DECISION DOCUMENT

The Peninsula
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203097
December 2018

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

DECLARATION STATEMENT - DECISION DOCUMENT

The Peninsula
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203097
October 2018

Statement of Purpose and Basis

This document presents the remedy for The Peninsula 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 Peninsula 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 with 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. Excavation

The existing on-site building(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 all on-site soils which exceed unrestricted soil cleanup objectives (SCOs), as defined by 6 NYCRR Part 375-6.8. If a Track 1 cleanup is achieved, a site cover will not be a required element of the remedy.

Approximately 29,000 cubic yards of contaminated soil will be removed from the site. The anticipated depth of excavation ranges from 2 to 25 feet, which is the depth to bedrock.

Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.

3. Groundwater Dewatering and Treatment

Dewatering will be performed to facilitate the excavation. Contaminated groundwater from dewatering operations will be treated as necessary prior to discharge to the municipal sewer system.

4. Backfill

On-site soil which does not exceed unrestricted SCOs criteria may be used backfill approximately 1,000 cubic yards of excavation. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace approximately 11,230 cubic yards of the excavated soil and establish the designed grades at the site.

5. In-Situ Chemical Oxidation

As a contingency, in-situ chemical oxidation (ISCO) will be implemented to treat contaminants in saturated soil and groundwater below excavation limits if the SCOs cannot be achieved. A chemical oxidant will be injected into the subsurface to destroy the contaminants in any areas where post-excavation samples exceed the protection of groundwater SCOs for gasoline-related compounds. The method and depth of injection will be determined during the remedial design.

6. Vapor Intrusion Evaluation

As part of the Track 1 remedy, a soil vapor intrusion evaluation will be completed. The evaluation will include a provision for implementing actions recommended to address exposures related to soil vapor intrusion.

Local Institutional Controls

If no Environmental Easement or Site Management Plan is needed to achieve soil or soil vapor remedial action objectives, then the following local use restriction will be relied upon to prevent ingestion of groundwater: Article 141 of the NYCDOH code, which prohibits potable use of groundwater without prior approval.

Contingency: Track 4

The intent of the remedy is to achieve a Track 1 unrestricted use, therefore, no environmental easement or site management plan is anticipated. If the groundwater remedial action objectives (RAOs) are not achieved and/or the soil vapor intrusion (SVI) evaluation is not completed prior to completion of the Final Engineering Report, then a Site Management Plan (SMP) and Environmental Easement (EE) will be required. If a mitigation or monitoring action is needed, a Track 1 cleanup can only be achieved if the vapor mitigation system and/or other required action is deemed successful at achieving RAOs, thus no longer necessary, within 5 years of the date of the Certificate of Completion.

In the event that Track 1 unrestricted use is not achieved, including achievement of groundwater and soil vapor RAOs, the following contingent remedial elements will be required and the remedy will achieve a Track 4 restricted residential cleanup at a minimum, and will include a site cover (as a contingency if soil greater than 2 feet but less than 15 feet deep does not meet the applicable SCOs) as described below.

7. 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 restricted residential soil cleanup objectives (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.

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 NYCDOH; 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 8.
- Engineering Controls: The Cover System discussed in Paragraph 7.

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 or surface water use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any 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/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 the cover system 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.

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.

December 17, 2018
Date

Gerard Burke, Director
Remedial Bureau B

DECISION DOCUMENT

The Peninsula
Bronx, Bronx County
Site No. C203097
December 2018

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
Attn: Corey Rodriguez
761 East 160th Street
Bronx, NY 10456
Phone: 718-665-6255

Bronx 2 Community District
Attn: Ralph Acevado
1029 E. 163rd Street, Suite 202
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, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location:
The site is located at the southeast corner of the Spofford Avenue and Tiffany Street, in the Hunts Point section of Bronx, City of New York, and State of New York. The site is bounded by Corpus Christi Monastery property to the north, Tiffany Street to the west, Spofford Avenue to the south, and the La Peninsula Community Organization, Inc (Head Start) to the east.

