/24/2018	8/9/2020	6/15/2022	9/11/2024	9/11/2024	
1,2,4- TRIMETHYLBENZENE	NT	18.4	WELL COULD NOT BE FOUND	72.8 D	0.66	0.80	5
1,3,5- TRIMETHYLBENZENE	NT	3.87		15 D	ND	ND	5
BENZENE	4.39	24.2		37.8 D	8.26	8.26	1
CYCLOHEXANE	ND	NT		303 D	73.60 D	74.30	NS
ETHYLBENZENE	284	36.5		130 D	57.20	55.40	5
ISOPROPYLBENZENE	8.8	2.11		12 JD	14.50	15.80	5
METHYLCYCLOHEXANE	NT	NT		192 D	2.92	2.59	NS
O-XYLENE	135	7.97		5 U	ND	ND	5
M- & P- XYLENES	780	51.1		61 D	ND	ND	5
TOLUENE	749,000	23,500		198 D	0.5	0.53	5

SAMPLE ID	MW-103						
SAMPLING DATE	6/14/2012	6/15/2012	7/18/2012	3/11/2015	3/30/2016	8/17/2020	GQS
BENZENE	ND	ND	ND	0.93 J	ND	ND	1
TOLUENE	ND	3.3	ND	31.3	ND	ND	5
O-XYLENES	ND	ND	ND	0.56 J	ND	ND	5
P- & M- XYLENES	ND	ND	ND	2.7	ND	ND	5
PCE	0.035 J	ND	ND	ND	ND	ND	5
CIS-1,2-DCE	ND	ND	ND	ND	ND	ND	5
TCE	ND	ND	ND	ND	ND	ND	5
HEXANE	ND	ND	ND	1.1	ND	ND	3
HEPTANE	ND	ND	ND	ND	ND	ND	3
VC	ND	ND	ND	ND	ND	ND	2

SAMPLE ID		MW-101				
SAMPLING DATE	6/14/2012	6/15/2012	7/18/2012	3/28/2016	8/13/2020	GQS
BENZENE	0.0006 J	ND	ND	ND	ND	1
TOLUENE	0.001	ND	ND	ND	ND	5

SAMPLE ID		MW-102			
SAMPLING DATE	6/12/2012	6/14/2012	7/18/2012	3/28/2016	8/13/2020
TOLUENE	ND	1.9	ND	ND	ND

SAMPLE ID		MW-104				
SAMPLING DATE	6/13/2012	6/14/2012	7/17/2012	3/30/2016	8/13/2020	GQS
TOLUENE	ND	2.6	ND	ND	ND	5
CIS-1,2-DCE	ND	15	24	3.7	5.77	5
BENZENE	ND	0.8 J	ND	ND	ND	5
MTBE	ND	1	1.3	ND	ND	10
VC	ND	ND	0.91 J	ND	ND	2

SAMPLE ID	HRP-MW-2					
SAMPLING DATE	6/14/2012	7/17/2012	3/11/2015	3/30/2016	8/12/2020	GQS
BENZENE	ND	ND	1.2	ND	ND	5
TOLUENE	68	2.1	0.99 J	0.86	ND	5
CHLOROFORM	9.4	5.8	ND	ND	0.27 J	7
CIS-1,2-DCE	ND	ND	ND	ND	1.09	5
PCE	ND	ND	ND	ND	0.3	5
ETHYLBENZENE	ND	ND	0.35 J	ND	ND	5
M- & P- XYLENES	ND	ND	0.75 J	ND	ND	5

SAMPLE ID		MW-105					
SAMPLING DATE	6/13/2012	6/14/2012	7/17/2012	3/30/2016	NOV. 2018	8/12/2020	GQS
TOLUENE	ND	1.8	ND	ND	ND	ND	5
CIS-1,2-DCE	ND	47	20	14	6.1	1.42	5
PCE	ND	9.5	6.7	4.4	ND	1.82	5
TCE	ND	1	0.6	ND	ND	0.21 J	5

