DECISION DOCUMENT

La Central - Phase I
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203086
April 2017

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

DECLARATION STATEMENT - DECISION DOCUMENT

La Central - Phase I
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203086
April 2017

Statement of Purpose and Basis

This document presents the remedy for the La Central - Phase I 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 La Central - Phase I 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:

The elements of the proposed remedy for a combined Track 1 Unrestricted Use/Track 4 Restricted Residential Use, 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:

   a. considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
   b. reducing direct and indirect greenhouse gases and other emissions;
   c. increasing energy efficiency and minimizing use of non-renewable energy;
   d. conserving and efficiently managing resources and materials;
   e. reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
   f. maximizing habitat value and creating habitat when possible;
   g. fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and

h. integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. **Excavation**

Excavation and off-site disposal of all on-site Building B parcel soils (with the exception of the former 152nd street portion of this parcel) which exceed Track 1 unrestricted use soil cleanup objectives (UUSCOs), as defined by 6 NYCRR Part 375-6.8. If a Track 1 cleanup is achieved, a cover system will not be a required element of the remedy. All soil in the upper two feet of the Buildings A and D parcels, in addition to the former 152nd street portion of the Building B parcel, which exceed the Track 4 restricted residential use SCOs will be excavated and transported off-site for disposal. The limits and approximate depths of excavation are shown on Figure 2. Approximately 36,137 cubic yards (cy) of contaminated soil will be removed for remedial purposes, including soils exceeding the: UUSCOs for the majority of the Building B Parcel (29,850 cy); restricted residential (RR) SCOs and/or protection of groundwater (PGW) SCOs in the top two feet of soil for the Buildings A (3,817 cy); Building D parcels (1,686 cy); and the de-mapped 152nd Street on the Building B parcel (784 cy).

3. **Backfill**

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the design grades at the Site.

4. **Cover System**

For the Building A and D parcels, the de-mapped 152nd Street on the Building B parcel (and the Building B parcel in the event that Track 1 unrestricted use SCOs are not met), 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 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 to be placed as part of site development. Such components may include, but are not necessarily limited to: pavement, cement, paved surface parking areas, sidewalks, building foundations and building slabs. Where such materials or components are used, however, costs in excess of the two-foot soil cover described above shall not be allowable in the calculation of the *Site Preparation Credit* pursuant to NY Tax L § 21 (2015) for sites in the Brownfield Cleanup Program. If a Track 1 unrestricted use cleanup is achieved for the Building B parcel, a site cover will not be a required element of the remedy.

5. **In-Situ Chemical Oxidation**

In-situ chemical oxidation (ISCO) will be implemented to treat contaminants in groundwater. Potassium permanganate will be injected into the subsurface to remediate the contaminants in

an approximately 12,500 square foot area located in the Building D parcel of the site where chlorinated VOCs are elevated in the groundwater, via temporary injection points installed 16 to 26 feet below the surface.

6. **Institutional Control**

Imposition of an institutional control in the form of an Environmental Easement for the controlled property (the Buildings A and D parcels and the de-mapped 152nd Street on the Building B parcel and the remainder of the Building B parcel in the event that Track 1 is not achieved) that:

a. requires the remedial party or Site owner to complete and submit to the NYSDEC a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
b. allows the continued use and development of the controlled property for restricted residential (or less restrictive uses) as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
c. restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or Article 141 of the NYCDOH code (groundwater restriction applies to the entire Site, even though the majority of the Building B parcel is a Track 1 remedy); and
d. requires compliance with the Department approved Site Management Plan.

7. **Site Management Plan**

A Site Management Plan (SMP) is required for the Buildings A and D parcels and the de-mapped 152nd Street on the Building B parcel (and the remainder of the Building B parcel in the event that Track 1 is not achieved), 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 element 6 above.

   Engineering Controls: The Site Cover System described in element 4 above and groundwater treatment described in element 5 above.

