DECISION DOCUMENT

Hunts Point Parcel D
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203100
February 2020

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

DECLARATION STATEMENT - DECISION DOCUMENT

Hunts Point Parcel D
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203100
February 2020

Statement of Purpose and Basis

This document presents the remedy for the Hunts Point Parcel D 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 Hunts Point Parcel D 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;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings 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. In-Situ Solidification

In-situ solidification (ISS) will be implemented in an approximately 4.5-acre area, as indicated on Figure 3. The treatment zone will extend from grade to approximately 15 feet below grade, approximately two feet into the clay layer. ISS is a process that binds the contaminants in-place creating a low-permeability mass. Purifier and/or coal tar waste will be mixed in-place together with solidifying agents (typically Portland cement) or other binding agents using an excavator or augers. The fill material, purifier waste and/or coal tar and binding agents are mixed to produce a solidified mass resulting in a low-permeability monolith. The solidified mass will then be covered with a cover system as described in Paragraph 4 below to prevent direct exposure to the solidified mass. The resulting solid matrix reduces or eliminates mobility of contamination and reduces or eliminates the matrix as a source of groundwater contamination.

Approximately 500 cubic yards of over-size hardened coal tar that cannot be reduced to a minimum size to allow for effective ISS will be segregated and taken off-site for proper disposal.

3. Barrier Wall

A perimeter barrier wall will be installed, as indicated on Figure 3, to enclose the purifier waste/coal tar waste solidification area. The barrier wall will consist of vertical steel sheeting with interlocking and sealed joints that will extend up to two feet into the glacial till (located above bedrock) or refusal. The top of the sheeting will extend approximately 8 feet above existing grade to allow for volume increase associated with the ISS process and to accommodate the 4-foot soil cover over the ISS treatment area as described in Paragraph 4 below. If steel sheeting cannot be installed, a soil-bentonite slurry wall will be installed instead. In which case, the outer edges of the ISS treatment area will be cut back and sloped. Information gathered during the implementation of the approved ISS remedy at another Hunts Point site showed that cyanide bound up in purifier waste becomes soluble when the purifier waste comes into contact with higher pH water associated with solidifying agents such as Portland cement. The barrier wall will prevent off-site migration of cyanide contamination.

4. Cover System

A site cover will be required to allow for commercial use of the site in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is to be used it will be a minimum of one foot 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. Where the soil cover is required over the ISS treatment area, it will consist of a minimum of four feet of soil meeting the SCOs for commercial use. For areas where solidified material underlies the cover, the solidified material itself will serve as the demarcation layer due to the nature of the material.

On-site soil/fill, including soil excavated during the installation of the barrier wall described in Paragraph 3, which meets the requirements of 6 NYCRR Part 375-6.7(d), may be used to re-grade the site.

5. Dewatering and Treatment Prior to Discharge

The ISS treatment area will be dewatered prior to performing solidification. Contaminated groundwater encountered during dewatering will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Liquids discharged into the New York City sewer system will be addressed through approval by the New York City Department of Environmental Protection. Alternatively, fluids generated during dewatering will be treated to meet NYSDEC's Generic Effluent Criteria for Groundwater Discharges prior to discharge on-site. Liquids discharged to surface water will be treated to meet the requirements of a State Pollutant Discharge Elimination System (SPDES) equivalency permit.

6. Institutional Controls

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 commercial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOH; and
- require 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 in Paragraph 6 above.
- Engineering Controls: The ISS mass discussed in Paragraph 2, the barrier wall discussed in Paragraph 3, and the cover system described in Paragraph 4 above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination, or in areas that have undergone ISS;
- 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 for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- a provision that should a building foundation or building slab be removed in the future, a

cover system consistent with that described in Paragraph 6 above will be placed in any areas where the upper one foot of exposed surface soil exceeds the applicable soil cleanup objectives (SCOs);
- 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 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 buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

c. The Site Management Plan will be subject to an agreement between the tenant and the property owner (the City) for site access and any other pertinent provisions to enable maintenance of cover systems, management of remaining contamination, excavation, inspections, sampling, and/or any other requisite activities.

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.

February 11, 2020

Date

Gerard Burke, Director
Remedial Bureau B

DECISION DOCUMENT

Hunts Point Parcel D
Bronx, Bronx County
Site No. C203100
February 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:

New York Public Library - Woodstock Branch
761 East 160th Street
Bronx, NY 10456
Phone: (718) 665-6255

Bronx Community Board 2
1029 E. 163rd Street
Bronx, NY 10459
Phone: (718) 328-9125

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 in a commercial and industrial area of the Hunts Point section of the Bronx. The site is an approximate 6.7-acre lot within a larger tax lot containing multiple parcels of land and is identified on New York City tax maps as Block 2781, Lot 500. The site is bound to the north by a produce distribution warehouse located at 240 Food Center Drive, to the east by a large stone rip-rap bulkhead and the Bronx River, to the south by a food distribution warehouse located at 400 Food Center Drive (which has been accepted into the Brownfield Cleanup Program (BCP) under BCP Site #C203101), and to the west by Food Center Drive and a railroad spur.

