DECISION DOCUMENT

148-26 Hillside Avenue
Brownfield Cleanup Program
Jamaica, Queens County
Site No. C241199
June 2024

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

DECLARATION STATEMENT - DECISION DOCUMENT

148-26 Hillside Avenue
Brownfield Cleanup Program
Jamaica, Queens County
Site No. C241199
June 2024

Statement of Purpose and Basis

This document presents the remedy for the 148-26 Hillside Avenue brownfield cleanup site. The remedial program was chosen in accordance with the 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 decision is based on the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the 148-26 Hillside Avenue site and the public's input to the proposed remedy presented by NYSDEC.

Description of Selected Remedy

The elements of the selected 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 to the extent feasible in the future development at this site, any future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) 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™ (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. Backfill

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation completed under a previously approved Interim Remedial Measure (IRM) Work Plan and establish the designed grades at the site.

3. Soil Vapor Extraction (SVE):

Soil vapor extraction (SVE) will be implemented to remove volatile organic compounds (VOCs) from the subsurface and to prevent off-site migration of contaminants in soil 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) and screened to 6 feet below basement grade. 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 by passing the air stream through activated carbon which removes the VOCs from the air prior to it being discharged to the atmosphere.

4. **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.

Engineering and Institutional Controls

Imposition of an institutional control in the form of an Environmental Easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 2 restricted residential cleanup at a minimum.

5. **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 the NYSDEC 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 restricted residential 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 and/or NYCDOHMH;
- require compliance with the NYSDEC approved Site Management Plan.

6. **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 5 above.

   - Engineering Controls: The soil vapor extraction system discussed in remedy element 3, and the vapor mitigation system discussed in remedy element 4 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;

- description of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department 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 soil vapor and indoor air to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department;

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 sub slab depressurization system(s) and soil vapor extraction system 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 Department access to the site and O&M records.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

June 12, 2024

Date

Scott Deyette, Director
Remedial Bureau B

DECISION DOCUMENT

148-26 Hillside Avenue
Jamaica, Queens County
Site No. C241199
June 2024

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, where a contaminant is present at levels exceeding the soil cleanup objectives or other health-based or environmental standards, criteria or guidance, based on the reasonably anticipated use of the property.

NYSDEC has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

NYSDEC seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by NYSDEC in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repositories:

DECInfo Locator - Web Application
https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C241199

Queens Public Library at Richmond Hill
18-14 Hillside Avenue
Queens, NY 11418
Phone: (718) 849-7150

Queens Community Board 12
9028 161st Street
Jamaica, NY 11432
Phone: (718) 658-3308

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, Brownfield Cleanup Program and Resource Conservation and Recovery Act 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

Site Location: The 0.44-acre site is located at 148-28 Hillside Avenue, Jamaica, NY and identified as Block 9694, Lot 17 on the New York City Tax Map. The site is bounded by Hillside Avenue to the north followed by a two-story mixed-use building with apartments above commercial units, a one-story commercial building occupied by a supermarket to the east, a six-story residential apartment building and a two-story religious building to the south, and a two-story commercial building to the west.

Site Features: The remedial excavation on site was recently completed as an interim remedial measure (IRM). Currently, the site is vacant and covered by soil.

Current Zoning and Land Use: The site is located in an R7A zoned district with a C2-3 commercial overlay. Residential areas are located in all directions from the site. No other sensitive receptors, including school, day-care facilities, hospitals, river or streams, wetlands, or parks are located within 500 feet of the Site.

Past Use of the Site: According to Sanborn maps, as of 1888, the site contained a three-story residential building. In 1925, a one-story filling station with gasoline tanks had also been constructed. In 1942, the three-story building was identified as mixed-use, and it was demolished by 1963. In 1967, the gasoline tanks were no longer identified, and by 1992 the building was identified as an auto repair shop. The property remained substantially unchanged through 2006. In 2015, five abandoned 550-gallon gasoline underground storage tanks were identified in front of the building and an inactive 250-gallon waste oil underground storage tank was observed in the interior of the repair shop. In 2015, auto repair shop activities were terminated, and all auto shop solvents and chemicals were removed from the property. After 2015, the property was no longer used as an automobile shop and there have been no active tenants or business operations.