   This plan includes, but may not be limited to:

   i. an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
   ii. descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
   iii. 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;
   iv. a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in element 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the

applicable soil cleanup objectives (SCOs);

v. a provision for future containment or treatment of remaining groundwater contamination if remedial element 5, above is not effective in preventing off-site migration of groundwater contamination;

vi. provisions for the management and inspection of the identified engineering controls;

vii. maintaining Site access controls and Department notification; and

viii. 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:
   i. monitoring of groundwater to assess the performance and effectiveness of the remedy;
   ii. a schedule of monitoring and frequency of submittals to the Department;
   iii. monitoring for vapor intrusion for any new buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

4/28/2017

Date

Gerard Burke, Director
Remedial Bureau B

DECISION DOCUMENT

La Central - Phase I
Bronx, Bronx County
Site No. C203086
March 2017

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 - Mott Haven
321 East 140th Street
Bronx, NY 10455
Phone: 718-829-7830

Community Board No. 1 Bronx
3024 Third Avenue
Bronx, NY 10455
Phone: 718-585-7117

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 2.91 acres in area and is located in an urban area in the Melrose neighborhood of the South Bronx, Bronx County. It is bounded by Brook Avenue to the east, Bergen Avenue to the west, the tracks of subway line 2 and 5 to the south and a vacant parcel to the north. The nearest residences are about 800 feet east of the site. There are schools about 500 feet east and northeast of the site. A juvenile detention center is located about 250 feet southeast of the site.

Site Features:
The site consists of tax block 2294, lot 32 and tax block 2361, lots 1 and 25. Tax lot 32 currently has one vacant building and paved parking lots. The building is a partial one-story, partial two-story which will be demolished for redevelopment of the site. Tax lots 1 and 25 have been vacant since the late 1980s and are covered with vegetation. The site is secured with a chain-link fence.

Current Zoning and Land Use:
The site is currently inactive and vacant. However, development is proposed for commercial and residential uses. Block 2294, lot 32, and block 2361, lots 1 and 25 are currently zoned commercial C4-6, based on a change in zoning to support the development. A C4-6 zoning allows for use of medium-density general commercial (such as department stores and theaters) and low- to medium-density residential and community facilities.

Past Use of the Site:
The site has been developed since the late 1800s and previously had a mixture of residential dwellings (tenements), commercial buildings and various operations. Former tenants included retail stores, plumbers shop, provisions packing and warehouses, post office, parts and service garage, movie theater, laundry, woodworking, meatpacking and warehousing, and a gymnasium.

Site Geology and Hydrogeology:
Soil from the surface to approximately 10 feet below ground surface (bgs) consists of assorted fill material such as brick, wood, glass, plastic, cloths, cinders and metal. Deeper soil consists of fine sand, silt and gravel. A layer of organic silt with trace peat, approximately 2 to 7 feet thick, was encountered below the fill material at the location of a former stream bed (now filled), that ran through the eastern region of the Site in the general direction of Brook Avenue. Depth to weathered bedrock and competent bedrock dips from approximately 20 feet bgs in the western

region of the site to approximately 65 feet bgs in the eastern region of the site. Groundwater depth ranges from 13 and 15 feet bgs and flows in an easterly direction. Current groundwater flow direction may be influenced by local dewatering projects and new improvements including utilities.

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

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:

- tetrachloroethene (PCE)
- polycyclic aromatic hydrocarbons (PAHS), total
- PCB Aroclor 1248
- barium
- lead
- arsenic
- dieldrin

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 at the site were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds in the form of polycyclic aromatic hydrocarbons (PAHs), metals, polychlorinated biphenyls (PCBs), and pesticides. Soil vapor was analyzed for VOCs. Based upon investigations conducted to date, the primary contaminants of concern include PCE, PAHs, PCBs, metals (arsenic, barium and lead), and the pesticide dieldrin.

Soil:
PAHs in soil were found throughout the site from the surface to 16 feet below ground surface (bgs). PAH concentrations ranged from 0.50 parts per million (ppm) (for dibenzo(a,h)anthracene at 14-16 feet bgs) to 120 ppm (for chrysene at 0-2 feet bgs). The maximum concentrations for metals were: arsenic (28 ppm at 0-2 feet bgs); barium (1000 ppm at 0-2 feet bgs); and lead (990 ppm at 0-2 feet bgs). The PCB Aroclor 1248 was detected at 4.8 ppm at 4-6 feet bgs. The pesticide dieldrin was detected at several locations, all at 0-2 feet bgs, ranging from 0.0061 ppm to 0.0752 ppm. Block 2294 contains a building which is undergoing demolition. After the demolition is completed, soil sampling will be completed as a pre-design investigation prior to implementation of the remedial action. At one off-site location, total PCBs (0.234 ppm) exceeded the unrestricted use SCO of 0.100 ppm, but was below the residential use SCO.