Site Features: The site is currently vacant with the investigative area being mostly level terrain. The site is covered in vegetation with some wooded areas, although a large area of land devoid of vegetation is located on the western side of the site where purifier waste is exposed at the surface. The site is surrounded by a 10-ft chain link fence with one gate opening on the northern side of the parcel. A 40 ft by 50 ft un-manned pump house enclosed in a fence is also present in the northeastern corner of the site. The pump house provides access to the tunnel and gas line that run under the Bronx River.

Current Zoning and Land Use: The site is currently zoned M3-1 (manufacturing) and is vacant. Surrounding properties include mixed commercial and industrial uses to the north and west.

Past Use of the Site: The site was historically part of the Consolidated Edison Company of New York, Inc. (Con Ed) manufactured gas plant (MGP) that operated from 1926 until the early 1960s. Gas operations included a coke/oven gas plant, a carbureted water gas plant, a light oil plant, and a liquid petroleum production area. In total, approximately 46 buildings or structures existed on the former Con Ed MGP facility that were actively involved in gas production.

Site Geology and Hydrogeology: The site is approximately 13 feet above sea level. The majority of the shallow material across the entire site is comprised almost entirely of a 10- to 15-foot thick layer of fill material including sand, coal ash, incinerator ash, coal, cinders and material significantly impacted by MGP-related waste (coal tar and purifier waste). The fill material is underlain by a 7- to 15-foot clay lens followed by an alluvial sand/silt/gravel layer which is underlain by a glacial till layer. The glacial till is underlain by bedrock. Bedrock is observed a maximum depth of 30 to 50 feet.

Groundwater is encountered approximately 5 ft below grade on the site, with groundwater appearing at lower elevations closer to the Bronx River. The groundwater contours developed based on measurements taken during the remedial investigation show that groundwater flows east towards the Bronx River.

Additional site information can be found under Site No. V00683 as the site was formerly in the Department's Voluntary Cleanup Program. Additional information about off-site contamination can be found under State Superfund Site No. 203112.

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 commercial use (which allows for 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 Volunteer does not have an obligation to address off-site contamination. The Department has determined that this site poses a significant threat to human health and the environment and there are off-site impacts that require remedial activities; accordingly, enforcement actions are necessary.

The Department and Consolidated Edison Company of New York entered into a Consent Order (Index No. CO-0-20180516-519) on July 25, 2018. The Order obligates the remedial party to implement a full remedial program (remedial investigation and, if necessary, remedial action) for off-site areas.

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:

arsenic
benzene
chromium
lead
manganese
selenium
naphthalene
cyanides (soluble cyanide salts)
coal tar

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), including polycyclic aromatic hydrocarbons (PAHs) such as naphthalene; metals; polychlorinated biphenyls (PCBs); and pesticides. Groundwater and soil were also analyzed for emerging contaminants per- and polyfluorinated alkyl substances (PFAS) and 1,4-dioxane. In addition, soil vapor was analyzed for VOCs. Based on the

investigations conducted to date, the primary contaminants of concern include benzene, PAHs, cyanide, arsenic, chromium, lead, manganese and selenium.

Soil - Coal tar was found across the site at depths ranging from the surface to 7.5 feet below grade. Coal-tar related VOCs, including benzene, were found in on-site soils. The maximum concentrations of benzene found on-site was 110 parts per million (ppm) in the western portion of the site and 50 ppm in the northern portion of the site. These concentration levels exceed the soil cleanup objective (SCO) for commercial use (44 ppm) and the groundwater protection SCO (0.06 ppm). Total PAHs were found in subsurface soils across the site at levels exceeding 1,000 ppm. Cyanide was found in on-site soils across the site at levels significantly above the commercial use SCO (27 ppm) and the groundwater protection SCO (40 ppm) at a maximum concentration exceeding 2,000 ppm. PCBs/pesticides were not found in excess of applicable SCOs. Data from adjacent parcels indicates that the purifier waste contamination extends off-site.