Site Geology and Hydrogeology: The shallow stratigraphy beneath the site generally consists of medium to coarse-grained silty sand mixed with urban fill material and gravels to a depth of 3 feet below ground surface (ft bgs), underlain by medium to coarse-grained silty sand to a depth of 5 ft bgs. Soil from 5 feet to 43 ft bgs consists of damp to saturated, medium to coarse-grained and silty sand with abundant rounded to subangular gravels.

The major aquifer systems beneath the site are the unconsolidated Upper Glacial aquifer of the Pleistocene Series and the Magothy and Lloyds aquifers of the upper Cretaceous Series. The Raritan confining unit, consisting of solid and silty clay with lenses and layers of sand, separates the Magothy and Lloyds aquifers and is present between approximately 150 feet and 300 feet bgs. Crystalline bedrock is present approximately 400 feet bgs in the vicinity of the site.

The groundwater interface is approximately 41.6 to 42.8 ft bgs and is inferred to flow in southerly direction beneath the site.

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 (or an alternative) that restrict(s) the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report.

SECTION 5: ENFORCEMENT STATUS

The Applicant under the Brownfield Cleanup Agreement is a Participant. The Applicant has an obligation to address on-site and off-site contamination. Accordingly, no enforcement actions are necessary.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site

and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil 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. 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 contaminant 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 below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

benzo(a)anthracene
benzo(a)pyrene
benzo(b)fluoranthene
benzo(k)fluoranthene
indeno (1,2,3-c,d) pyrene
lead
total Xylenes
arsenic
1,2,4-Trimethylbenzene
vinyl chloride
cis-1,2-Dichloroethene
mercury
tetrachloroethene (PCE)
trichloroethene (TCE)
dibenz(a,h)anthracene
chrysene

benzene	toluene
perfluorooctanoic acid (PFOA)	perfluorooctanesulfonic acid (PFOS)

The contaminant(s) of concern exceed the applicable SCGs for:

- soil
- groundwater

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 Decision Document.

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

Excavation:

An IRM has been completed to address volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals and other site-related contaminants of concern within the former auto repair facility area of concern (AOC). The approved IRM includes:

- Excavation of VOCs, SVOCs and metals-contaminated soil in the former auto repair facility AOC to prevent impacts to human health or the environment;
- Removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination; and,
- Collection of waste characterization samples for all identified contaminated site material to ensure proper handling and disposal of excavated material.

Soils within the two localized hotspots in the former auto repair facility AOC were excavated to nine feet and fifteen feet below grade surface (bgs), respectively. In addition to meet the track 2 remedy for the site, the top 3 feet of soil, which was indicative of urban fill with exceedances of restricted residential soil cleanup objectives (RRSCOs), was excavated and disposed offsite. All post excavation confirmation samples have met the RRSCOs for all soils in the upper 15 feet.

The IRM has been completed and will be documented in the Final Engineering Report.

The IRM excavation map is attached as Figure 2.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing 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.

Nature and Extent of Contamination:

A site wide and off-site investigation were conducted to delineate contamination in soil, groundwater, and soil vapor. Soil and groundwater samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), pesticides, the emerging contaminants per-and polyfluoroalkyl substances (PFAS) and 1,4 dioxane. Soil vapor was analyzed for VOCs. Based on the results of the investigation, the primary contaminants of concern at the site are metals, petroleum related VOCs and chlorinated related VOCs, and SVOCs in soil, and petroleum related VOCs and chlorinated VOCs in soil vapor.

Prior to the implementation of the IRM, results are summarized below:

Soil:
Several petroleum related VOCs were detected at concentrations that exceed their applicable restricted residential soil cleanup objectives (RRSCOs) including: 1,2,4-trimethylbenzene up to 85 parts per million (ppm) (RRSCO is 3.6 ppm), benzene up to 7.7 (RRSCO is 4.8 ppm), toluene up to 130 ppm (RRSCO is at 100 ppm) and total xylene up to 162 ppm (RRSCO is 100 ppm). Several chlorinated related VOCs were detected at concentrations that exceed their applicable RRSCO including: vinyl chloride up to 45 ppm (RRSCO is 0.9 ppm), cis-1,2-dichloroethene up to 3200 ppm (RRSCO is 100 ppm), trichloroethene (TCE) up to 430 ppm (RRSCO is 21 ppm), and tetrachloroethylene (PCE) up to 7800 ppm (RRSCO is 19).