Groundwater:
PCE exceeded the groundwater standard of 5 ppb at two on-site wells (49 ppb and 240 ppb). The following PAHs exceeded the groundwater standard of 0.002 ppb: benzo[a]anthracene ranged from 0.02 ppb to 0.22 ppb; benzo[a]pyrene ranged from 0.08 ppb to 0.1 ppb; benzo[b]fluoranthene ranged from 0.05 ppb to 0.17 ppb; benzo[k]fluoranthene ranged from 0.08 µg/l to 0.01 ppb; chrysene ranged from 0.08 ppb to 0.2 ppb; and indeno[1,2,3-c,d]pyrene was detected at 0.07 ppb. Naphthalene also exceeded the groundwater standard of 10 ppb (17 ppb). Dieldrin exceeded the groundwater standard 0.004 ppb in four samples, with concentrations ranging from 0.008 ppb to 0.035 ppb. At the off-site wells, there were no exceedances of the groundwater standards and guidance values.

Soil Vapor:
Petroleum related VOCs were detected in all of the soil vapor samples throughout the site. PCE was also detected in eight samples, ranging from 1.51 to 11.80 micrograms per cubic meter (µg/m3). Total concentrations of petroleum-related VOCs ranged from 60.5 to 204.90 µg/m3. Concentrations of PCE ranged from 6.05 to 11.8 µg/m3. Off-site samples were not collected because the majority of the site (Phase I) is surrounded by railroad lines and commercial development. Also, NYSDOH determined that PCE in groundwater does not appear to be impacting soil vapor to a level that would warrant mitigation and the concentrations of petroleum

contaminants in soil vapor are not likely to pose a concern for soil vapor intrusion. However, off-site soil vapor sampling will be conducted during the Phase II BCP cleanup, since a school field is present across the street from this proposed development.

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 currently vacant, however, people who enter the site could contact contaminants in the soil by walking on the site, digging or otherwise disturbing the soil. 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 the soil, groundwater, or other sources may move into the soil vapor (air spaces within the soil), which in turn may move into nearby 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 not currently occupied, inhalation of site contaminants in indoor air due to soil vapor intrusion does not represent a concern. However, the potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site development. Environmental sampling indicates soil vapor intrusion is not a concern 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.
- 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 referred to as the Excavation and Groundwater Treatment remedy.

The elements of the selected remedy, as shown on Figure 2, for a combined Track 1 Unrestricted Use/Track 4 Restricted Residential Use, 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:

a. Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
b. Reducing direct and indirect greenhouse gases and other emissions;
c. Increasing energy efficiency and minimizing use of non-renewable energy;
d. Conserving and efficiently managing resources and materials;
e. Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
f. Maximizing habitat value and creating habitat when possible;
g. Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
h. Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation

Excavation and off-site disposal of all on-site Building B parcel soils (with the exception of the former 152nd street portion of this parcel) which exceed Track 1 unrestricted use soil

cleanup objectives (UUSCOs), as defined by 6 NYCRR Part 375-6.8. If a Track 1 cleanup is achieved, a cover system will not be a required element of the remedy. All soil in the upper two feet of the Buildings A and D parcels, in addition to the former 152nd street portion of the Building B parcel, which exceed the Track 4 restricted residential use SCOs will be excavated and transported off-site for disposal. The limits and approximate depths of excavation are shown on Figure 2. Approximately 36,137 cubic yards (cy) of contaminated soil will be removed for remedial purposes, including soils exceeding the: UUSCOs for the majority of the Building B Parcel (29,850 cy); restricted residential (RR) SCOs and/or protection of groundwater (PGW) SCOs in the top two feet of soil for the Buildings A (3,817 cy); Building D parcels (1,686 cy); and the de-mapped 152nd Street on the Building B parcel (784 cy).

3. Backfill

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the design grades at the Site.

4. Cover System

For the Building A and D parcels (and the Building B parcel in the event that Track 1 unrestricted use SCOs are not met) 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 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 to be placed as part of site development. Such components may include, but are not necessarily limited to: pavement, cement, paved surface parking areas, sidewalks, building foundations and building slabs. Where such materials or components are used, however, costs in excess of the two-foot soil cover described above shall not be allowable in the calculation of the *Site Preparation Credit* pursuant to NY Tax L § 21 (2015) for sites in the Brownfield Cleanup Program. If a Track 1 unrestricted use cleanup is achieved for the Building B parcel, a site cover will not be a required element of the remedy.

