# DECISION DOCUMENT

Bronx Point
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203117
May 2020

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

# DECLARATION STATEMENT - DECISION DOCUMENT

Bronx Point
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203117
May 2020

**Statement of Purpose and Basis**

This document presents the remedy for the Bronx Point 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 Bronx Point 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.
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at

a minimum, a 20-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

**2. Excavation**

The existing on-site structures(s) will be demolished and materials which can't 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:

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- soils 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; and
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

All soils in the upper two feet which exceed the restricted residential soil cleanup objectives (SCOs) will be excavated and transported off-site for disposal. In addition, excavation and removal of petroleum-contaminated source material, as defined above, will be extended to the groundwater table. Approximately 26,700 cubic yards of contaminated soil will be removed from the site.

**3. Excavation Dewatering and Treatment**

Dewatering will be required to allow for excavation of petroleum-contaminated source material under dry conditions. Dewatering fluids will be treated as necessary prior to discharge to the storm sewer system under a SPDES permit equivalent.

**4. Backfill**

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling of the excavation and establish the designed grades at the site.

**5. Cover System**

A site cover will be required to allow for restricted residential use of the site in areas where the upper two feet of exposed surface soil will exceed the applicable SCOs. Where a soil cover is to be used 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 for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

**6. In-Situ Chemical Oxidation**

In situ chemical oxidation (ISCO) will be implemented to treat remaining petroleum contaminants in groundwater. A chemical oxidant will be injected into the subsurface to destroy the contaminants in the areas of deeper source-area excavations via injection wells or direct soil

mixing. The method and depth of oxidant delivery will be determined during the remedial design.

**7. Vapor Mitigation**

Any proposed on-site buildings will be required to have a sub-slab depressurization system, or other acceptable measures, to mitigate the potential migration of vapors into the building.

**8. Institutional Control**

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

- require the remedial party or site owner to complete and submit to 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 NYCDOHMH; and
- require compliance with the Department approved Site Management Plan.

**9. Site Management Plan**

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

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

   - Institutional Controls: The Environmental Easement discussed in Paragraph 7 above.
   - Engineering Controls: The cover system discussed in Paragraph 4, the ISCO discussed in paragraph 5 and the vapor mitigation system(s) discussed in Paragraph 6.

   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 water 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 groundwater and soil vapor to assess the performance and effectiveness of the remedy;
   - a schedule of monitoring and frequency of submittals to the Department;
   - monitoring for vapor intrusion for any buildings on the site, as may be required by the

Institutional and Engineering Control Plan discussed above.

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

May 29, 2020

Date

Gerard Burke, Director
Remedial Bureau B

# DECISION DOCUMENT

Bronx Point
Bronx, Bronx County
Site No. C203117
May 2020

## 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 repositories:

DECInfo Locator - Web Application
https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C203117

New York Public Library - High Bridge
High Bridge Library
78 West 168th street
Bronx, NY 10452
Phone: (718) 293-7800

Bronx Community Board 4

1650 Selwyn Avenue, Suite 11A
Bronx, NY 10457
Phone: 718-299-0800

**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 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 575 Exterior Street and identified on the Tax Map as Block 2356, Lot 2, in the West Concourse neighborhood of the Bronx, NY. The site is about 194,772 square feet (4.47 acres) and bounded by Mill Pond Park to the north; the elevated Major Deegan Expressway and Exterior Street to the east; East 149th Street/145th Street Bridge followed by a recycling facility to the south; and a railroad right-of-way followed by the Harlem River to the west.

Site Features:
The site is currently comprised of a vacant, milled asphalt-paved lot with one remnant steel loading structure on the western portion of the site.

Current Zoning and Land Use:
The site is currently unoccupied and located in a R7-2 (residential)/C2-5 (commercial) mixed-use district and is within the Special Harlem River Waterfront District. The adjoining parcels are used for commercial and light industrial purposes, with the surrounding area generally consisting of residential, commercial, light industrial, and institutional (schools and churches) use.