Several SVOCs were detected at concentrations that exceed their respective RRSCOs including benzo(a)anthracene up to 5.6 ppm (RRSCO is 1 ppm), benzo(a)pyrene up to 8.9 ppm (RRSCO is 1 ppm), benzo(b)fluoranthene up to 5.6 ppm (RRSCO is 1 ppm), indeno (1,2,3-c,d) pyrene up to 5 ppm (RRSCO is 0.5 ppm), chrysene up to 4.5 ppm (RRSCO is 3.9 ppm)and dibenz(a,h)anthracene up to 1.3 ppm (RRSCO is 0.33 ppm).

Several metals were detected at concentrations that exceed their respective RRSCOs including arsenic up to 42.7 ppm (RRSCO is 16 ppm), mercury up to 3.24 ppm (RRSCO is 0.81 ppm) and lead up to 5,700 ppm (RRSCO is 400 ppm).

The emerging contaminant were detected at concentrations that exceed their respective protection of groundwater soil cleanup objectives (PGWSCO) including perfluorooctanoic acid (PFOA) up to 0.843 parts per billion (ppb) (PGWSCO is 0.8 ppb) and perfluorooctanesulfonic acid (PFOS) up to 2.23 ppb (PGWSCO is 1.0 ppb).

Data does not indicate off-site impacts in soil related to the site.

Groundwater:

Groundwater data was compared to Ambient Water Quality Standards and Guidance Values (AWQSGVs). SVOCs detected include benz(a)anthracene up to 0.03 ppb (AWQSGV is 0.002 ppb), chrysene up to 0.02 (AWQSGV is 0.002 ppb).
PFOA was detected in groundwater samples at a maximum concentration of 26.5 parts per trillion (ppt) compared to the AWQSGV of 2.7 ppt.

Data does not indicate any off-site impacts in groundwater related to the site.

Soil Vapor:

PCE was detected in five soil vapor samples at a maximum concentration of 1,760 micrograms per cubic meter ($\mu g/m^3$) and trichloroethene (TCE) was detected in one soil vapor sample at a concentration of 11 $\mu g/m^3$. Petroleum-related VOCs such as benzene, toluene, ethylbenzene, and xylenes (BTEX) were detected in soil vapor at a maximum concentration of 80.65 $\mu g/m^3$.

Additionally, four off-site soil vapor samples were collected from two soil vapor location on the northern side of the property which were taken at two distinct depths from the sidewalk. PCE was detected in sidewalk soil vapor ranging from 40.7 $\mu g/m^3$ to 124 $\mu g/m^3$.

Furthermore, two indoor air and sub-slab soil vapor samples were collected from a neighboring property. PCE was detected in two indoor air samples at maximum concentration of 7.93 $\mu g/m^3$, with 541 $\mu g/m^3$ in the sub-slab vapor samples. TCE was detected in two indoor air samples at maximum concentration of 1.5 $\mu g/m^3$, with 126 $\mu g/m^3$ in the sub-slab vapor samples. Cis-1,2-dichloroethene was detected in two indoor air samples at maximum concentration of 28.2 $\mu g/m^3$, with 2,230 $\mu g/m^3$ in the sub-slab vapor samples.

Data indicates there are off-site impacts in soil vapor related to the site.

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.*

Since the site is fenced and contaminated soils have been removed, people are unlikely to come into contact with site-related soil and groundwater contamination. 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 structures 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 structures, is referred to as soil vapor intrusion. Because the site is vacant, the inhalation of site-related contaminants due to soil vapor intrusion does not represent a current concern. The potential exists for people to inhale site

contaminants in indoor air due to soil vapor intrusion in any future on-site building occupancy and / or redevelopment. Environmental sampling indicates soil vapor intrusion from site contamination is a concern for at least one off-site building.

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.

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: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375.

The selected remedy is a Track 2: Restricted use with generic soil cleanup objectives remedy.

The selected remedy is referred to as the soil vapor extraction (SVE), sub-slab depressurization (SSDS) remedy.

