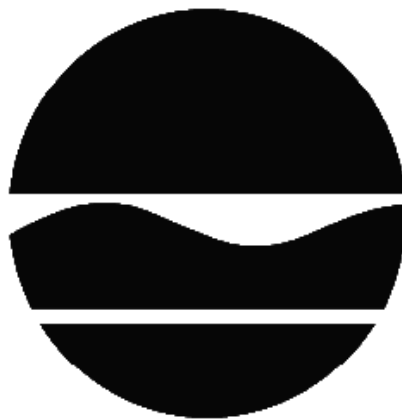


DECISION DOCUMENT

Purves Street Development
Brownfield Cleanup Program
Long Island City, Queens County
Site No. C241164
November 2014



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

DECLARATION STATEMENT - DECISION DOCUMENT

Purves Street Development
Brownfield Cleanup Program
Long Island City, Queens County
Site No. C241164
November 2014

Statement of Purpose and Basis

This document presents the remedy for the Purves Street Development site, a 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 (the Department) for the Purves Street Development site and the public's input to the proposed remedy presented by the Department.

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; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation

The remediation will include excavation and off-site disposal of contaminant source areas,

including grossly contaminated soil. Underground Storage Tanks (USTs) will be properly removed from the site. Soil which exceeds the restricted residential use SCOs, as defined by 6 NYCRR Part 375-6.8, will be excavated to the extent practical and transported off-site for disposal. At a minimum, the soil on Lot 23 will be excavated to a depth of approximately 3.5 feet below surface grade and soil on Lot 4 will be excavated to a depth of approximately 16.4 feet below surface grade (or 3 feet below the top of the existing basement slab) to remove historic fill material. Additional excavation to depths of approximately 18 feet below surface grade (or 5 feet below the top of the existing basement slab) will be required on the western portion of Lot 4 to remove the USTs and associated petroleum-impacted soil. The top two feet of any exposed surface soil must meet the restricted residential use SCOs.

Approximately 1,400 cubic yards of soil will be removed from the site. On-site soil which does not exceed the lower of the SCOs for the use of the site or the protection of groundwater may be used on the site to backfill the excavation to the extent that a sufficient volume of on-site soil is available. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and establish the designed grades at the site.

3. Cover System

A site cover will be required to allow for restricted residential use of the site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

4. Groundwater Treatment

Contaminated groundwater from dewatering operations associated with development of the site will be treated as necessary prior to discharge to the municipal sewer system.

5. Vapor Mitigation

Any enclosed sub-grade parking garages which are included for any future on-site building(s) are required by the New York City Mechanical Code to provide ventilation. For any areas of the future Site building(s) which do not include ventilated parking on the lowest level, a ventilation system consistent with the New York City Mechanical Code for ventilated parking garages, or similar engineered system to address soil vapor intrusion, will be required.

6. Institutional Control

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

- requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allows the use and development of the controlled property for restricted residential,

commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;

- restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOH;
- requires compliance with the Department approved Site Management Plan.

7. **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 above.
 - Engineering Controls: The cover system and ventilation system discussed above.

This plan includes, but may not be limited to:

- o an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
 - o descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
 - o provisions for the management and inspection of the identified engineering controls;
 - o maintaining site access controls and Department notification; and
 - o 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:
 - o 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:
 - o maintaining site access controls and Department notification; and
 - o 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.



November 26, 2014

Date

Robert Cozzy, Director
Remedial Bureau B

DECISION DOCUMENT

Purves Street Development
Long Island City, Queens County
Site No. C241164
November 2014

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), 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, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant.

The Department 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

The Department 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 the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repository:

Court Square Library
Attn: Alison McKenna-Miller
25-01 Jackson Avenue
Long Island City, NY 11101
Phone: 718-937-2790

Receive Site Citizen Participation Information By Email

Please note that the Department'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, Voluntary 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

Location: The site is located at 27-21 44th Drive and 44-18 Purves Street in the Long Island City section of Queens County. It is denoted on New York City tax maps as Block 268, Lots 4 and 23. The site is bordered by Jackson Avenue to the north, Purves Street to the east, Thomson Avenue to the south, and 44th Drive to the west. Lot 22 is immediately north of Lot 23 and is also part of the proposed development, but is not included in the Brownfield Cleanup Program. It should be noted that the property immediately adjacent and upgradient from the site is also in the BCP (see site no. C241162).

Site Features: The site is approximately 0.27 acres in size and consists of two parcels, both of which are currently vacant. Lot 4 is occupied by a vacant one-story garage/warehouse building with a full basement. Lot 23 is vacant and partially covered with a deteriorating concrete slab overgrown with vegetation. There is an egress easement benefiting Lot 4 permitting access to Purves Street across Lot 23.