Past Use of the Site:
Historic operations at the site include a lumberyard and sawmill (1891-1908), a machine shop (1908), a coal yard (1908-1935), a New York Edison Company facility (1922), and a railroad freight yard (1908-1980). Records indicate that from about 1977 through 2007 three buildings were located on the eastern side of the site, which have since been demolished.

Site Geology and Hydrogeology:
According to the United States Geology Survey (USGS) 7.5-Minute Quadrangle Map, the site elevation is about 3 feet above mean sea level. The general stratigraphy of the site, from the surface down, consists of up to 24 feet of historic fill, followed by alternating layers of clay, silt, sand and bedrock. The historic fill layer consists of black, brown and gray sand with varying amounts of gravel, silt, concrete, brick, and shell fragments. Bedrock was encountered at about

67 feet below ground surface (bgs) in the central and southeastern portion of the site and at about 78 feet bgs in the southwestern portion of the site. Groundwater flows north/north west towards the Harlem River and was encountered at depths of about 6 to 13.05 feet bgs at the site during the Remedial Investigation (RI).

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(s) under the Brownfield Cleanup Agreement is a/are Volunteer(s). The Applicant(s) does/do 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

### 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:

| | |
|---|---|
| benzo(a)pyrene | lead |
| benzo(a)anthracene | mercury |
| benzo(k)fluoranthene | chromium |
| benzo(b)fluoranthene | barium |
| chrysene | naphthalene |
| dibenz[a,h]anthracene | vinyl chloride |
| indeno(1,2,3-CD)pyrene | tetrachloroethene (PCE) |
| arsenic | 1,2-dichloroethene |
| cyanides(soluble cyanide salts) | trichloroethene (TCE) |

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.

Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), pesticides, and emerging contaminants (ECs). Based upon investigations conducted to date, the primary contaminants of concern include petroleum-related SVOCs and metals in soil, and petroleum-related SVOCs in groundwater.

Soil - No VOCs were detected above the restricted residential use soil cleanup objectives (RRSCOs). Eight SVOCs, mainly polycyclic aromatic hydrocarbons (PAHs), were detected at concentrations above the RRSCOs in 29 soil borings. These PAHs were associated with visually petroleum-impacted soil and in historic fill collected at depths from 0 to 24 feet below ground surface (bgs). The maximum concentrations include benzo(a)anthracene at 16.6 parts per million (ppm) (RRSCO is 1 ppm), benzo(a)pyrene at 17.5 ppm (RRSCO is 1 ppm), benzo(b)fluoranthene at 14.1 ppm (RRSCO is 1 ppm), benzo(k)fluoranthene at 12 ppm (RRSCO is 3.9 ppm), chrysene at 14.2 ppm (RRSCO is 3.9ppm), dibenzo(a,h)anthracene at 3.43 ppm (RRSCO is 0.33 ppm), indeno(1,2,3-cd)pyrene at 9.98 ppm (RRSCO of 0.5 ppm), and naphthalene at 14.40 ppm (RRSCO is 100 ppm).

Several metals were detected at concentrations above the RRSCOs in soil, including arsenic at 41.9 ppm (RRSCO is 16 ppm), barium at 2,710 ppm (RRSCO is 400 ppm), cadmium at 6 ppm (RRSCO is 4.3 ppm), cyanide at 1,290 ppm (RRSCO is 27 ppm), lead at 6,600 ppm (RRSCO is 400 ppm), and mercury at 24.6 ppm (RRSCO is 0.81 ppm). They were primarily found in historic fill at depths from 0 to 24 feet bgs. No PCBs, pesticides or herbicides were detected above RRSCOs.