5. In-Situ Chemical Oxidation

In-situ chemical oxidation (ISCO) will be implemented to treat contaminants in groundwater. Potassium permanganate will be injected into the subsurface to remediate the contaminants in an approximately 12,500 square foot area located in the Building D parcel of the site where chlorinated VOCs are elevated in the groundwater, via temporary injection points installed 16 to 26 feet below the surface.

6. Institutional Control

Imposition of an institutional control in the form of an Environmental Easement for the controlled property (e.g., the Buildings A and D parcels and the Building B parcel in the event that Track 1 is not achieved) that:

a. requires the remedial party or Site owner to complete and submit to the NYSDEC a

periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);

b. allows the continued use and development of the controlled property for restricted residential (or less restrictive uses) as defined by Part 375-1.8(g), although land use is subject to local zoning laws;

c. restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or Article 141 of the NYCDOH code (groundwater restriction applies to the entire Site, even though the Building B is a Track 1 remedy); and

d. requires compliance with the Department approved Site Management Plan.

7. Site Management Plan

A Site Management Plan (SMP) is required for the Buildings A and D parcels (and the Building B parcel in the event that Track 1 is not achieved), 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 element 6 above.

Engineering Controls: The Site Cover System described in element 4 above and groundwater treatment described in element 5 above.

This plan includes, but may not be limited to:

i. an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;

ii. descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;

iii. 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;

iv. a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in element 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);

v. a provision for future containment or treatment of remaining groundwater contamination if remedial element 4, above is not effective in preventing off-site migration of groundwater contamination;

vi. provisions for the management and inspection of the identified engineering controls;

vii. maintaining Site access controls and Department notification; and

viii. 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:

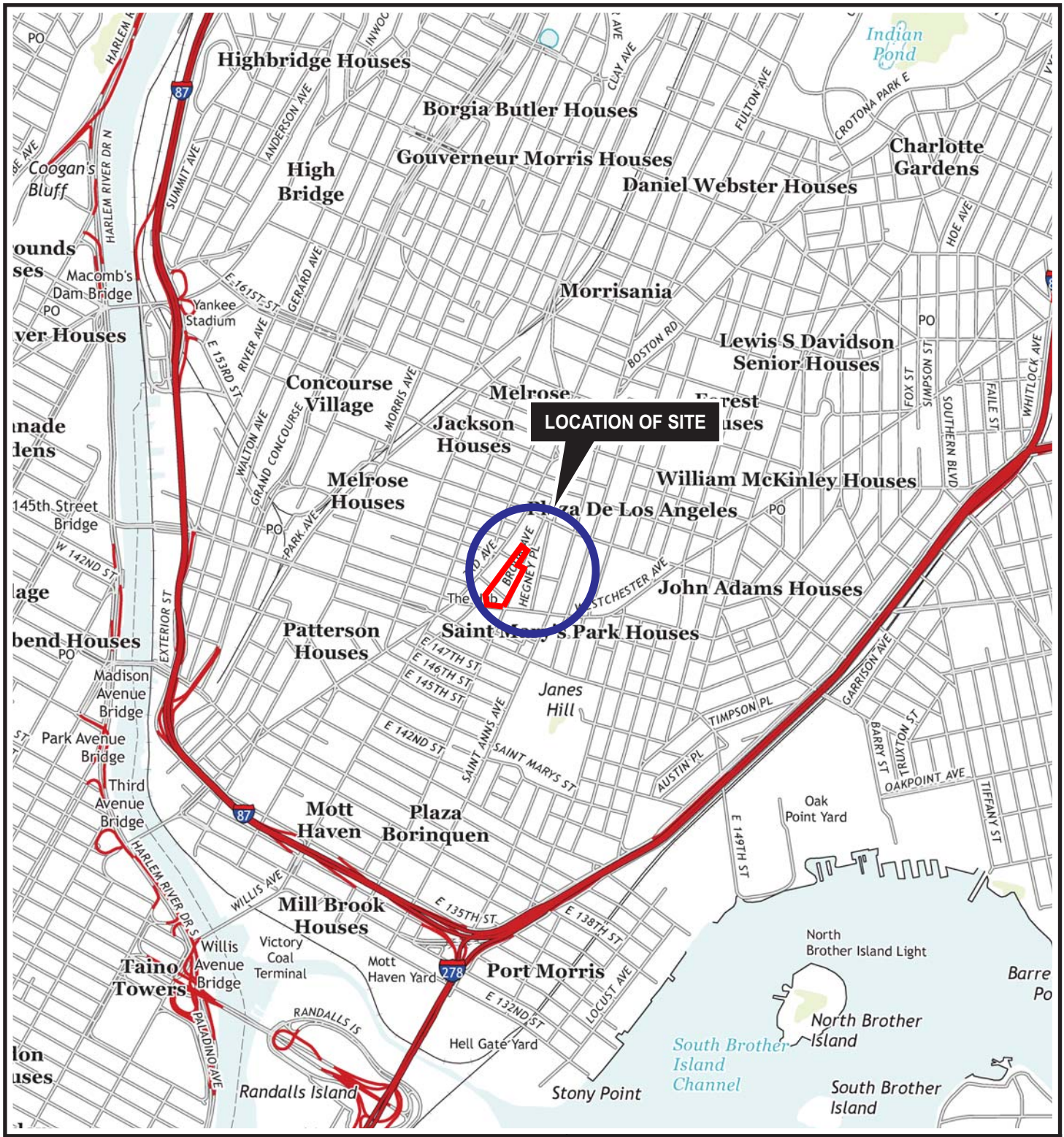
i. monitoring of groundwater to assess the performance and effectiveness of the

