

DECISION DOCUMENT

904 Burke Avenue, LLC
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203032
May 2017



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

DECLARATION STATEMENT - DECISION DOCUMENT

904 Burke Avenue, LLC
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203032
May 2017

Statement of Purpose and Basis

This document presents the remedy for the 904 Burke Avenue, LLC 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 904 Burke Avenue, LLC 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;
- Conserving and efficiently managing resources and materials;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation

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

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- soil with visual non-aqueous phase liquid;
- soil which exceeds the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above

standards; and

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

Approximately 48 cubic yards of contaminated soil will be removed from the site.

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 designed grades at the site. The site will be re-graded to accommodate the installation of a cover system as described in the remedy element #4.

4. Cover System

A site cover will be required to allow for restricted residential use of the site in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). The site cover may consist of paved surface parking areas, sidewalks, or a soil cover. 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 as set forth in 6 NYCRR Part 375-6.7(d). In areas where building foundations or building slabs preclude contact with the soil, the requirements for a site cover will be deferred until such time that they are removed.

5. LNAPL Extraction

Light non-aqueous phase liquid ("LNAPL") accumulations will be removed from on-site monitoring wells via periodic hand bailing and placement of sorbent socks.

6. In-Situ Chemical Oxidation

Following the removal of all recoverable LNAPL, in-situ chemical oxidation (ISCO) will be implemented to treat contaminants in groundwater. A chemical oxidant will be injected into the subsurface to destroy the contaminants in an approximately 5000 cubic feet area where petroleum-related compounds were elevated in the groundwater via injection wells screened from approximately 6 to 10 feet. The method and depth of injection will be determined during the remedial design.

7. Institutional Control

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

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOH; and
- require compliance with the Department approved Site Management Plan.

8. Site Management Plan

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

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

- o Institutional Controls: The Environmental Easement discussed above.
- o Engineering Controls: The cover system discussed above.

This plan includes, but may not be limited to:

- o an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- o descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- o a provision for evaluation of the potential for soil vapor intrusion for future buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- o provisions for the management and inspection of the identified engineering controls;
- o maintaining site access controls and Department notification; and
- o the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls

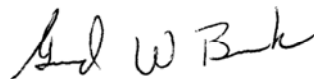
b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- o monitoring of groundwater and soil vapor to assess the performance and effectiveness of the remedy;
- o a schedule of monitoring and frequency of submittals to the Department;
- o monitoring for vapor intrusion for any future buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

Declaration

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

5/30/17



Date

Gerard W Burke, Director
Remedial Bureau B

DECISION DOCUMENT

904 Burke Avenue, LLC
Bronx, Bronx County
Site No. C203032
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SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repository:

New York Public Library
Eastchester Branch
1385 E. Gun Hill Road
Bronx, NY 10469
Phone: (718) 653-3292

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 in an urban area at the southeast corner of Burke Avenue and Bronxwood Avenue in the Williamsbridge section of the Bronx. The street address provided for the site is 904 Burke Avenue, Bronx.

Site Features:

The building formerly located on-site has been demolished. The 0.25-acre site is currently vacant.

Current Zoning/Use:

The site is zoned R5 for residential use. The site is currently used as a parking lot. It consists of one tax parcel - block 4574 lot 225.

Historic Use(s):

Former site operations included an automotive repair facility and gas station. In December 1998 ten underground storage tanks (USTs) were removed and the excavated area was backfilled. The building formerly located on-site has been demolished.

Site Geology and Hydrogeology:

The depth to groundwater is approximately 6 to 7 feet below ground surface. The direction of groundwater flow is generally south and east towards the Hutchinson River and Eastchester Bay.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report.

SECTION 5: ENFORCEMENT STATUS

The Applicant(s) under the Brownfield Cleanup Agreement is a/are Volunteer(s). The Applicant(s) does/do not have an obligation to address off-site contamination. However, the Department has determined that this site does not pose a significant threat to public health or the environment; accordingly, no enforcement actions are necessary.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

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

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

6.1.2: RI Results

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

benzene	1,2,4-trimethylbenzene
toluene	2,2,4-trimethylpentane
ethylbenzene	xylene (mixed)
hexane	methyl-tert-butyl ether (MTBE)

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.