The elements of the selected remedy, as shown in Figure 3, 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 to the extent feasible in the future development at this site, any future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) 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™ (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. Backfill

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation completed under a previously approved Interim Remedial Measure (IRM) Work Plan and establish the designed grades at the site.

3. Soil Vapor Extraction (SVE):

Soil vapor extraction (SVE) will be implemented to remove volatile organic compounds (VOCs) from the subsurface and to prevent off-site migration of contaminants in soil 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) and screened to 6 feet below basement grade. 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 by passing the air stream through activated carbon which removes the VOCs from the air prior to it being discharged to the atmosphere.

4. 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.

Engineering and Institutional Controls

Imposition of an institutional control in the form of an Environmental Easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 2 restricted residential cleanup at a minimum.

5. 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 the NYSDEC 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 restricted residential 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 and/or NYCDOHMH;
- require compliance with the NYSDEC approved Site Management Plan.

6. 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 5 above.

- Engineering Controls: The soil vapor extraction system discussed in remedy element 3, and the vapor mitigation system discussed in remedy element 4 above.

This plan includes, but may not be limited to:

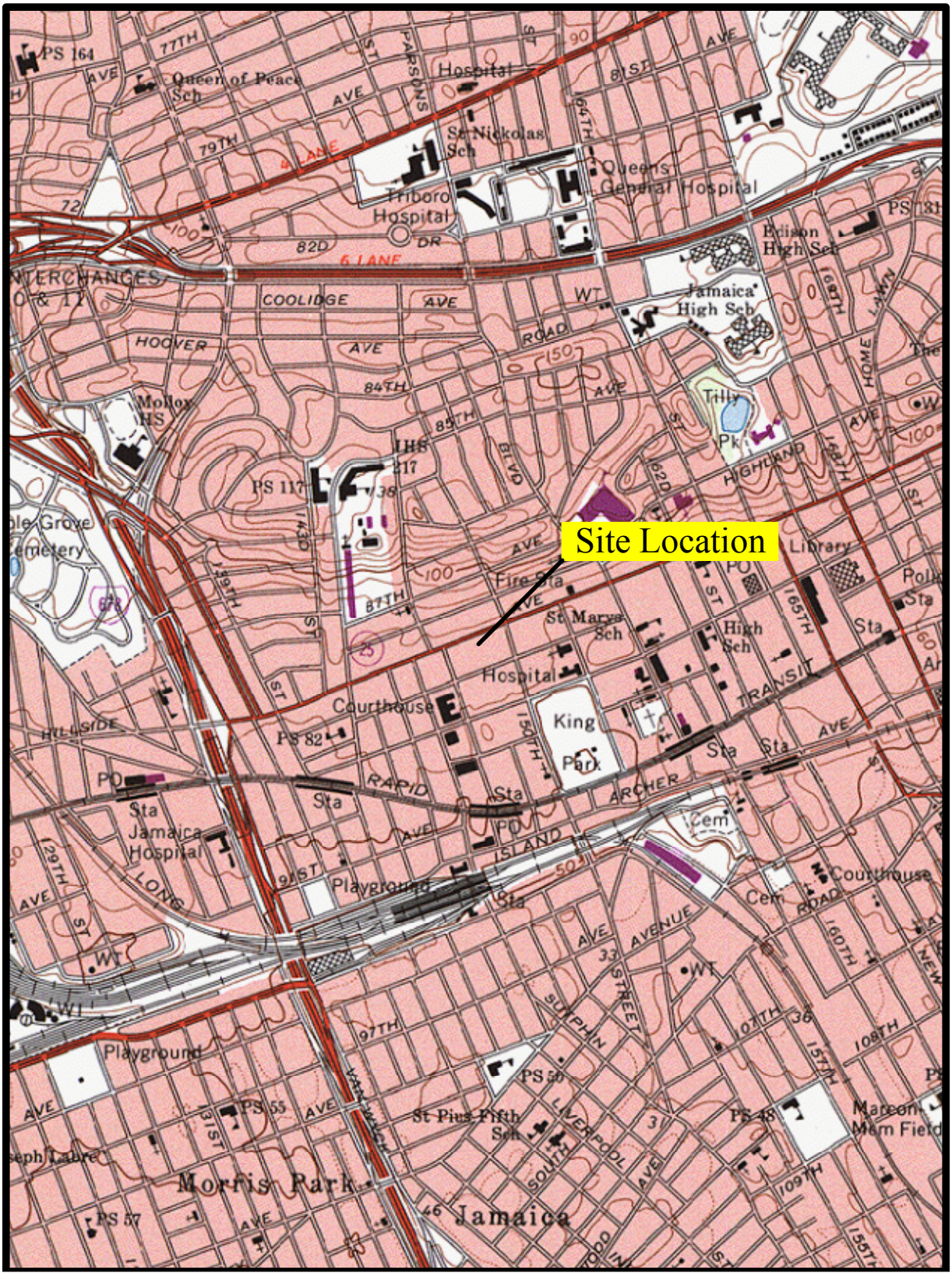
- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- description of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department 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 soil vapor and indoor air to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department;