remedy;

ii. a schedule of monitoring and frequency of submittals to the Department;

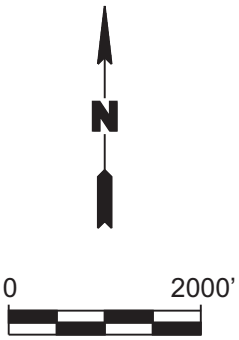
iii. monitoring for vapor intrusion for any new buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

FIGURE 1 - SITE LOCATION



QUADRANGLE LOCATION

SOURCE:
USGS; 2013, Central Park,NY
7.5 Minute Topographic Quadrangle



Title:

SITE LOCATION MAP

LA CENTRAL REDEVELOPMENT
BRONX, NEW YORK

Prepared for:

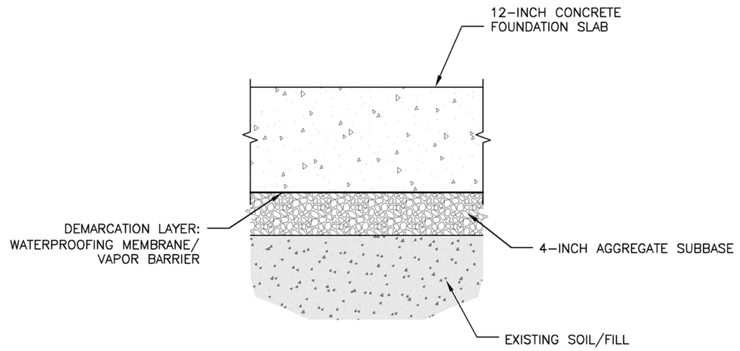
LA CENTRAL MANAGER, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: R.M.	Date: 07DEC16	FIGURE
Prepared by: J.A.D.	Scale: AS SHOWN	1
Project Mgr.: R.M.	Project No.: 2446.0001Y000	
File: 2446.0001Y116.02.CDR		

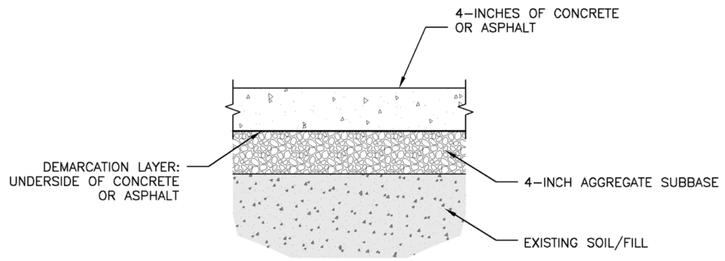
V:\CAD\PROJECTS\2446Y\0001Y\116\2446.0001Y116.02.CDR