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

IRM Soil Removal

In 2007, approximately 400 tons of petroleum contaminated soil associated with previously removed USTs was excavated from the northern portion of the site and disposed of at a permitted facility. Clean fill was brought to the site to backfill the excavation. The IRM activities 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), metals, polychlorinated biphenyls (PCBs), and pesticides. Soil vapor was analyzed for VOCs.

Soil - Laboratory analysis of soil samples collected generally indicated concentrations of gasoline-related VOCs, including benzene (at 5.5 parts per million, or ppm), toluene (at 20 ppm), ethylbenzene (at 57 ppm) and xylene (at 240 ppm) above the restricted residential use soil cleanup objectives (SCOs) and the protection of groundwater SCOs. Data does not indicate any off-site impacts in soil related to this site.

Groundwater - VOCs present in groundwater include benzene (max. concentration 1,000 parts per billion, or ppb), toluene (8600 ppb), ethylbenzene (2100 ppb), xylene (8400 ppb), methyl tert-butyl ether (980 ppb), and 1,2,4-trimethylbenzene (1700 ppb). Groundwater contamination has been detected in the sidewalk immediately downgradient of the site, but does not extend across the street. In March 2017, 0.01 feet (essentially a sheen) of light non-aqueous phase liquid (LNAPL) was measured at MW-9. Historic groundwater monitoring data from MW-9 identified a maximum of up to 1.8 feet of LNAPL.

Soil Vapor - Benzene was detected at 4500 micrograms per cubic meter (ug/m³), hexane at 170,000 ug/m³, 1,2,4-trimethylbenzene at 130 ug/m³, toluene at 15,000 ug/m³ and 2,2,4-trimethylpentane at 2,600,000 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*.

Direct contact with contaminants is unlikely because the majority of the site is covered with pavement. 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 groundwater and soil may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air buildings, is referred to as soil vapor intrusion. The potential exists for the inhalation of site contaminants due to soil vapor intrusion in any future on-site redevelopment. Environmental sampling indicates that 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

- 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.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375.

The selected remedy is a Track 4: Restricted use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the Excavation, Groundwater Treatment and Site Cover remedy.

The elements of the selected remedy, as shown in Figure 2, are as follows:

1. Remedial Design

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

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Conserving and efficiently managing resources and materials;
- Maximizing habitat value and creating habitat when possible;

- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation

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- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
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- any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.

Approximately 48 cubic yards of contaminated soil will be removed from the site.

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 designed grades at the site. The site will be re-graded to accommodate the installation of a cover system as described in the remedy element #4.

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5. LNAPL Extraction

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6. In-Situ Chemical Oxidation

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7. Institutional Control

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

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3);
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- require compliance with the Department approved Site Management Plan.