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 sub slab depressurization system(s) and soil vapor extraction system 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 Department access to the site and O&M records.



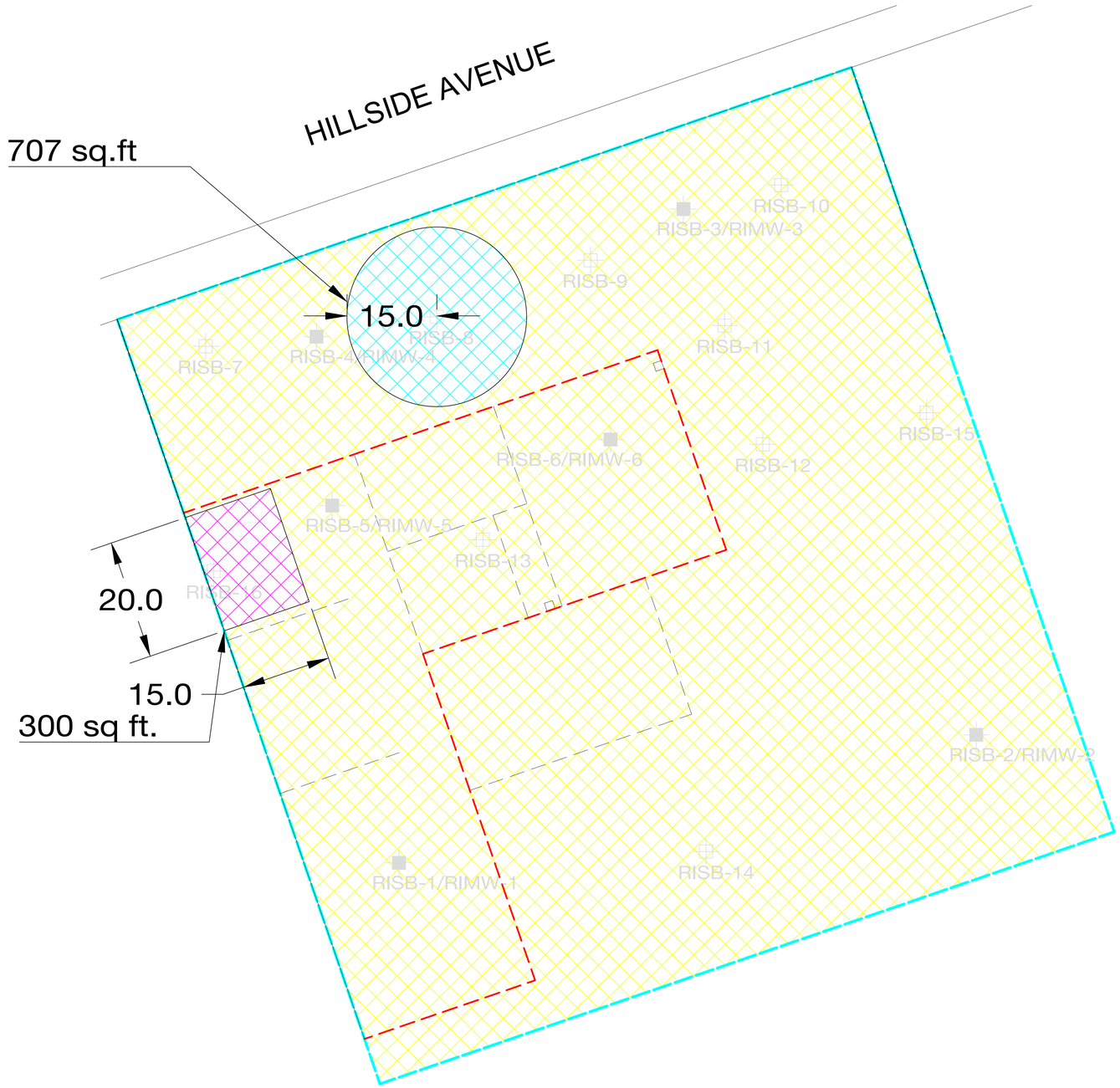
From USGS 7.5 Minute Topographic Map Of Jamaica, NY Quadrangle