Site Features:
A former juvenile detention center is located at the site and contains a three to six-story building, asphalt paved parking, and recreation/playground spaces such as tennis and basketball courts. The former Spofford juvenile detention center building contains a partial basement, and is constructed on a concrete slab. The building is approximately 250,000 square feet, and is shaped with multiple wings. The former juvenile detention center is fenced entirely and secured with locking gates, but has been vacant since 2011.

Current Zoning and Land Use:
The site is not currently being used, and has been vacant since 2011. The current zoning for the site is R6, which allows for residential uses in medium density areas. The nearest residential properties are located across Spofford Avenue, immediately south of the site and within the Corpus Christi Monastery property to the north. Surrounding land uses include a monastery, parkland, multi-family housing, light commercial facilities, community services (La Peninsula Community Organization, Inc) and industrial/manufacturing facilities.

Past Use of the Site:
Based upon the Environmental Data Resources (EDR) City Directory and historical Sanborn maps, the site was developed circa 1896 solely for residential use until the 1940s. In addition to providing residential use, sometime around 1915 the western portion of the property was improved for use as a stone cutting yard. The site was redeveloped and became the location of the former Spofford Juvenile Detention Facility (later renamed as Bridges Juvenile Center) and was in operation from its construction in 1956 through 2011. The facility was temporarily closed from 1998 to 1999.

Site Geology and Hydrology:

The site lies approximately 50 feet above mean sea level. The soil beneath the site consists of historic fill material including fine to medium sand with varying amounts of coarse sand, silt, gravel, asphalt, brick, and concrete fragments approximately 7 feet below land surface. Weathered bedrock was observed at most locations above competent bedrock, at a thickness ranging from approximately 0.5 ft to 10 ft. Bedrock was identified at shallower depths in the northern and central portions of the site and slopes downward in a southern direction. Competent bedrock surface ranges from approximately 5 to 15 feet. Groundwater was encountered a depth from 8.35 to 4.98 feet below grade. Based on topography and local hydrogeology, groundwater is expected to flow in a southwestern to western direction.

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, an alternative which allows for unrestricted use of the site was evaluated.

A comparison of the results of the Remedial Investigation (RI) against unrestricted use standards, criteria and guidance values (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
- sub-slab vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

toluene
ethylbenzene
TCE
naphthalene
benzene
1,2,4-trimethylbenzene
benzo(a)anthracene
lead
zinc
arsenic
petroleum products

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

- groundwater
- soil
- soil vapor intrusion

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

The following IRM(s) have been completed at this site based on conditions observed during the RI.

IRM - Building Demolition (Incidental Soil Disturbance)

- Two 12,000-gallon underground storage tanks (USTs) were taken out of service, including extraction of fluids, rendering interior of USTs inert by degassing, and capping of fill pipes, to allow for safe demolition of buildings;
- Phase I of Building Demolition: Demolition of the buildings and subgrade features (foundation removal) on the west side (Tiffany Street); and
- Phase II of Building Demolition: Demolition of the buildings and subgrade features (foundation removal) on the east side (Spofford Avenue).

Results of the IRM will be documented in the Final Engineering Report.

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), pesticides, poly-chlorinated biphenyls (PCBs), and metals. Soil vapor was analyzed for VOCs.

Soil - No VOCs were detected at concentrations exceeding the applicable Unrestricted Use Soil Cleanup Objectives (UUSCO) or Protection of Groundwater Soil Cleanup Objectives (PGWSCOs) during the 2018 Remedial Investigation (RI). The PGWSCOs are applicable to those contaminants identified in groundwater, specifically petroleum-related VOCs and SVOCs. In previous investigations, several petroleum related VOCs were detected in the vicinity of the underground storage tanks (USTs) exceeding PGWSCO values. The highest level of VOC concentrations detected were 1,2,4-trimethylbenezene, at 790 parts per million (ppm) compared to the PGWSCO of 1 ppm, and ethylbenzene at 120 ppm, compared with the PGWSCO of 1 ppm. During the 2018 RI, several SVOCs were detected, including: naphthalene at a maximum concentration of 120 ppm (PGWSCO is 12 ppm), and benzo(a)anthracene at a maximum concentration of 28 ppm (UUSCO is 1 ppm). Naphthalene is related to the petroleum contamination, while benzo(a)anthracene is likely related to the historic fill material. Several metals were found, including zinc at a maximum concentration of 36,000 ppm (UUSCO is 109 ppm), lead at a maximum concentration of 4,010 ppm (UUSCO is 63 ppm), and arsenic at a

maximum concentration of 55.7 ppm (UUSCO is 13 ppm) were detected at depths of 0-11 ft. Data does not indicate any off-site impacts in soil related to this site.