Groundwater - Benzene was found in groundwater in the northwestern portion of the site exceeding the Class GA groundwater standard (1 part per billion, or ppb) with a maximum concentration of 320 ppb. Naphthalene was found in groundwater at levels significantly above Class GA groundwater standard (10 ppb) with a maximum concentration 1,100 ppb. Cyanide was found in groundwater slightly above the Class GA groundwater standard (200 ppb) at a maximum concentration of 221 ppb. Other metals include arsenic and lead which were detected in groundwater at levels up to one order of magnitude greater the Class GA groundwater standards (25 ppb), and chromium and manganese which were detected in groundwater at levels that were up to two orders of magnitude greater than their Class GA groundwater standards (50 ppb and 300 ppb, respectively). Data from adjacent parcels indicates there are off site impacts in groundwater related to this site.

Soil Vapor - On-site soil vapor was not found to be significantly impacted by contaminants of concern. Benzene was detected at a maximum concentration of 14.5 micrograms per cubic meter ($\mu g/m^3$).

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.*

The site is completely fenced, which restricts public access. However, 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 soil vapor (air spaces within the soil) 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. Environmental sampling indicates that soil vapor intrusion is not a concern on-site or off-site.

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.
- 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 In-Situ Solidification and Cover System remedy.

The elements of the selected remedy, as shown in Figure 3, are as follows:

1. **Remedial Design**

   A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER- 31. The major green remediation components are as follows:

   - Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
   - Reducing direct and indirect greenhouse gases and other emissions;
   - Increasing energy efficiency and minimizing use of non-renewable energy;

- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
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- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings 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. In-Situ Solidification

In-situ solidification (ISS) will be implemented in an approximately 4.5-acre area, as indicated on Figure 3. The treatment zone will extend from grade to approximately 15 feet below grade, approximately two feet into the clay layer. ISS is a process that binds the contaminants in-place creating a low-permeability mass. Purifier and/or coal tar waste will be mixed in-place together with solidifying agents (typically Portland cement) or other binding agents using an excavator or augers. The fill material, purifier waste and/or coal tar and binding agents are mixed to produce a solidified mass resulting in a low-permeability monolith. The solidified mass will then be covered with a cover system as described in Paragraph 4 below to prevent direct exposure to the solidified mass. The resulting solid matrix reduces or eliminates mobility of contamination and reduces or eliminates the matrix as a source of groundwater contamination.

Approximately 500 cubic yards of over-size hardened coal tar that cannot be reduced to a minimum size for effective ISS will be segregated and taken off-site for proper disposal.

3. Barrier Wall

A perimeter barrier wall will be installed, as indicated on Figure 3, to enclose the purifier waste/coal tar waste solidification area. The barrier wall will consist of vertical steel sheeting with interlocking and sealed joints that will extend up to two feet into the glacial till (located above bedrock) or refusal. The top of the sheeting will extend approximately 8 feet above existing grade to allow for volume increase associated with the ISS process and to accommodate the 4-foot soil cover over the ISS treatment area as described in Paragraph 4 below. If steel sheeting cannot be installed, a soil-bentonite slurry wall will be installed instead. In which case, the outer edges of the ISS treatment area will be cut back and sloped. Information gathered during the implementation of the approved ISS remedy at another Hunts Point site showed that cyanide bound up in purifier waste becomes soluble when the purifier waste comes into contact with higher pH water associated with solidifying agents such as Portland cement. The barrier wall will prevent off-site migration of cyanide contamination.

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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. Where the soil cover is required over the ISS treatment area, it will consist of a minimum of four feet of soil meeting the SCOs for commercial use. For areas where solidified material underlies the cover, the solidified material itself will serve as the demarcation layer due to the nature of the material.

On-site soil/fill, including soil excavated during the installation of the barrier wall described in Paragraph 3, which meets the requirements of 6 NYCRR Part 375-6.7(d), may be used to re-grade the site.

5. Dewatering and Treatment Prior to Discharge

The ISS treatment area will be dewatered prior to performing solidification. Contaminated groundwater encountered during dewatering will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Liquids discharged into the New York City sewer system will be addressed through approval by the New York City Department of Environmental Protection. Alternatively, fluids generated during dewatering will be treated to meet NYSDEC's Generic Effluent Criteria for Groundwater Discharges prior to discharge on-site. Liquids discharged to surface water will be treated to meet the requirements of a State Pollutant Discharge Elimination System (SPDES) equivalency permit.

6. Institutional Controls

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 commercial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOH; and
- require 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 in Paragraph 6 above.

– Engineering Controls: The ISS mass discussed in Paragraph 2, the barrier wall discussed in Paragraph 3, and the cover system described in Paragraph 4 above.

