

DECISION DOCUMENT

37-88 Review Avenue
Brownfield Cleanup Program
Long Island City, Queens County
Site No. C241203
September 2020



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

DECLARATION STATEMENT - DECISION DOCUMENT

37-88 Review Avenue
Brownfield Cleanup Program
Long Island City, Queens County
Site No. C241203
September 2020

Statement of Purpose and Basis

This document presents the remedy for the 37-88 Review Avenue 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 37-88 Review Avenue site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design

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

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at

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

2. LNAPL Vacuum Enhanced Fluid Recovery

Installation and operation of light non-aqueous phase liquid (LNAPL) petroleum recovery wells throughout the site to remove potentially mobile LNAPL from the subsurface. The number, depth, type and spacing of the recovery wells will be determined during the design phase of the remedy. The LNAPL petroleum will be collected periodically from each well; however, if wells are determined by the Department to accumulate large quantities of LNAPL over extended time periods, they can be converted to automated collection.

Prior to the full implementation of this technology, studies will be conducted to more clearly define design parameters, including extraction well spacing. It is estimated the pilot study will run for three to six months.

3. Sub-Slab Depressurization System

Any on-site buildings will be required to have a sub-slab depressurization system (SSDS), or other acceptable measures, to mitigate the migration of vapors into the building from the subsurface. The LNAPL petroleum recovery system will be converted to an active SSDS to mitigate the currently occupied existing on-site buildings after the Department approves the termination of the recovery system.

4. Cover System

A site cover currently exists in areas not occupied by buildings in the form of asphalt pavement and will be maintained to allow for the industrial use of the site. Any site redevelopment will maintain the existing site cover. The site cover may include paved surface parking areas, sidewalks or soil where the upper one foot of exposed surface soil meets the applicable soil cleanup objectives (SCOs) for industrial use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6NYCRR part 375-6.7(d).

5. 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 industrial 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.

6. 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 5 above.
 - Engineering Controls: The LNAPL Recovery, Sub-slab Depressurization System, and Cover System discussed in Paragraphs 2, 3, and 4 above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
 - descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
 - a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 4 above will be placed in any areas where the upper one foot of exposed surface soil exceeds the applicable soil cleanup objectives (SCOs);
 - provisions for the management and inspection of the identified engineering controls;
 - maintaining site access controls and Department notification; and
 - the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.
- b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
 - monitoring of groundwater and soil vapor to assess the performance and effectiveness of the remedy;
 - a schedule of monitoring and frequency of submittals to the Department;
 - monitoring for vapor intrusion for any buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.
 - c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy.

This plan includes, but is not limited to:

- procedures for operating and maintaining the remedy;
- maintaining site access controls and Department notification;
- compliance inspection of the system(s) to ensure proper O&M as well as providing the data for any necessary reporting, and;
- providing the Department access to the site and O&M records.

Declaration

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

September 3, 2020

Date



Gerard Burke, Director
Remedial Bureau B

DECISION DOCUMENT

37-88 Review Avenue
Long Island City, Queens County
Site No. C241203
September 2020

SECTION 1: SUMMARY AND PURPOSE

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

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

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

SECTION 2: CITIZEN PARTICIPATION

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

DECInfo Locator - Web Application
<https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C241203>

Queens Central Library at Jamaica
Attn: Judith Todman
89-11 Merrick Boulevard
Jamaica, NY 11432
Phone: 718-990-0700

Queens Community Board 2

43-22 50th Street
Woodside, NY 11377
Phone: 718-533-8773

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at <http://www.dec.ny.gov/chemical/61092.html>

SECTION 3: SITE DESCRIPTION AND HISTORY

Location:

The 37-88 Review Avenue property ("site") is located in an industrial area of Long Island City, NY. The site is bounded to the east, south and west by industrial properties and to the north by Review Avenue followed by the First Calvary Cemetery. The site is approximately 500 feet southeast of the intersection of Greenpoint Avenue and Review Avenue.