No standards currently exist in New York State for 1,4-dioxane or per- and polyfluoroalkyl substances (PFAS) in soil, so soil sample concentrations were compared to NYSDEC screening values of 0.1 ppm for 1,4-dioxane and 1 part per billion (ppb) for PFAS. 1,4-dioxane was not detected in soil samples. One or more of eight individual PFAS compounds were detected in 18 of 22 soil samples analyzed for PFAS. Perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) were detected above the NYSDEC PFAS screening value of 1 ppb at a maximum concentration of 5.39 ppb.

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

Groundwater - One VOC, 1,2,4-trimethylbenzene, was detected at a concentration above the ambient water quality standards (AWQS) of 5 parts per billion (ppb) at a concentration of 7.57 ppb. Seven PAHs namely, benzo(a)anthracene at 1.32 ppb (AWQS is 0.002 ppb), benzo(a)pyrene at 1.52 ppb (AWQS is non-detect), benzo(b)fluoranthene at 1.21 ppb (AWQS is 0.002 ppb), benzo(k)fluoranthene at 1.3 ppb (AWQS is 0.002 ppb), chrysene at 1.39 ppb (AWQS is 0.002 ppb), indeno(1,2,3-cd)pyrene at 0.871 ppb (AWQS is 0.002 ppb), and naphthalene at 14.2 ppb (AWQS is 10 ppb) were detected in nine monitoring wells. Iron, magnesium, manganese, selenium and sodium were the only metals detected above AWQS, but these are associated with the site's proximity to saline surface water. Levels of PFOS and/or PFOA was detected above the NYSDEC screening level of 10 ppt in all groundwater wells with PFOS at a maximum concentration of 86.9 parts per trillion (ppt) and PFOA at 45.7 ppt. 1,4-dioxane was detected above the NYSDEC screening level of 1 ppb in one groundwater sample collected from monitoring well MW06 at 2.2 ppb.

Data does not indicate any off-site impacts in groundwater related to this site. Data does not indicate that the site is a possible source of PFOS or PFOA contamination.

Soil Vapor - Chlorinated VOCs including tetrachloroethene (PCE) and vinyl chloride were detected in soil-vapor samples. PCE was detected at a maximum concentration of 7.3 micrograms per cubic meter ($\mu g/m^3$). Vinyl chloride was detected at a maximum concentration of 60 $\mu g/m^3$. As no occupied structures exist at the site, no subslab or indoor air samples were taken.

Data does not indicate any off-site impacts in soil vapor related to this 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 partially fenced and covered by asphalt, people will not come into contact with site-related soil and groundwater contamination unless they dig below the surface. Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains water from a different source not affected by this contamination. Volatile organic compounds in soil vapor (air spaces within the soil) may move into buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Because there is no on-site building, inhalation of site contaminants in indoor air due to soil vapor intrusion does not represent a concern for the site in its current condition. However, the potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site development. In addition, sampling indicates soil vapor intrusion is not 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.
- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

**Soil**

**RAOs for Public Health Protection**

- Prevent ingestion/direct contact with contaminated 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, Site Cover and Soil Vapor Mitigation 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;
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- 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.
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at a minimum, a 20-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

**2. Excavation**

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- soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

All soils in the upper two feet which exceed the restricted residential soil cleanup objectives (SCOs) will be excavated and transported off-site for disposal. In addition, excavation and removal of petroleum-contaminated source material, as defined above, will be extended to the groundwater table. Approximately 26,700 cubic yards of contaminated soil will be removed from the site.

**3. Excavation Dewatering and Treatment**

Dewatering will be required to allow for excavation of petroleum-contaminated source material under dry conditions. Dewatering fluids will be treated as necessary prior to discharge to the

storm sewer system under a SPDES permit equivalent.

**4. Backfill**

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling of the excavation and establish the designed grades at the site.

**5. Cover System**

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**7. Vapor Mitigation**

Any proposed on-site buildings will be required to have a sub-slab depressurization system, or other acceptable measures, to mitigate the potential migration of vapors into the building.

**8. Institutional Control**

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

- require the remedial party or site owner to complete and submit to 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 NYCDOHMH; and
- require compliance with the Department approved Site Management Plan.