Current Zoning and Land Use: The site is located in the Special Long Island City Mixed Use District within Area B of Queens Plaza Subdistrict. The site's zoning designation is M1-5/R9, which allows residential development at 8.0x floor area ratio (FAR).

Past Use of the Site: In 1936 a garage with a gasoline filling pump island was operated on Lot 4. Previous uses of Lot 4 include a paper warehouse and photo chemical warehouse. Lot 4 was improved with one-story buildings since approximately 1941. Lot 23 was used for manufacturing, labs, leather goods business, and a plating equipment business.

Geology and Hydrogeology: Groundwater underlying the site ranges from approximately 3.26 feet to 7.95 feet below grade surface (bgs) and flows to the north-northeast toward Purves Street. Beneath the site surface, material was observed to be urban fill predominately comprised of medium-brown to reddish-brown fine to coarse sand with varying amounts of clay, silt, gravel, brick, concrete, ash and coal. The urban fill layer extends to approximately 8 to 11 feet bgs in Lot 23 and 5 to 11 feet bgs in Lot 4. Beneath the fill was a gray-brown to gray-black silt or clay with some silt, trace fine sand, and trace organics. Bedrock is estimated to range from 50 feet to 70 feet bgs.

The nearest body of water is the Dutch Kills, located approximately 0.25 miles south-southeast of the site.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department 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 Volunteer. The Applicant does not have an obligation to address off-site contamination. However, the Department has determined that this site does not pose a significant threat to public health or the environment; 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
- 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. The Department 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:

TETRACHLOROETHYLENE (PCE)	BENZO(A)PYRENE
TRICHLOROETHENE (TCE)	ARSENIC
1,1,1 TCA	MERCURY
Isopropylbenzene	N-PROPYLBENZENE
LEAD	Butylbenzene
CHROMIUM	DIBENZ[A,H]ANTHRACENE
BARIUM	Chrysene
BENZO(B)FLUORANTHENE	HEXANE
BENZ(A)ANTHRACENE	TOLUENE
BENZENE	indeno(1,2,3-cd)pyrene

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

- groundwater
- soil

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.

There were no IRMs performed at this site during the RI.

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. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Nature and Extent of Contamination:

Based upon investigations conducted to date, the primary contaminants of concern at the site are volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and metals. A spill was reported (spill number 1302045) for the site on May 29, 2013, when petroleum-impacted soil was encountered on Lot 4 during a Phase II Environmental Site Assessment.

Soil - Soil exhibiting petroleum impacts (staining, odor, and elevated PID readings) was observed in the western portion of Lot 4 near the suspected underground storage tank. VOCs included n-propylbenzene at a maximum concentration of 4.5 ppm, which was found on Lot 4 in the vicinity of the suspected UST. SVOCs and metals were detected at concentrations that exceed the restricted residential use soil cleanup objectives (RRUSCOs) throughout the historic fill layer. SVOCs include: benzo(a)anthracene detected at a maximum concentration of 8.2 parts per million (ppm), benzo(a)pyrene at a maximum concentration of 6.6 ppm, benzo(b)fluoranthene at a maximum concentration of 7.2 ppm, chrysene at a maximum concentration of 9.4 ppm, dibenzo(a,h)anthracene at a maximum concentration of 1.5 ppm and indeno(1,2,3-cd)pyrene at a maximum concentration of 3.4 ppm. Elevated concentrations of lead were identified in shallow soil (0 to 2 feet below ground surface [bgs]) and deep (5 to 10 feet bgs) throughout Lot 4 and the southern portion of Lot 23 at a maximum concentration of 1,800 ppm. In the eastern portion of Lot 4 and western portion of Lot 23, elevated concentrations of chromium (up to 936 ppm) were found in the fill layer to depths of approximately 6 feet bgs. Other metals detected above the RRUSCOs include arsenic detected at a maximum concentration of 32 ppm; barium detected at a maximum concentration of 1,100 ppm; and mercury detected at a maximum concentration of 2.4 ppm. SVOCs and metals in soil are likely related to the historic site operations and the fill layer placed at the site.

Groundwater - In groundwater VOC, SVOC, and metal concentrations exceeded the ambient water quality standards (AWQS). Chlorinated solvents including tetrachloroethene (PCE), trichloroethene (TCE), 1,1,1-trichloroethane (1,1,1-TCA) are the primary contaminants of concern in groundwater. During the remedial investigation, maximum detected PCE, TCE and 1,1,1-TCA concentrations were 2,260 ppb, 885 ppb and 86 ppb, respectively, in groundwater in the northeastern portion of Lot 23. Higher concentrations of chlorinated solvents were identified in an off-site monitoring well on the Purves Street sidewalk immediately adjacent to the site boundary during a previous investigation (up to 16,000 ppb of PCE and 3,550 ppb of TCE). The chlorinated solvents in groundwater appear to be associated with an off-site source because the on-site concentrations are lower than off-site.