N

Locational Diagram

Advanced Cleanup Technologies, Inc.
ENVIRONMENTAL CONSULTANTS
110 Main Street, Suite 103, Port Washington, NY 11050
Tel: 516-441-5800 Fax: 516-441-5511

Project No.: 8346-JANY	Figure No.: 1
Date: 06/12/2015	Scale: 1 inch = 2000 feet



Notes

Legend

	Site Boundary
	Former Building Boundary
	Former Petroleum Storage Facilities
	Former Storm and Floor Drains
MW-1	Monitoring Well
SB-1	Soil Boring
SV-1	Soil Vapor Point
EP-1	End Point
	Foundation Excavation (see SOE)
	Cellar Excavation to 13ft bgs
	Approximate Hotspot Excavation to 15ft
	Approximate Hotspot Excavation to 8ft
	Contaminated Soil Excavation to 2 ft

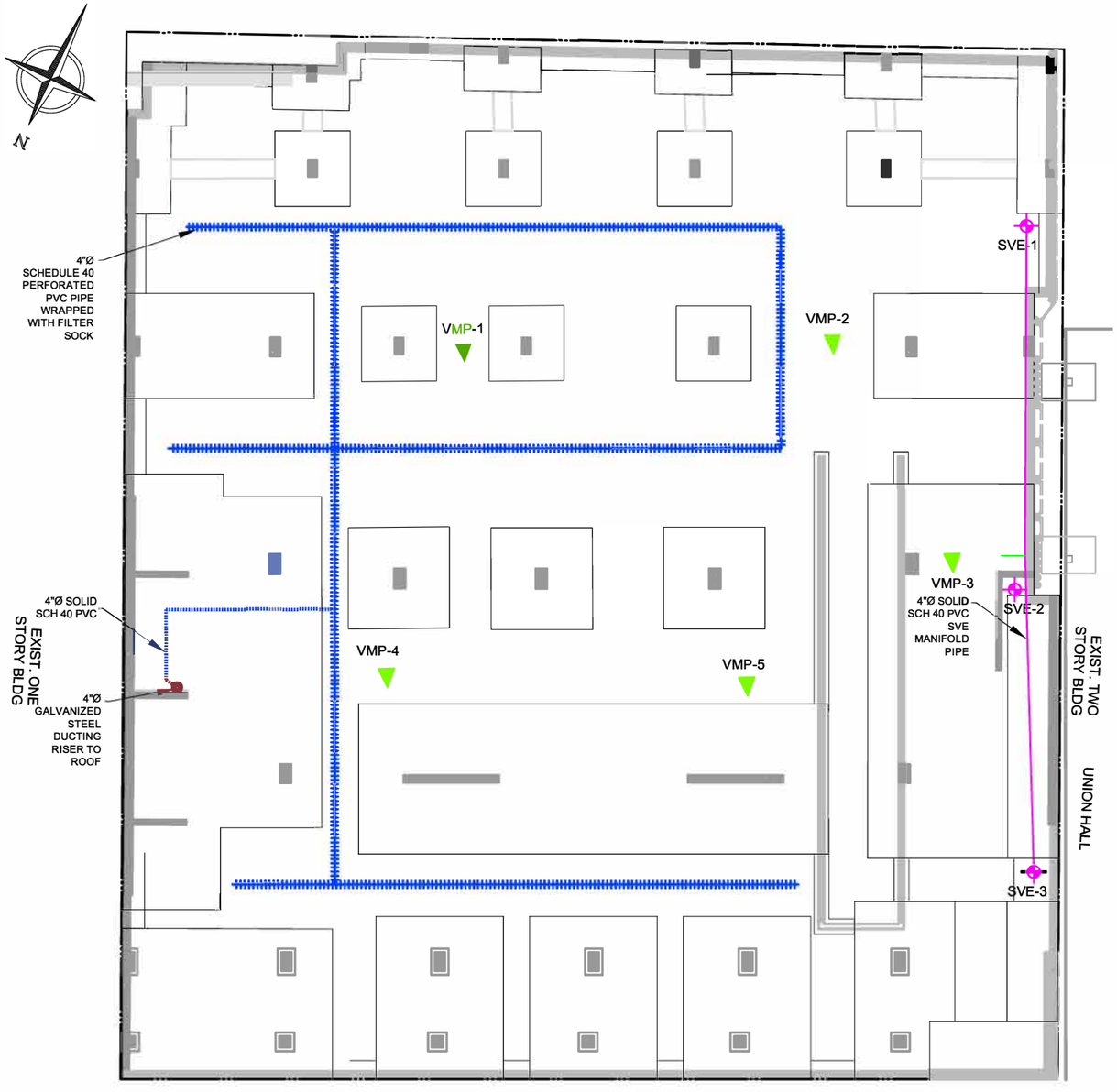
Title
Track 2 Cleanup Depths

No.	Revision/Issue	Date

Advanced Cleanup Technologies
Environmental Consultants
200 Broadhollow Road-Suite 207
Melville, New York 11747