8. Site Management Plan

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

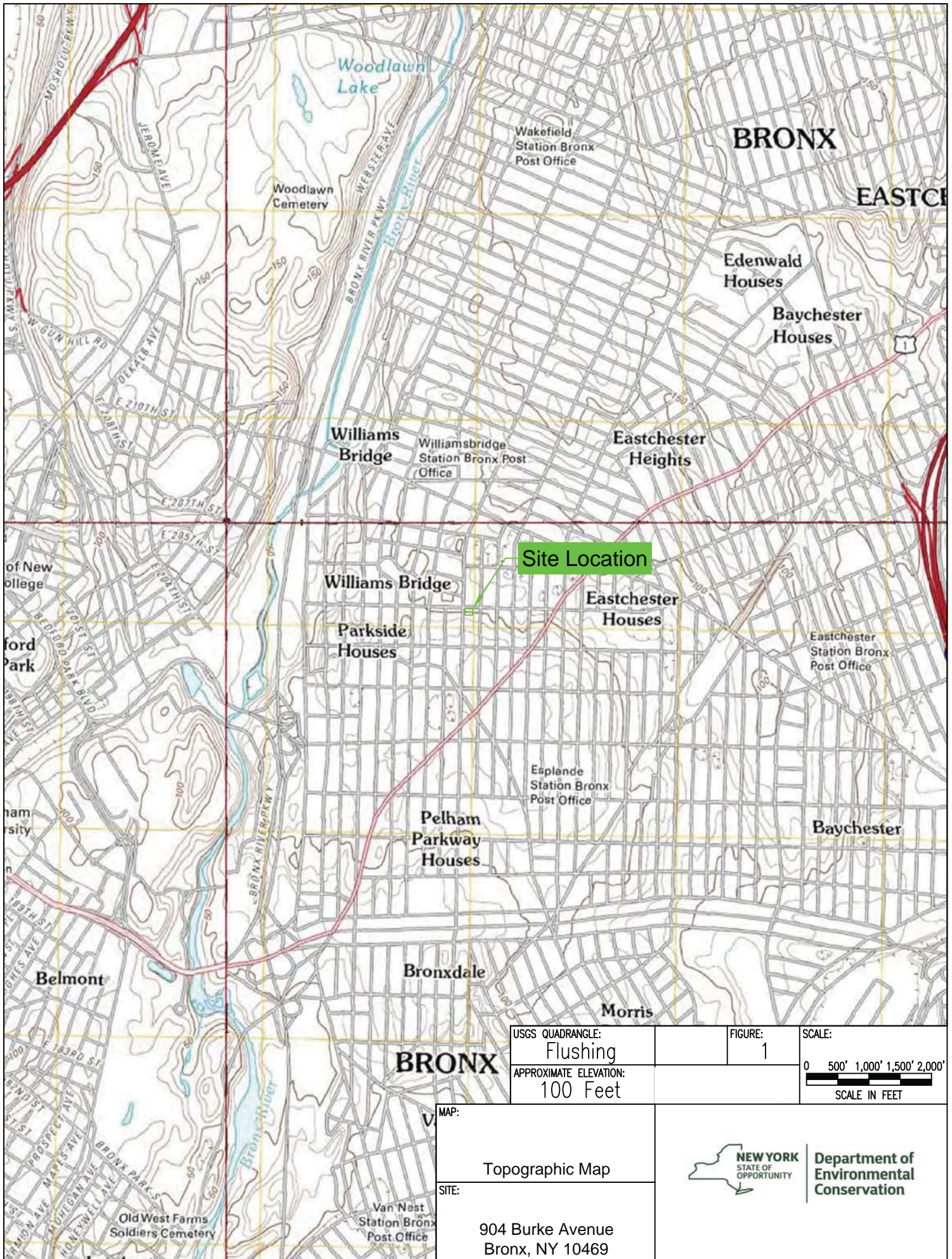
- a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:
 - o Institutional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

This plan includes, but may not be limited to:

- o an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- o descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- o a provision for evaluation of the potential for soil vapor intrusion for future buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- o provisions for the management and inspection of the identified engineering controls;
- o maintaining site access controls and Department notification; and
- o 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:

- o monitoring of groundwater and soil vapor to assess the performance and effectiveness of the remedy;
- o a schedule of monitoring and frequency of submittals to the Department;
- o monitoring for vapor intrusion for any future buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.



USGS QUADRANGLE:
Flushing
APPROXIMATE ELEVATION:
100 Feet

FIGURE:
1

SCALE:
0 500' 1,000' 1,500' 2,000'
SCALE IN FEET

MAP:
Topographic Map

SITE:
904 Burke Avenue
Bronx, NY 10469





BURKE AVENUE

BRONXWOOD AVENUE

RADCLIFF AVENUE

PROPOSED MONITORING WELL MW-13

APPROXIMATE EXTENT OF GROUNDWATER PLUME

INSTALL SITE-WIDE COVER/CAP

CONCRETE SIDEWALK

SITE PERIMETER ISCO TREATMENT AREA

SHALLOW SOIL EXCAVATION

UNDERGROUND PIPING TO BE REMOVED

LNAPL REMOVAL

APPROXIMATE LOCATION OF FORMER UST AREA

CONCRETE SLAB (FORMER AUTO REPAIR SHOP)

"SOURCE ZONE" ISCO TREATMENT AREA

RETAINING WALL

LEGEND:

- - - BROWNFIELD CLEANUP PROGRAM SITE BOUNDARY
- x - CHAIN LINK FENCE
- ⊕ MONITORING WELL
- SOIL BORING
- ⊙ SOIL GAS MONITORING POINT
- ⊕ ISCO INJECTION
- ⊕ PROPOSED MONITORING WELL



DATE: 5/1/2017

REVISED BY: BS

904 BURKE AVENUE
BRONX, NEW YORK

REMEDIAL PLAN OVERVIEW

FIGURE #

2



Department of
**Environmental
Conservation**