Petroleum related groundwater contaminants were found in groundwater on Lot 4 which are likely associated with the UST and the historic use of the site as a gasoline filling station.

Petroleum-related contaminants in groundwater include isopropylbenzene detected at 20 ppb; n-butylbenzene detected at 12 ppb, and n-propylbenzene detected at 31 ppb. Metals and SVOCs in the groundwater are likely associated with the fill layer and are related to the quality of the regional groundwater. Higher concentrations of VOCs were observed off-site in soil and groundwater and that additional off-site investigation will be performed by NYSDEC to further evaluate the nature and extent of off-site contamination.

Soil Vapor - VOCs including those related to petroleum and chlorinated solvents were detected at elevated concentrations in on-site soil vapor. The highest concentrations of PCE (652 micrograms per cubic meter [$\mu\text{g}/\text{m}^3$]) and TCE (54.8 $\mu\text{g}/\text{m}^3$) were found along the eastern boundary of the site adjacent to Purves Street in the vicinity of the elevated groundwater concentrations of those contaminants. The highest concentrations of petroleum-related VOCs in soil vapor (n-hexane at 1,060 $\mu\text{g}/\text{m}^3$, benzene at 223 $\mu\text{g}/\text{m}^3$, toluene at 953 $\mu\text{g}/\text{m}^3$) were found in the vicinity of the suspected UST on Lot 4 on the western side of the site and along the eastern boundary of the Site adjacent to Purves Street.

Significant threat:

NYSDEC and NYSDOH have determined that this site does not pose a significant threat to human health or the environment.

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*.

People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Direct contact with contaminants in the soil is unlikely because the site is fenced. Volatile organic compounds in groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect 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. Environmental sampling indicates soil vapor is contaminated on-site and actions have been recommended to address the potential for soil vapor intrusion to occur in future on-site buildings. Additional sampling will be completed to determine if soil vapor intrusion is a 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 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: 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 4: Restricted use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the Excavation and Site Cover remedy.

The elements of the selected remedy, as shown in Figure 2, 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; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation

The remediation will include excavation and off-site disposal of contaminant source areas, including grossly contaminated soil. Underground Storage Tanks (USTs) will be properly removed from the site. Soil which exceeds the restricted residential use SCOs, as defined by 6 NYCRR Part 375-6.8, will be excavated to the extent practical and transported off-site for disposal. At a minimum, the soil on Lot 23 will be excavated to a depth of approximately 3.5 feet below surface grade and soil on Lot 4 will be excavated to a depth of approximately 16.4 feet below surface grade (or 3 feet below the top of the existing basement slab) to remove historic fill material. Additional excavation to depths of approximately 18 feet below surface grade (or 5 feet below the top of the existing basement slab) will be required on the western portion of Lot 4 to remove the USTs and associated petroleum-impacted soil. The top two feet of any exposed surface soil must meet the restricted residential use SCOs.

Approximately 1,400 cubic yards of soil will be removed from the site. On-site soil which does not exceed the lower of the SCOs for the use of the site or the protection of groundwater may be used on the site to backfill the excavation to the extent that a sufficient volume of on-site soil is available. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and establish the designed grades at the site.

3. Cover System

A site cover will be required to allow for restricted residential use of the site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

4. Groundwater Treatment

Contaminated groundwater from dewatering operations associated with development of the site will be treated as necessary prior to discharge to the municipal sewer system.

5. **Vapor Mitigation**

Any enclosed sub-grade parking garages which are included for any future on-site building(s) are required by the New York City Mechanical Code to provide ventilation. For any areas of the future Site building(s) which do not include ventilated parking on the lowest level, a ventilation system consistent with the New York City Mechanical Code for ventilated parking garages, or similar engineered system to address soil vapor intrusion, will be required.

6. **Institutional Control**

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

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

7. **Site Management Plan**

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

- d. 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 above.
- Engineering Controls: The cover system and ventilation system discussed above.

This plan includes, but may not be limited to:

- o an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
 - o descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
 - o provisions for the management and inspection of the identified engineering controls;
 - o maintaining site access controls and Department notification; and
 - o the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.
- e. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
 - o a schedule of monitoring and frequency of submittals to the Department.
 - f. 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:
 - o maintaining site access controls and Department notification; and
 - o providing the Department access to the site and O&M records.

Figure 1 – Site Location Plan



Figure 2 – Excavation Plan

