

DECISION DOCUMENT

Enclave on 241st Street Development
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203077
March 2016



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

DECLARATION STATEMENT - DECISION DOCUMENT

Enclave on 241st Street Development
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203077
March 2016

Statement of Purpose and Basis

This document presents the remedy for the Enclave On 241st 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 Enclave On 241st 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 on-site buildings and existing concrete/asphalt surface cover will be demolished and materials which cannot be beneficially reused on site will be taken off-site for proper disposal in order to implement the remedy.

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

- removal of four known and any unknown underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination;
- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u) regardless of depth;
- non-aqueous phase liquids; and
- soils in and above the smear zone which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards.

Approximately 13,300 cubic yards of contaminated soil will be removed from the site for disposal.

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site. The site will be re-graded to accommodate installation of a cover system as described in remedy element 4.

3. Groundwater Dewatering and Treatment

Dewatering at the site will be required to enable excavation. Contaminated groundwater from dewatering operations will be treated as necessary prior to approved discharge to the municipal sewer system. As an alternative, the contractor may collect water for off-site disposal at a facility permitted to accept dewatered fluids.

4. 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 placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d).

5. Enhanced Bioremediation

In-situ enhanced biodegradation will be employed to treat contaminants in groundwater, and residual soil contamination below the water table, in the northern portion of the site where elevated concentrations of gasoline-related compounds were detected in groundwater. The biological breakdown of contaminants through aerobic respiration will be enhanced by the placement of an

oxygen release compound (ORC), or similar material into the subsurface. The method and depth of injection will be determined during the remedial design. Post-remediation groundwater monitoring will be performed to ensure that the groundwater treatment has been successful in restoring groundwater to pre-disposal/pre-release conditions, to the extent practicable. Additional ORC treatment may be applied if necessary.

6. Local Institutional Controls

If a sub-grade parking garage is constructed beneath the entire on-site future building, then the soil vapor remedial action objectives will be achieved through compliance with the New York City Mechanical Code, which requires proper ventilation.

7. 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 Department 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 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 or NYC DOH; and
- require compliance with the Department approved Site Management Plan.

8. 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 Paragraph 7 above and the local institutional control in Paragraph 6.

Engineering Controls: The soil cover discussed in Paragraph 4.

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;
- descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;

- a provision for evaluation of the potential for soil vapor intrusion of future buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- 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 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 to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department; and
- monitoring for vapor intrusion for any occupied existing or future buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

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.

March 31, 2016



Date

Robert Cozzy, Director
Remedial Bureau B

DECISION DOCUMENT

Enclave on 241st Street Development
Bronx, Bronx County
Site No. C203077
March 2016

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:

Wakefield Library
Attn: Tiffany Alston
4100 Lowerre Place
Bronx, NY 10466
Phone: 718-652-4663

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 Enclave on 241st Street Development site is located in an urban area in the Wakefield section of the Bronx. The site is bounded by East 241st Street to the northeast, White Plains Road to the northwest, Furman Avenue to the southeast and East 240th Street to the southwest.

Site Features: The site is comprised of an approximate 28,720 square-foot irregularly shaped lot that includes the following addresses: 714 East 241st Street (former lot 1), developed with a vacant one-story office building with basement; 4643 Furman Avenue (former lot 3), developed with an asphalt-paved parking lot; 4641 Furman Avenue (former lot 6), undeveloped dirt and grass lot; 4644 White Plains Road (former lot 59), developed with a vacant one-story former gasoline station and auto body shop; 700 East 241st Street (former lot 62), developed with a vacant one-story former gasoline station and auto body shop; and 704 East 241st Street (former lot 65), undeveloped dirt and grass lot. These six lots were merged into a single lot in August 2015.

Current Zoning and Land Use: The site is currently vacant but is located in an Industrial Zoned area identified as M1-1. During redevelopment of the site, the project will be rezoned from M1-1 to R7-D with a C4-4 overlay. This zoning allows residential use with first floor commercial use.

Past Use of the Site: The north and northwestern portions of the Site have been used for gasoline filling stations and automobile repair since at least 1935.

Site Geology and Hydrogeology: The site is characterized by a 1 to 3 foot layer of brown silty sand with brick historic fill material, underlain by a native brown silty-sand or sand and grey clay. The area of the Bronx in which the site is located is underlain by glacial deposits known as ground moraine. The ground moraine is a widespread dense layer of till material that typically consists of clay, sand and boulders.

Bedrock is estimated at approximately 140 feet below ground surface (bgs) and is composed of Middle Ordovician to Lower Cambrian-Ordovician Hartland Formation which generally consists of muscovite-biotite-quartz schist with minor garnet. No bedrock outcrops were observed at the site.