Groundwater - Free phase petroleum product was detected in several wells near the USTs. Dissolved petroleum VOCs were identified in the surrounding wells during the 2018 RI, including ethylbenzene at a maximum concentration of 10 parts per billion (ppb) compared to the Ambient Water Quality Standard (AWQS) of 1 ppb. In previous investigations, several petroleum related VOCs were detected in the vicinity of the underground storage tank exceeding AWQS, including ethylbenzene at a maximum concentration of 67.9 ppb (AWQS is 5 ppb) and 1,2,4-trimethybenzene at a maximum concentration of 313 ppb (AWQS is 5 ppb). No SVOCs were detected at concentrations exceeding the AWQS during the 2018 RI, however during previous investigations in 2016 naphthalene was detected at a maximum concentration of 112 ppb (compared to the AWQS of 10 ppb). Data does not indicate any off-site impacts in groundwater related to this site.

Soil Vapor - Several petroleum-related VOCs and chlorinated VOCs were detected in soil vapor samples throughout the site. Elevated levels of petroleum related compounds were detected in sub-slab soil vapor samples in one area of the site. Trichloroethylene was also detected in sub-slab soil vapor in the same area at a maximum concentration of 25 microgram per cubic meter (ug/m3). 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*.

People will not come into contact with contaminated soil or groundwater unless they dig below ground surface. 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 and/or soil may move into the soil vapor (air spaces within the soil), which in turn may move into the 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. Because the site is vacant, the inhalation of site-related contaminants due to soil vapor intrusion does not represent a current concern. However, an evaluation of the potential for soil vapor intrusion to occur is recommended for any site redevelopment. Environmental 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.
- 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 1: Unrestricted use remedy.

The selected remedy is referred to as the Contingent Track 1 Excavation and Dewatering 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 with 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. Excavation

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Approximately 29,000 cubic yards of contaminated soil will be removed from the site. The anticipated depth of excavation ranges from 2 to 25 feet, which is the depth to bedrock.

Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.

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As a contingency, in-situ chemical oxidation (ISCO) will be implemented to treat contaminants in saturated soil and groundwater below excavation limits if the SCOs cannot be achieved. A chemical oxidant will be injected into the subsurface to destroy the contaminants in any areas

where post-excavation samples exceed the protection of groundwater SCOs for gasoline-related compounds. The method and depth of injection will be determined during the remedial design.

6. Vapor Intrusion Evaluation

As part of the Track 1 remedy, a soil vapor intrusion evaluation will be completed. The evaluation will include a provision for implementing actions recommended to address exposures related to soil vapor intrusion.

Local Institutional Controls

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Contingency: Track 4

The intent of the remedy is to achieve a Track 1 unrestricted use, therefore, no environmental easement or site management plan is anticipated. If the groundwater remedial action objectives (RAOs) are not achieved and/or the soil vapor intrusion (SVI) evaluation is not completed prior to completion of the Final Engineering Report, then a Site Management Plan (SMP) and Environmental Easement (EE) will be required. If a mitigation or monitoring action is needed, a Track 1 cleanup can only be achieved if the vapor mitigation system and/or other required action is deemed successful at achieving RAOs, thus no longer necessary, within 5 years of the date of the Certificate of Completion.

In the event that Track 1 unrestricted use is not achieved, including achievement of groundwater and soil vapor RAOs, the following contingent remedial elements will be required and the remedy will achieve a Track 4 restricted residential cleanup at a minimum, and will include a site cover (as a contingency if soil greater than 2 feet but less than 15 feet deep does not meet the applicable SCOs) as described below.

7. 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 restricted residential soil cleanup objectives (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.

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 NYCDOH; and
- require compliance with the Department approved Site Management Plan.