Project Name and Address
C241199
148-28 Hillside AVE
Jamaica, NY
11435

Project: 8346-JANY	Figure: 2
Date: 2/3/2023	
Scale: As Noted	

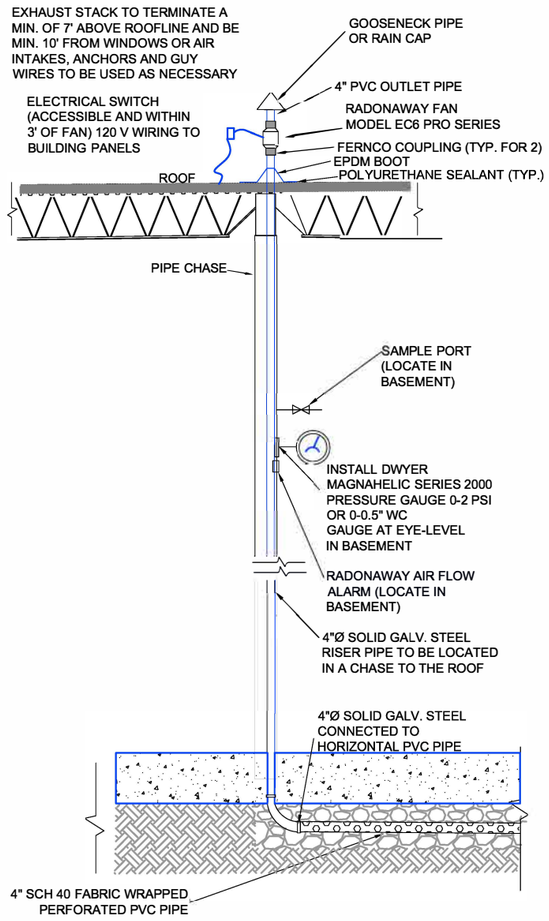


NOTES

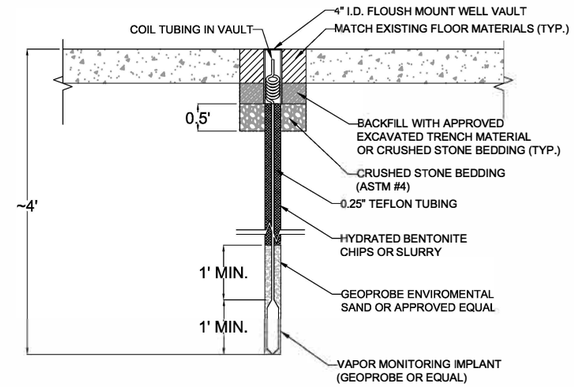
1. SSDS piping to be installed at 6-inches below the bottom of the Site building slab.
2. SVE pipe to be installed approximately 19-feet below grade with 5-feet of screen.
3. Bottom of the Site building slab when complete will be approximately 13-feet below grade. The Labor Union Building (148-06 Hillside Avenue) basement is located approximately 10-feet below surface grade. The anticipated SVE well depth will be approximately 6-feet below basement grade
4. Pipe routing for the SVE system will be determined by the Architect and Remedial Engineer.
5. Carbon drums for the SVE system, if needed, shall be installed in the basement and and upstream of the three SVE points.
6. Installation of the SVE system consists of a network of three, 4"Ø sch. 40 perforated PVC vertical SVE well points. the SVE points installed vertically along the western wall of the property at basement grade (13 feet below surface grade) and will extend another six feet below basement grade. The