Based on the remedial investigation (RI), the depth to groundwater ranged from 9.5 to 13 feet bgs with shallower groundwater in the northern portion of the site. The groundwater flow is to the south.

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.

Off-site petroleum-related contamination will be addressed under the DEC Petroleum Spill Response program.

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. 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:

xylene (mixed)	toluene
trichloroethene (TCE)	lead
cis 1,2, dichloroethene (cis-1,2 DCE)	

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:

Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), and pesticides.

Soil: Based on the investigations conducted to date, the primary contaminants of concern detected in soil include VOCs and metals. Soil contains xylenes at 600 parts per million (ppm) compared to a soil cleanup objective (SCO) of 1.6 ppm for protection of groundwater. Lead has been found in the soil at a maximum concentration of 1,980 ppm, which is above the restricted residential SCO of 400 ppm.

Site-related soil contamination does not appear to extend off-site.

Groundwater: Groundwater in the middle and upgradient areas of the site contains petroleum related VOCs such as xylene at a maximum of 15,000 parts per billion (ppb) and toluene at a maximum of 19,000 ppb. The Class GA water quality standard for each of these compounds is 5 ppb. One well in the middle of the site (MW-29) had a 2 inch layer of petroleum product on the top of the water surface. It was identified as degraded number 2 fuel oil.

Based on sample results from wells near the downgradient property boundary, groundwater contamination does not appear to be leaving the site.

Soil Vapor: In soil gas, the highest detections of chlorinated compounds were cis 1,2 dichloroethene (cis-1,2 DCE) at 4,600 micrograms per cubic meter (ug/m3) and trichloroethylene (TCE), detected at 760 ug/m3 along Furman Avenue, near the boundary of the site. Cis-1,2, DCE was also detected at 4500 ug/m3 near the well that contained the petroleum product.

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 who enter the site could contact contaminants in the soil by walking on the site, digging, or otherwise disturbing the soil. 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 the groundwater or soil may move into the soil vapor (air spaces within the soil), which in turn may move into overlying 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. The site is currently vacant. However, the potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site redevelopment and occupancy.

Environmental sampling is needed to determine whether 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 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: 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, Groundwater Treatment 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 on-site buildings and existing concrete/asphalt surface cover will be demolished and materials which cannot be beneficially reused on site will be taken off-site for proper disposal in order to implement the remedy.

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

- removal of four known and any unknown underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination;
- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u) regardless of depth;
- non-aqueous phase liquids; and
- soils in and above the smear zone which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards.

Approximately 13,300 cubic yards of contaminated soil will be removed from the site for disposal.

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site. The site will be re-graded to accommodate installation of a cover system as described in remedy element 4.

3. Groundwater Dewatering and Treatment

Dewatering at the site will be required to enable excavation. Contaminated groundwater from dewatering operations will be treated as necessary prior to approved discharge to the municipal sewer system. As an alternative, the contractor may collect water for off-site disposal at a facility permitted to accept dewatered fluids.

4. 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 placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d).

5. Enhanced Bioremediation

In-situ enhanced biodegradation will be employed to treat contaminants in groundwater, and residual soil contamination below the water table, in the northern portion of the site where elevated concentrations of gasoline-related compounds were detected in groundwater. The biological breakdown of contaminants through aerobic respiration will be enhanced by the placement of an oxygen release compound (ORC), or similar material into the subsurface. The method and depth of injection will be determined during the remedial design. Post-remediation groundwater monitoring will be performed to ensure that the groundwater treatment has been successful in restoring groundwater to pre-disposal/pre-release conditions, to the extent practicable. Additional ORC treatment may be applied if necessary.

6. Local Institutional Controls

If a sub-grade parking garage is constructed beneath the entire on-site future building, then the soil vapor remedial action objectives will be achieved through compliance with the New York City Mechanical Code, which requires proper ventilation.

7. 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 Department 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 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 or NYC DOH; and
- require compliance with the Department approved Site Management Plan.

8. 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 Paragraph 7 above and the local institutional control in Paragraph 6.

Engineering Controls: The soil cover discussed in Paragraph 4.

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;
- descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion of future buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- 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 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 to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department; and
- monitoring for vapor intrusion for any occupied existing or future buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.



LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

555 Long Wharf Drive
New Haven, CT 06511-6107
T: 203.562.5771 F: 203.789.6142
www.langan.com

NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
PENNSYLVANIA CONNECTICUT FLORIDA

ABU DHABI ATHENS DOHA
DUBAI ISTANBUL

Project

**ENCLAVE ON
241ST STREET**
BLOCK No. 5087, LOT No. 1

Bronx

New York

Drawing Title

**SITE
LOCATION MAP**

Project No.

140115301

Date

12/30/2015

Scale

1"=1,000'

Drawn By

JPH

Submission Date

12/30/2015

Figure

1

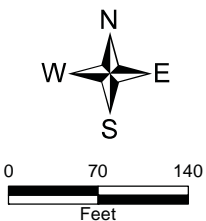
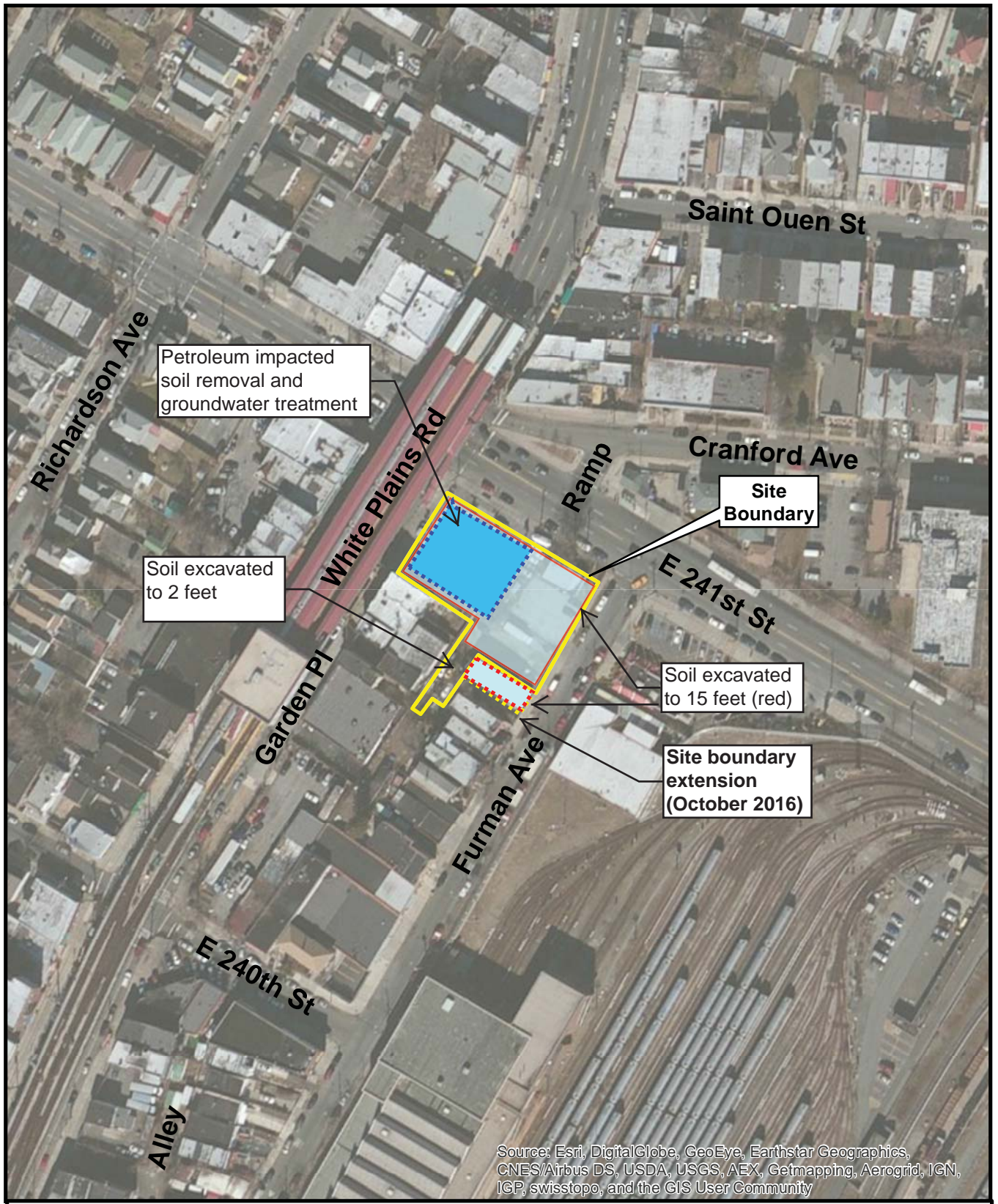


Figure 2
Site Map
 Enclave on 241st Street Development
 Bronx, Bronx County
 Site No. C203077