Site Features:

The site is currently improved by a multi-story warehouse with a partial mezzanine located in the eastern portion of the parcel, a roof-top parking area with access to offices located on the first and second floors, and a parking area in the western portion of the parcel. A bus tour company currently occupies the warehouse for parking and maintenance. The entire site is covered by either asphalt pavement or the foundation slab of the building.

Current Zoning and Land Use:

The site is zoned as a manufacturing district (M3-1 heavy manufacturing district). The surrounding properties to the east, south and west are used for industrial/manufacturing purposes.

Past Use of the Site:

The site was historically part of a larger parcel that was used for various industrial purposes, including a petroleum refinery, chemical manufacturing, warehouse/storage, and waste transfer since the mid-1800s. Pratt Manufacturing Company operated the larger parcel from 1887 until 1892, when it was sold to Standard Oil Company of New York (SOCONY). SOCONY may have utilized portions of the larger parcel for the manufacture of wax, lubricating oils, burning oils, grease compounding, and as a cooerage from approximately 1892 through 1949. After 1949, these operations were decommissioned, and various property transactions took place, concluding in 1951.

Site Geology and Hydrogeology:

Stratigraphy at the site is characterized by urban fill overlying sand deposits with gravel and silt

lenses, followed at depth by a clay unit. The fill is composed of a mixture of heterogeneous soil intermixed with brick fragments, asphalt, wire, concrete, plastic and other debris, and ranging in thickness from 5 to 20 feet. Underlying the fill is an upper sand and gravel unit. Below the upper sand and gravel deposit lies a discontinuous, shallow silt and silty-clay horizon. The site lies between a local topographic high to the northeast and Newtown Creek to the southwest (a tidally influenced regional groundwater discharge area). Groundwater flow beneath the property located to the west was interpreted to flow to the south-southwest. To the east of the site, groundwater flow was observed to the south-southeast. Depth to groundwater ranges from approximately 12 feet to 20 feet below ground surface (bgs).

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 industrial use as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

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

SECTION 5: ENFORCEMENT STATUS

The Applicant under the Brownfield Cleanup Agreement is a Volunteer. The Applicant does 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
- indoor air

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 contaminants of concern identified at this site are:

isopropylbenzene	vinyl chloride
petroleum products	benzo(a)anthracene
benzene	benzo(a)pyrene
1,1,1-trichloroethane	dibenz[a,h]anthracene
1,1-dichloroethane	bis(2-ethylhexyl)phthalate
1,1-dichloroethene	arsenic
cis-1,2-dichloroethene	thallium
dichlorodifluoromethane	1,2-dichlorobenzene

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.

There were no IRMs performed at this site during the RI.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Nature and Extent of Contamination:

Soil and groundwater were analyzed for volatile organic compounds (VOCs) semi-volatile organic compounds (SVOCs), metals, pesticides, and poly-chlorinated biphenyl's (PCBs). Soil vapor was analyzed for VOCs.

Soil: The primary contaminants found in soil were poly-cyclic aromatic hydrocarbons (PAHs) at concentrations indicative of historic fill. Benzo(a)pyrene was detected at concentrations up to 12 parts per million (ppm), above the industrial use soil cleanup objective (IUSCO) of 1.1 ppm. Benzo(a)anthracene was detected up to 20 ppm (IUSCO is 11 ppm), and dibenz(a,h)anthracene up to 3.6 ppm (IUSCO is 1.1 ppm). These contaminants have also been detected at adjacent sites to the west, south, and east, but they are present as the result of historic fill, not migration from the site. No metals, PCBs, or pesticides were detected above their respective IUSCOs. No VOCs were detected in soil above the IUSCO or protection of groundwater soil cleanup objective. Data does not indicate any off-site impacts in soil related to this site.