LEGEND:
- SITE BOUNDARY
- EXISTING MONITORING WELL
- REPLACEMENT MONITORING WELL (C-MW-R) INSTALLED BY HYDROTECH DURING DECEMBER 2021 AND MAY 2022
- FORMER LOCATION OF C-MW-3 AND C-MW-5 INSTALLED BY CORE ENVIRONMENTAL DURING 2015
- EXCEEDS NYSDEC TOGS GROUNDWATER STANDARDS AND GUIDANCE VALUES - GQS
- GROUNDWATER FLOW

GQS - GROUNDWATER QUALITY STANDARDS
D - RESULTS FROM AN ANALYSIS THAT REQUIRED DILUTION
ND - NONE ABOVE METHOD DETECTION LIMIT
J - ANALYTE DETECTED AT OR ABOVE THE METHOD DETECTION LIMIT BUT BELOW THE REPORTING LIMIT
NS - NO REGULATORY LIMIT HAS BEEN ESTABLISHED FOR THIS ANALYTE
NT - NOT A TARGET ANALYTE

NOTE: ALL RESULTS ARE REPORTED IN MICROGRAMS PER LITRE (µG/L)

SOURCES FOR MONITORING WELL LOCATIONS AND HISTORIC DATA:
1. CORE ENVIRONMENTAL CONSULTANTS - REMEDIAL INVESTIGATION/FEASIBILITY STUDY REPORT (RI/FS) 2016
2. ENVIRONMENTAL ASSESSMENT AND REMEDIATION - OFF-SITE GROUNDWATER INVESTIGATION 2018

DATE	DESCRIPTION	CHK

SEAL & SIGNATURE

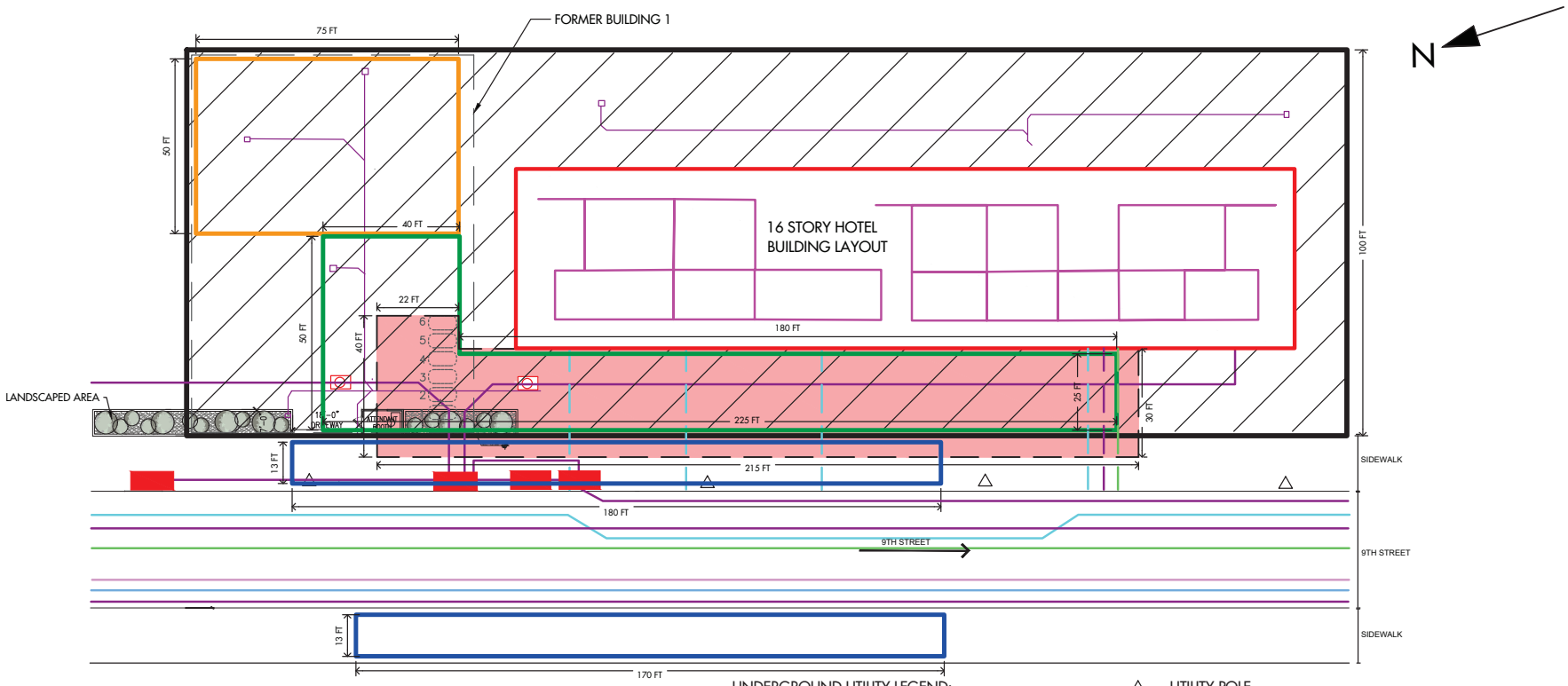
HydroTech
HYDROTECH ENVIRONMENTAL ENGINEERING AND GEOLOGY, DPC
231 WEST 29TH STREET, SUITE 1104, NEW YORK, NY 10001
TEL: (631) 462-5866