9. Site Management Plan

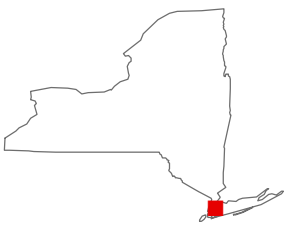
A Site Management Plan is required, which includes the following:

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 8.
    - Engineering Controls: The Cover System discussed in Paragraph 7.

    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 or surface water use restrictions;
    - a provision for evaluation of the potential for soil vapor intrusion for any 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/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 the cover system 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.

SITE LOCATION



1,000 0 1,000 2,000 Feet

Title:

SITE LOCATION MAP

REMEDIAL ACTION WORK PLAN
1221 SPOFFORD AVENUE, BRONX, NY

Prepared For:

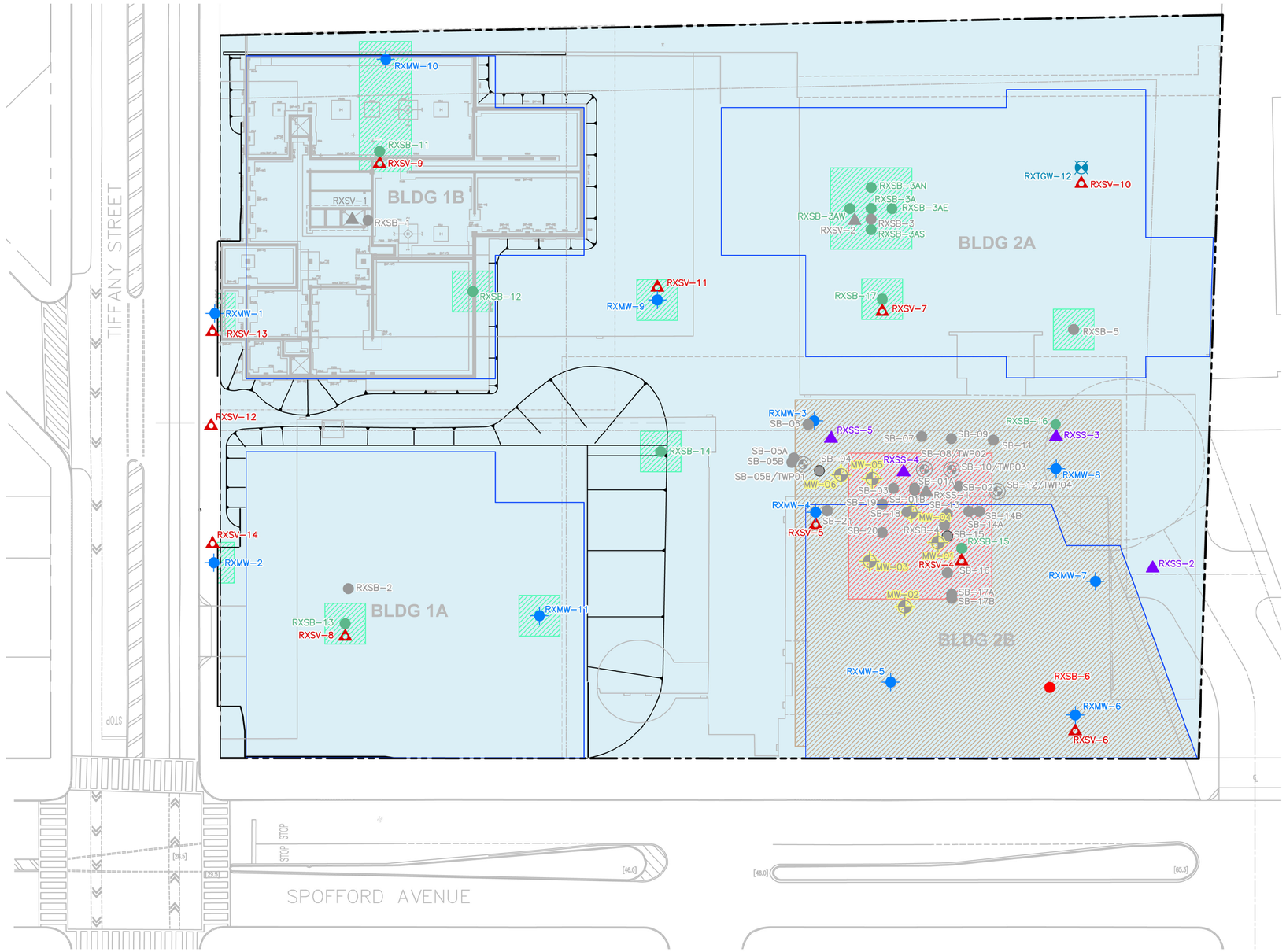
THE PENINSULA JV, LLC

ROUX

Compiled by: D.M.H.	Date: 06SEP18
Prepared by: M.S.R.	Scale: AS SHOWN
Project Mgr: J.W.	Project: 2611.0002Y000
File: 2611.0002Y121.1.mxd	

FIGURE 1

V:\GIS\Projects\2611\0002Y\121\2611.0002Y121.1.mxd



LEGEND

- SITE BOUNDARY
- LOCATION OF PROPOSED BUILDING
- RXMW-1 — SOIL BORING AND GROUNDWATER WELL LOCATION AND DESIGNATION
- RXTGW-11 — SOIL BORING AND TEMPORARY GROUNDWATER WELL LOCATION (OVERBURDEN)
- RXSB-15 — SOIL BORING LOCATION AND DESIGNATION
- RXSV-4 — SOIL VAPOR LOCATION AND DESIGNATION
- RXSS-2 — SUB-SLAB SOIL VAPOR LOCATION AND DESIGNATION
- SB-06 — SOIL BORING LOCATION AND DESIGNATION FROM LOUIS BERGER AND ASSOCIATES, 2009 INVESTIGATION