**9. Site Management Plan**

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

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements

necessary to ensure the following institutional and/or engineering controls remain in place and effective:

- Institutional Controls: The Environmental Easement discussed in Paragraph 7 above.
- Engineering Controls: The cover system discussed in Paragraph 4, the ISCO discussed in paragraph 5 and the vapor mitigation system(s) discussed in Paragraph 6.

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 water 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.

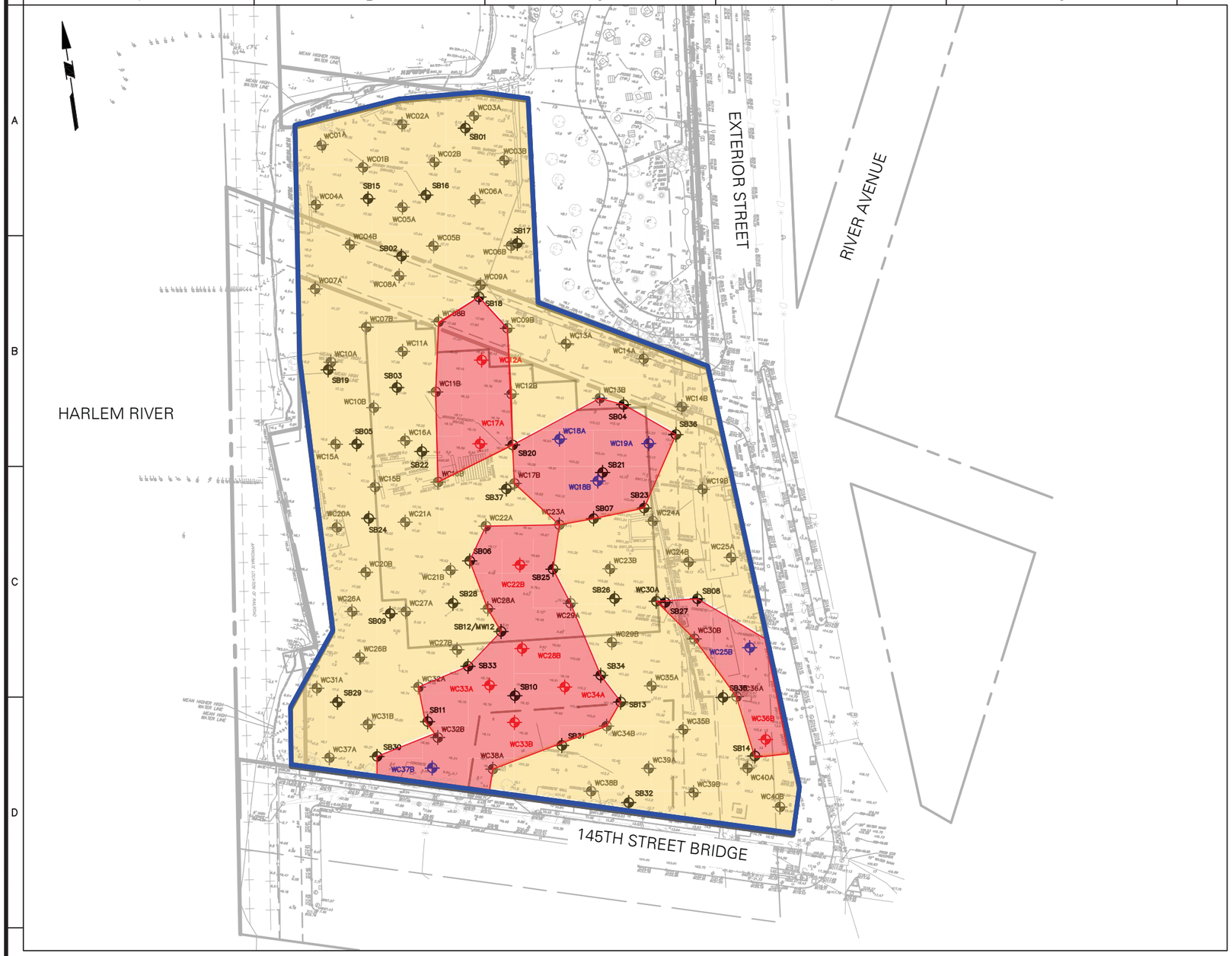
b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
   - monitoring of groundwater and soil vapor to assess the performance and effectiveness of the remedy;
   - a schedule of monitoring and frequency of submittals to the Department;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