BASE DRAWING PREPARED BY

PROJECT NAME AND ADDRESS
38-39 9TH STREET
LONG ISLAND CITY, NY

PROJECT FIGURE
FIGURE 3B: MAP OF VOCs IN OFF-SITE GROUNDWATER SAMPLES

PROJECT NO. 210094	DATE; TIME 05/20/26; 13:35
DRAWN BY A.S.	REVIEWED BY P.M.
SCALE (11X17) AS SHOWN	APPROVED BY P.M.



SITE LEGEND:

- SITE BOUNDARY AND EXTENT OF COVER SYSTEM*
- NEW BUILDING LAYOUT
- EXCAVATION OF CONTAMINATED SOIL
- ISCO AREA A: 7,000 FT^2
- ISCO AREA B: 3,750 FT^2
- ISCO AREA C: 4,590 FT^2

ISCO = *IN-SITU* CHEMICAL OXIDATION

SVE TARGET ZONE

* COVER SYSTEM CONSISTS OF PAVEMENT, BUILDING FOUNDATIONS, AND 1 FOOT OF CLEAN SOIL IN LANDSCAPED AREAS

UNDERGROUND UTILITY LEGEND:

- PRE-CAST ELECTRIC VAULT
- VERIZON CABLE
- ELECTRICAL CONDUITS
- ELECTRIC MANHOLE
- 8-INCH WATER MAIN
- 8-INCH GAS LINE
- COMBINED SEWER AT DEPTH OF 9 FEET
- SUB-SLAB DEPRESSURIZATION PIPING LAYOUT OF PERFORATED PVC PIPES INSTALLED IN THE MIDDLE OF A 6-INCH OF 3/4-INCH RECYCLED BLUESTONE UNDER THE BUILDING SLAB ON-GRADE
- UTILITY POLE
- SEWER CONNECTION
- GAS CONNECTION
- ELECTRIC CONNECTION
- ELECTRIC LINES
- LOCATION OF FORMER UNDERGROUND STORAGE TANKS CLOSED AND REMOVED BY CORE ENVIRONMENTAL CONSULTANTS (Core) IN 2014

0 40

APPROXIMATE SCALE IN FEET

DATE	DESCRIPTION	CHK

SEAL & SIGNATURE

HYDROTECH ENVIRONMENTAL ENGINEERING AND GEOLOGY, DPC

231 WEST 29TH STREET, SUITE 1104, NEW YORK, NY 10001

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BASE DRAWING PREPARED BY

PROJECT NAME AND ADDRESS

38-39 9TH STREET
LONG ISLAND CITY, NY

PROJECT FIGURE

FIGURE 4: EXCAVATION, SVE SYSTEM, GROUNDWATER TREATMENT, AND LONG-TERM OPERATIONAL, MAINTENANCE, AND MONITORING (ALTERNATIVE 5)

PROJECT NO. 210094	DATE; TIME 11/02/25; 16:00
DRAWN BY A.S.	REVIEWED BY P.M.
SCALE (11X17) AS SHOWN	APPROVED BY P.M.