three SVE points will be horizontally connected and will be fitted with a steel riser pipe will be finished at the roof. One appropriate sized blower shall be used to provide vacuum for the SVE system to be determined through on-site testing.

LEGEND

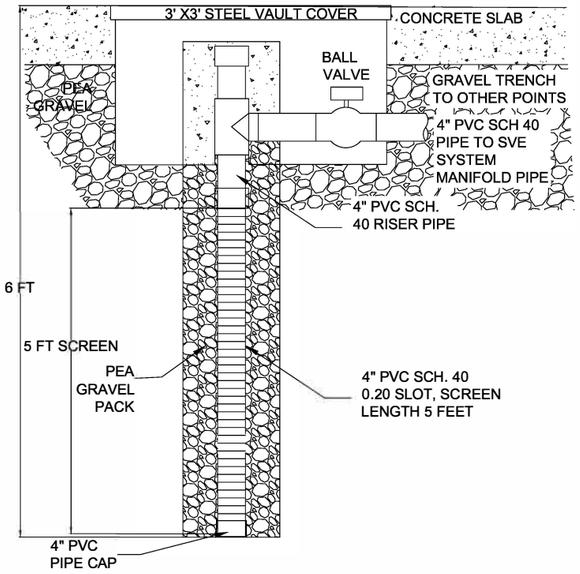
- VACUUM MONITORING POINT
- SSDS HORIZONTAL PIPING (SCH 40 PERFORATED PVC WRAPPED WITH FILTER SOCK)
- SSDS HORIZONTAL PIPING (SCH 40 PERFORATED PVC)
- SSDS SOLID 4" AIRTIGHT GALV. STEEL RISER PIPE
- PROPOSED 4"Ø SVE SCH. 40 PVC RISER FOR SVE POINT



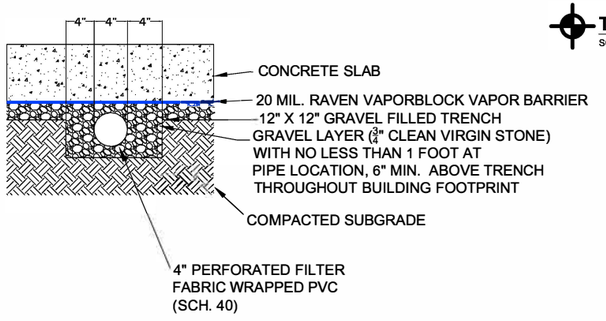
TYPICAL SSDS PROFILE
SCALE: NTS



TYPICAL VACUUM MONITORING POINT DETAIL
NTS



TYPICAL SVE WELL
SCALE: NTS



TYPICAL PIPE TRENCH DETAIL
SCALE: NTS

SSDS AND SVE LAYOUT PLAN

NYSDEC # C241199

148-28 HILLSIDE AVENUE QUEENS, NY

TYLL ENGINEERING & CONSULTING PC
169 Commack Road, Suite H173, Commack, NY 11725
PHONE: (631) 629-5373 info@tyllengineering.com

CA RICH GEOLOGY SERVICES
Certified Ground-Water and Environmental Specialists
17 Dupont Street, Plainview, New York 11803

SHEET TITLE:	SSDS SYSTEM LAYOUT		
DESIGNED BY:	JC	SCALE:	AS SHOWN
REVIEWED BY:	KT	DATE:	2/9/24
PLAN SHEET BY:	KT	PROJECT NO:	CAR2305

3