- SB-08/TWP02 — COLOCATED SOIL BORING AND TEMPORARY WELL LOCATION AND DESIGNATION FROM LOUIS BERGER AND ASSOCIATES, 2009 INVESTIGATION
- MW-03 — MONITORING WELL LOCATION AND DESIGNATION INSTALLED BY URS, 2014
- RXSB-3 — APPROXIMATE SOIL BORING LOCATION AND DESIGNATION FROM ROUX ASSOCIATES 2017 INVESTIGATION
- RXSS-1 RXSV-2 — APPROXIMATE SUB SLAB/SOIL VAPOR POINT LOCATION AND DESIGNATION FROM ROUX ASSOCIATES 2017 INVESTIGATION
- MW-06 — MONITORING WELL RESAMPLING LOCATION AND DESIGNATION
- PROPOSED EXCAVATION AREA BASED ON UST PETROLEUM SOURCE AREA (DEPTH TO BEDROCK)
- PROPOSED EXCAVATION AREA BASED ON UNRESTRICTED USE SOIL CLEANUP OBJECTIVES EXCEEDANCES (LIMITS AND DEPTH TO BE DELINEATED DURING PRE-EXCAVATION SAMPLING)
- PROPOSED EXCAVATION AREA BASED ON UNRESTRICTED USE SOIL CLEANUP OBJECTIVES EXCEEDANCES (DEPTH TO BEDROCK)
- EXCAVATION OF 2 FEET OF SOIL ACROSS ENTIRE SITE

NOTES

1. AS PART OF TRACK 1 REMEDIAL ACTIVITIES, 2 FEET OF SOIL WILL BE REMOVED ACROSS THE SITE AND TRANSPORTED OFFSITE FOR DISPOSAL.
2. SUPPORT OF EXCAVATION (SOE) IS SHOWN FOR PROPOSED BUILDINGS 1A AND 1B. PROPOSED BUILDINGS 2A AND 2B ARE IN THE PRELIMINARY DESIGN PHASE, THEREFORE, SOE INFORMATION IS NOT YET AVAILABLE.

40' 0 40'

Title:

REMEDIAL ALTERNATIVE 1: TRACK 1 CLEANUP

REMEDIAL ACTION WORK PLAN
1221 SPOFFORD AVENUE
BRONX, NEW YORK

Prepared For:

THE PENINSULA JV, LLC

ROUX

Compiled by: D.H.	Date: 5SEPT18	Figure 2
Prepared by: G.M.	Scale: AS SHOWN	
Project Mgr: D.H.	Project: 2611.0002Y000	
File: 2611.0002Y121.01.DWG		

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