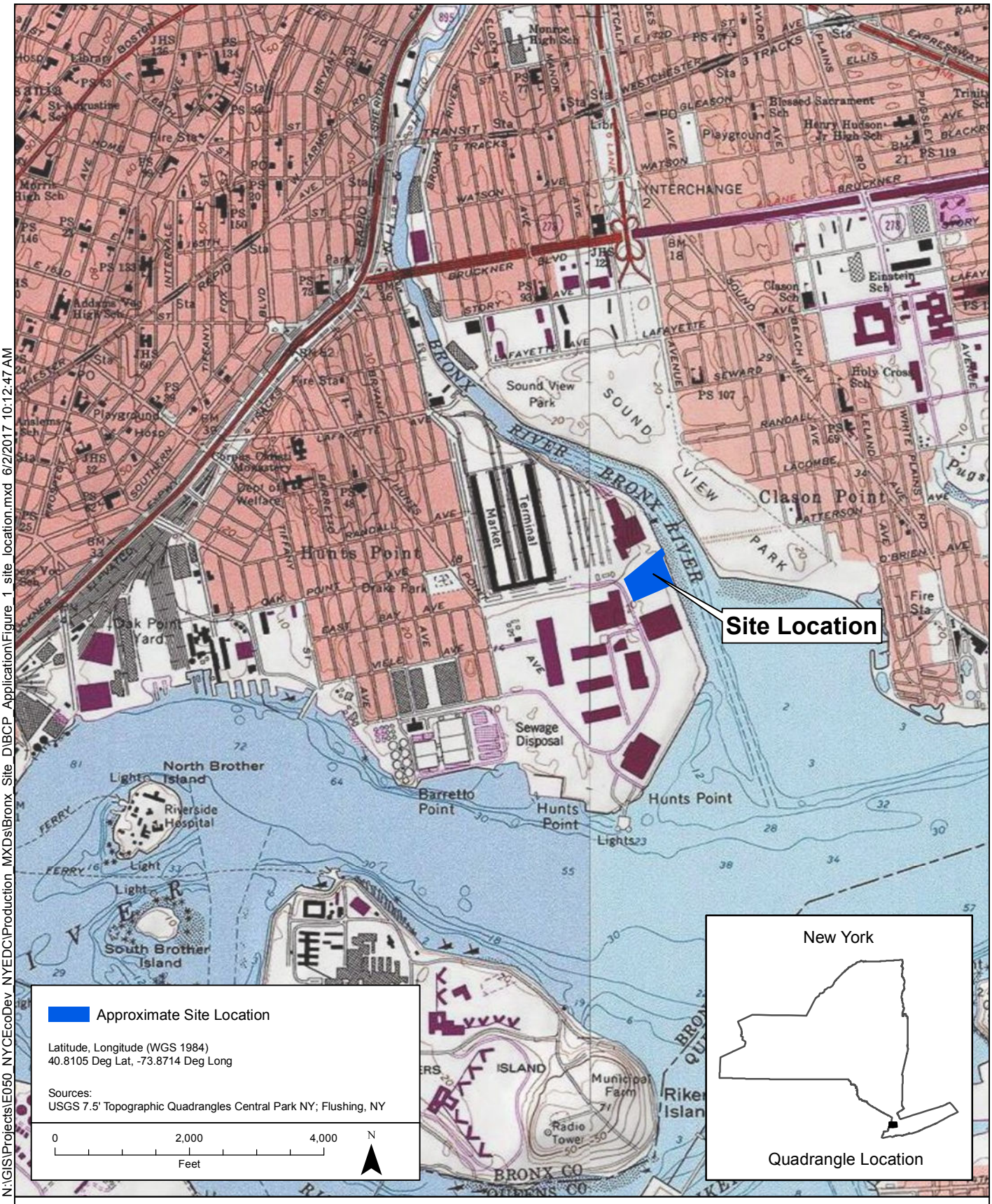
This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination, or in areas that have undergone ISS;
- 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 for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 6 above will be placed in any areas where the upper one foot of exposed surface soil exceeds the applicable soil cleanup objectives (SCOs);
- 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 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 buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

c. The Site Management Plan will be subject to an agreement between the tenant and the property owner (the City) for site access and any other pertinent provisions to enable maintenance of cover systems, management of remaining contamination, excavation, inspections, sampling, and/or any other requisite activities.



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integral engineering p.c.
61 Broadway, Suite 1601
New York, New York 10006
www.integral-corp.com

Figure 1.
Hunts Point Parcel D Site Location Map
Food Center Drive (NE Corner), Bronx, NY, 10474

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integral engineering p.c.
61 Broadway, Suite 1601
New York, New York 10006
www.integral-corp.com

Figure 2.
Hunts Point Parcel D Site Plan
Food Center Drive (NE Corner), Bronx, NY, 10474

SOURCE:
1. 2016 ESRI WORLD IMAGERY.

0 100 200

SCALE: 1" = 100'

Remedial Action Work Plan
Hunts Point
Bronx, New York

NYC Economic Development Corporation
New York, New York

GEI Consultants

ALTERNATIVE II ISS EXTENT

December 2019 Fig. 3

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