FIGURE 2 - PROPOSED REMEDY



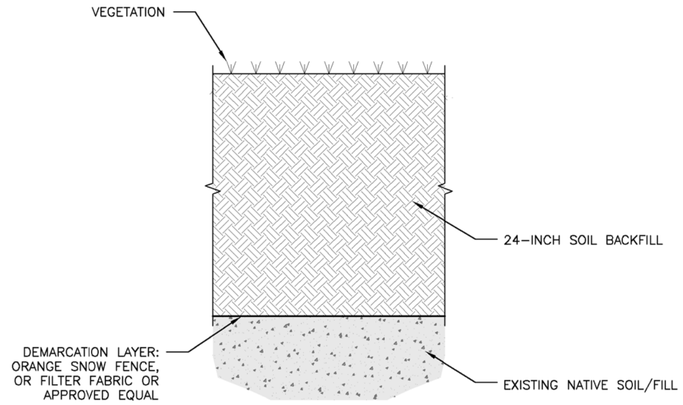
1 PROPOSED SITE COVER SYSTEM: CONCRETE BUILDING FOUNDATION

SCALE: NOT TO SCALE



2 PROPOSED SITE COVER SYSTEM: CONCRETE OR ASPHALT WALKWAYS

SCALE: NOT TO SCALE



3 PROPOSED SITE COVER SYSTEM: TWO FOOT SOIL CAP

SCALE: NOT TO SCALE

LEGEND

- PROPOSED BDS LOCATION
- PROPOSED SDS LOCATION
- PROPOSED BCS LOCATION
- EXISTING SOIL BORING/ GW GRAB LOCATION TO BE USED AS A BDS
- EXISTING SOIL BORING/ MONITORING WELL LOCATION TO BE USED AS A BDS
- APPROXIMATE PROPOSED MONITORING WELL LOCATION
- OFF–SITE EXISTING MONITORING WELL LOCATION
- LA CENTRAL PHASE I BCP SITE BOUNDARY
- LA CENTRAL REDEVELOPMENT PROJECT SITE BOUNDARY
- CHAIN LINK FENCE
- CATCH BASIN (CB) LOCATION

- PROPOSED LIMITS OF EXCAVATION TO LESS THAN 1 FOOT BGS. SITE COVER SYSTEM COMPRISED OF ASPHALT/CONCRETE WALKWAYS AND SUB–BASE AGGREGATE BACKFILL. SEE DETAIL 2 AND NOTE 3.
- PROPOSED LIMITS OF EXCAVATION TO LESS THAN 1 FOOT BGS. SITE COVER SYSTEM COMPRISED OF 2 FEET OF CLEAN SOIL BACKFILL. SEE DETAIL 3 AND NOTE 3.
- PROPOSED LIMITS OF EXCAVATION TO APPROXIMATELY 2 FEET BGS. SITE COVER SYSTEM COMPRISED OF BUILDING FOUNDATION SLAB AND AGGREGATE SUB–BASE BACKFILL. SEE DETAIL 1 AND NOTE 3.
- PROPOSED LIMITS OF EXCAVATION TO APPROXIMATELY 8 FEET BGS. SITE COVER SYSTEM COMPRISED OF BUILDING FOUNDATION SLAB AND AGGREGATE SUB–BASE BACKFILL. SEE DETAIL 1 AND NOTE 3.
- PROPOSED LIMITS OF EXCAVATION TO APPROXIMATELY 13 FEET BGS. SITE COVER SYSTEM COMPRISED OF BUILDING FOUNDATION SLAB AND AGGREGATE SUB–BASE BACKFILL. SEE DETAIL 1 AND NOTE 3.
- PROPOSED LIMITS OF EXCAVATION TO APPROXIMATELY 14 FEET BGS. SITE COVER SYSTEM COMPRISED OF BUILDING FOUNDATION SLAB AND AGGREGATE SUB–BASE BACKFILL. SEE DETAIL 1 AND NOTE 3.
- PROPOSED LIMITS OF EXCAVATION TO APPROXIMATELY 15 FEET BGS. SITE COVER SYSTEM COMPRISED OF BUILDING FOUNDATION SLAB AND AGGREGATE SUB–BASE BACKFILL. SEE DETAIL 1 AND NOTE 3.
- PROPOSED LIMITS OF EXCAVATION TO APPROXIMATELY 16 FEET BGS. SITE COVER SYSTEM COMPRISED OF BUILDING FOUNDATION SLAB AND AGGREGATE SUB–BASE BACKFILL. SEE DETAIL 1 AND NOTE 3.
- PROPOSED LIMITS OF EXCAVATION TO APPROXIMATELY 17 FEET BGS. SITE COVER SYSTEM COMPRISED OF BUILDING FOUNDATION SLAB AND AGGREGATE SUB–BASE BACKFILL. SEE DETAIL 1 AND NOTE 3.
- PROPOSED LIMITS OF EXCAVATION TO APPROXIMATELY 18 FEET BGS. SITE COVER SYSTEM COMPRISED OF BUILDING FOUNDATION SLAB AND AGGREGATE SUB–BASE BACKFILL. SEE DETAIL 1 AND NOTE 3.
- PROPOSED LIMITS OF EXCAVATION TO APPROXIMATELY 19 FEET BGS. SITE COVER SYSTEM COMPRISED OF BUILDING FOUNDATION SLAB AND AGGREGATE SUB–BASE BACKFILL. SEE DETAIL 1 AND NOTE 3.
- PROPOSED LIMITS OF EXCAVATION TO APPROXIMATELY 20 FEET BGS. SITE COVER SYSTEM COMPRISED OF BUILDING FOUNDATION SLAB AND AGGREGATE SUB–BASE BACKFILL. SEE DETAIL 1 AND NOTE 3.
- PROPOSED LIMITS OF EXCAVATION TO APPROXIMATELY 21 FEET BGS. SITE COVER SYSTEM COMPRISED OF BUILDING FOUNDATION SLAB AND AGGREGATE SUB–BASE BACKFILL. SEE DETAIL 1 AND NOTE 3.
- PROPOSED LIMITS OF ON–SITE IN SITU CHEMICAL OXIDATION INJECTIONS OF POTASSIUM PERMANGANATE. TWENTY INJECTION POINTS PROPOSED. REFER TO INSET FOR INJECTION POINT LOCATIONS AND SECTION 8.1 OF RIR/RAWP FOR DETAILS.
- IN SITU CHEMICAL OXIDATION INJECTION POINT LOCATION