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


MAP REFERENCE: USGS 7.5 MINUTE CENTRAL PARK NY-NJ TOPOGRAPHIC QUADRANGLE, DATED 2016

APPROXIMATE SITE BOUNDARY

| | Project | Figure Title | | Figure No. |
|---|---|---|---|---|
| | **BRONX POINT**<br>BLOCK No. 2356, LOT No. 2<br>BRONX NEW YORK | **SITE LOCATION MAP** | | 1 |




LEGEND:

- APPROXIMATE SITE BOUNDARY
- APPROXIMATE PHASE I BUILDING FOOTPRINT
- APPROXIMATE PHASE II BUILDING FOOTPRINT
- WASTE CHARACTERIZATION OR REMEDIAL INVESTIGATION SAMPLING LOCATION
- WASTE CHARACTERIZATION SAMPLING LOCATION WITH EVIDENCE OF PETROLEUM IMPACTS (I.E., ODORS, STAINING, ELEVATED PID READINGS) OBSERVED ABOVE THE GROUNDWATER TABLE
- WASTE CHARACTERIZATION SAMPLING LOCATION WITH PETROLEUM-RELATED VOCs AND/OR NAPHTHALENE EXCEEDING THE LOWER OF PROTECTION OF GROUNDWATER AND RESTRICTED USE RESTRICTED-RESIDENTIAL USE SOIL CLEANUP OBJECTIVES ABOVE THE GROUNDWATER TABLE
- HOTSPOT LOCATION TO BE EXCAVATED TO GROUNDWATER TABLE ELEVATION AND AREA OF ISCO GROUNDWATER TREATMENT
- APPROXIMATE AREA OF EXCAVATION OF 2 FEET OF HISTORIC FILL