NOTES

1. ENDPOINT DOCUMENTATION AND CONFIRMATION SAMPLES WILL BE A COMBINATION OF EXISTING SOIL SAMPLES AND PROPOSED SAMPLES AS SHOWN. REFER TO SECTION 5.2.1 OF THE RIR/RAWP FOR A DESCRIPTION OF SAMPLING FREQUENCIES AND ANALYTES. LOCATIONS ARE APPROXIMATE AND WILL BE BIASED TOWARD IMPACTS OBSERVED, IF ANY. IF IMPACTS ARE OBSERVED ON THE SIDEWALLS OF THE PROPERTY, APPROPRIATE SIDEWALL DOCUMENTATION SAMPLING BE PERFORMED.
2. REFER TO DETAILS FOR SITE COVER SYSTEM TYPES.
3. BACKFILL FOR THE BUILDING B PARCEL WILL MEET UUSCO; BACKFILL FOR THE BUILDING A AND D PARCELS WILL MEET THE LOWER OF PART 375 RRSCOs OR PGWSCOs.
4. THE BUILDING B PARCEL WILL BE REMEDIATED TO TRACK 1 UNRESTRICTED USE. THE BUILDINGS A AND B PARCELS WILL ME REMEDIATED TO TRACK 4 RESTRICTED RESIDENTIAL USE.

BGS – BELOW GRADE SURFACE

NYSDEC – NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

RRSCOs – PART 375 RESTRICTED RESTRICTED RESIDENTIAL SOIL CLEANUP OBJECTIVES

PGWSCOs – PART 375 PROTECTION OF GROUNDWATER SOIL CLEANUP OBJECTIVES

UUSCOs – PART 375 UNRESTRICTED SOIL CLEANUP OBJECTIVES

BDS – BOTTOM DOCUMENTATION SAMPLE

BCS – BOTTOM CONFIRMATION SAMPLE

SDS – SIDEWALL DOCUMENTATION SAMPLE

SOURCE

MEGA ENGINEERING & SURVEYING, P.C., NOVEMBER 2016 SURVEY. BASED ON NAVD88 DATUM.

100' 0 100'

Title:

REMEDIAL ALTERNATIVE 2: COMBINED TRACK 1 UNRESTRICTED USE/ TRACK 4 RESTRICTED RESIDENTIAL USE CLEANUP

LA CENTRAL REDEVELOPMENT
BRONX, NEW YORK

Prepared For:

LA CENTRAL MANAGER, LLC

Remedial REMEDIAL ENGINEERING, P.C. *ENVIRONMENTAL ENGINEERS*	Compiled by: R.M.	Date: 06MAR17	PLATE 7
	Prepared by: J.A.D.	Scale: AS SHOWN	
	Project Mgr: R.M.	Project: 2446.0001Y000	
	File: 2446.0001Y116.01R.DWG		

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