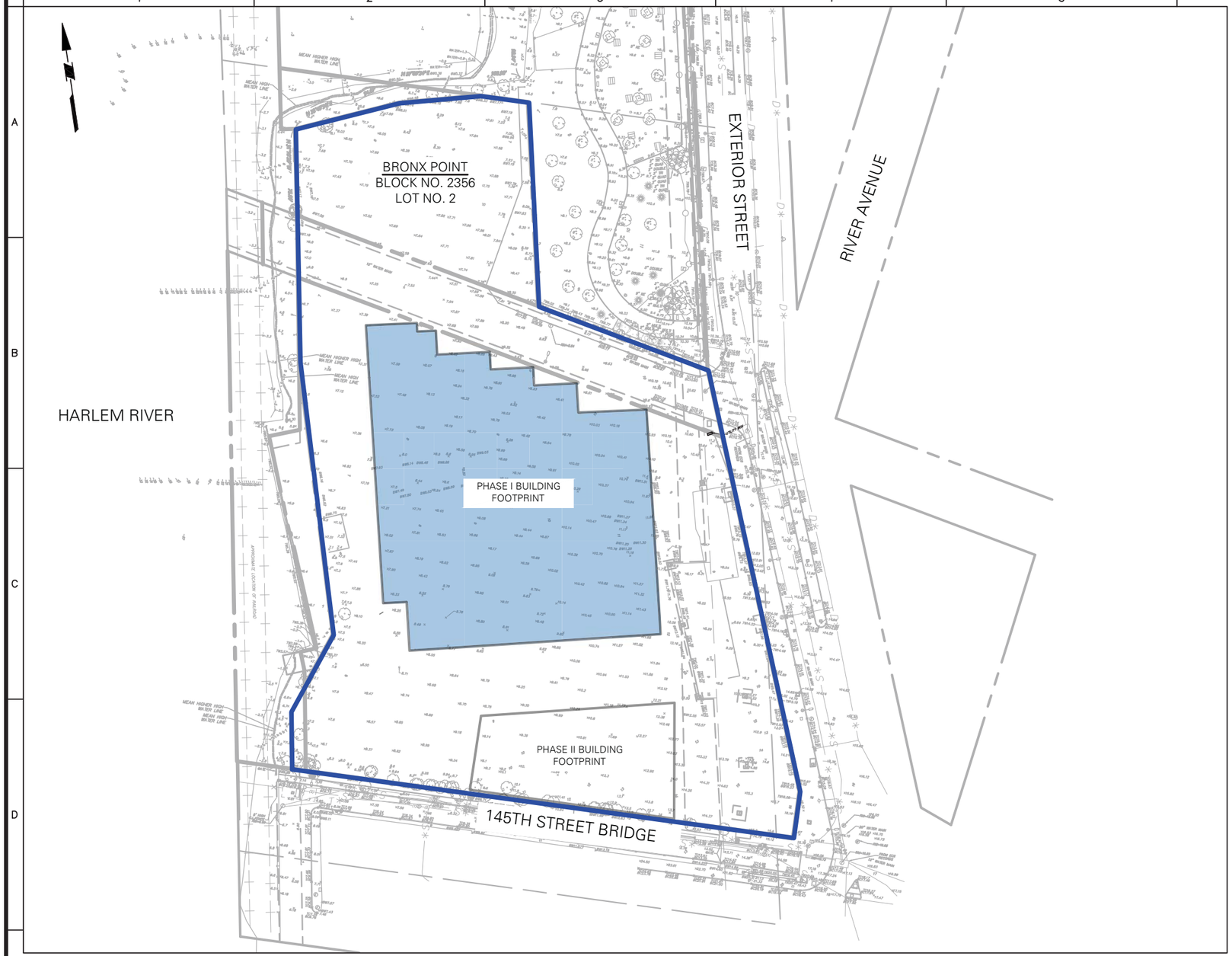
NOTES:

1. BASEMAP SOURCE: SURVEY PREPARED BY LANGAN DATED OCTOBER 20, 2017.
2. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. NORTH ARROW SHOWS TRUE NORTH.
4. SAMPLE LOCATIONS WERE FIELD MEASURED USING A GLOBAL POSITIONING SYSTEM (GPS) UNIT BY LANGAN FIELD STAFF.
5. BGS = BELOW GRADE SURFACE
6. VOC = VOLATILE ORGANIC COMPOUND
7. PID = PHOTOIONIZATION DETECTOR
8. ISCO = IN-SITU CHEMICAL OXIDATION



100 0 50 100
SCALE IN FEET

| | Project | Figure Title | | Figure No. |
|---|---|---|---|---|
| | BRONX POINT<br>BLOCK No. 2356, LOT No. 2<br>BRONX NEW YORK | TRACK 4 CLEANUP PLAN | | 2 |




LEGEND:

- APPROXIMATE SITE BOUNDARY
- PROPOSED BUILDING FOOTPRINTS
- VAPOR MITIGATION SYSTEMS

NOTES:

1. BASEMAP SOURCE: SURVEY PREPARED BY LANGAN DATED OCTOBER 20, 2017.
2. NORTH ARROW SHOWS TRUE NORTH.



100 0 50 100
SCALE IN FEET

| Project | Figure Title | | Figure No. |
|---|---|---|---|
| BRONX POINT<br>BLOCK No. 2356, LOT No. 2<br>BRONX NEW YORK | CONCEPTUAL VAPOR MITIGATION SYSTEMS PLAN | | 3 |