Groundwater: The primary groundwater issue is the presence of a petroleum-related light non-aqueous phase liquid (LNAPL) floating on the water table throughout the site. The LNAPL is a weathered petroleum and is found at a maximum thickness of six feet in several monitoring wells. Limited dissolved-phase VOCs and SVOCs are also present in groundwater. Petroleum-related VOCs were detected including benzene at concentrations up to 77 parts per billion (ppb) (Class GA standard is 1 ppb), and isopropylbenzene up to 11 ppb (standard is 5 ppb). Chlorinated VOCs were also detected including 1,1,1-trichloroethane at concentrations up to 30 ppb (standard is 5 ppb), 1,1-dichloroethane up to 50 ppb (standard is 5 ppb), 1,1-dichloroethene up to 10 ppb (standard is 5 ppb), 1,2-dichlorobenzene up to 9 ppb (standard is 3 ppb), cis-1,2-dichloroethene up to 130 ppb (standard is 5 ppb), Freon 113 (dichlorodifluoromethane) up to 32 ppb (standard is 5 ppb), and vinyl chloride up to 18 ppb (standard is 2 ppb). Only one SVOC was detected above class GA standards, bis(2-ethylhexyl) phthalate at concentrations up to 20 ppb (standard is 5 ppb). Metals were detected above standards, including arsenic up to 35.9 ppb (standard is 25 ppb), and thallium up to 0.95 ppb (standard is 0.5 ppb). Other metals including iron, manganese, magnesium, and sodium were detected above standards, but are considered to be naturally occurring and not site-related. No PCBs or pesticides were detected above standards

in the most recent investigation. Detections of VOCs, SVOCs, and PCBs are present at concentrations above class GA standards off-site, are related to adjacent upgradient and downgradient remedial sites, and being addressed as part of those sites' remedial programs.

Soil Vapor: Vinyl chloride was detected at a maximum concentration of 41 micrograms per cubic meter (ug/m^3) in sub-slab vapor, but was not detected in indoor air. Trichloroethene was detected in sub-slab vapor at a maximum concentration of $25 \text{ ug}/\text{m}^3$ and also not detected in indoor air. Limited detections of petroleum-related contaminants were also detected in sub-slab vapor and indoor air. The maximum concentrations of petroleum-related VOCs detected in indoor air were total xylenes at $260 \text{ ug}/\text{m}^3$, ethylbenzene at $48 \text{ ug}/\text{m}^3$, and benzene at $5.2 \text{ ug}/\text{m}^3$. Methane was previously detected at concentrations above the lower explosive limit (LEL) in soil vapor samples, but the most recent survey of methane revealed no detections with a flame ionization detector (FID) in indoor air. An FID reading in a floor drain revealed a concentration of 370 ppm, less than $1/100^{\text{th}}$ of the LEL. FID measurements approximately 5 feet above the floor drain revealed a concentration of 2.6 ppm. Site-related soil vapor impacts are not anticipated to be migrating off-site.

6.4: Summary of Human Exposure Pathways

People are not expected to come into contact with contaminated soil or groundwater because the site is covered with buildings and pavement. People are not drinking the contaminated groundwater because the area is served by a public water supply that obtains water from a different source not affected by this contamination. Volatile organic compounds in soil vapor (air spaces within the soil) may move into buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The on-site commercial building is occupied and actions are recommended to address potential exposures associated with soil vapor intrusion. 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 4: Restricted use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the LNAPL Recovery, Vapor Mitigation, and Cover System 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;
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- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at a minimum, a 20-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

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Prior to the full implementation of this technology, studies will be conducted to more clearly define design parameters, including extraction well spacing. It is estimated the pilot study will run for three to six months.

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Any on-site buildings will be required to have a sub-slab depressurization system (SSDS), or other acceptable measures, to mitigate the migration of vapors into the building from the subsurface. The LNAPL petroleum recovery system will be converted to an active SSDS to mitigate the currently occupied existing on-site buildings after the Department approves the termination of the recovery system.

4. Cover System

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5. 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 industrial 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.

6. 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 5 above.
 - Engineering Controls: The LNAPL Recovery, Sub-slab Depressurization System, and Cover System discussed in Paragraphs 2, 3, and 4 above.

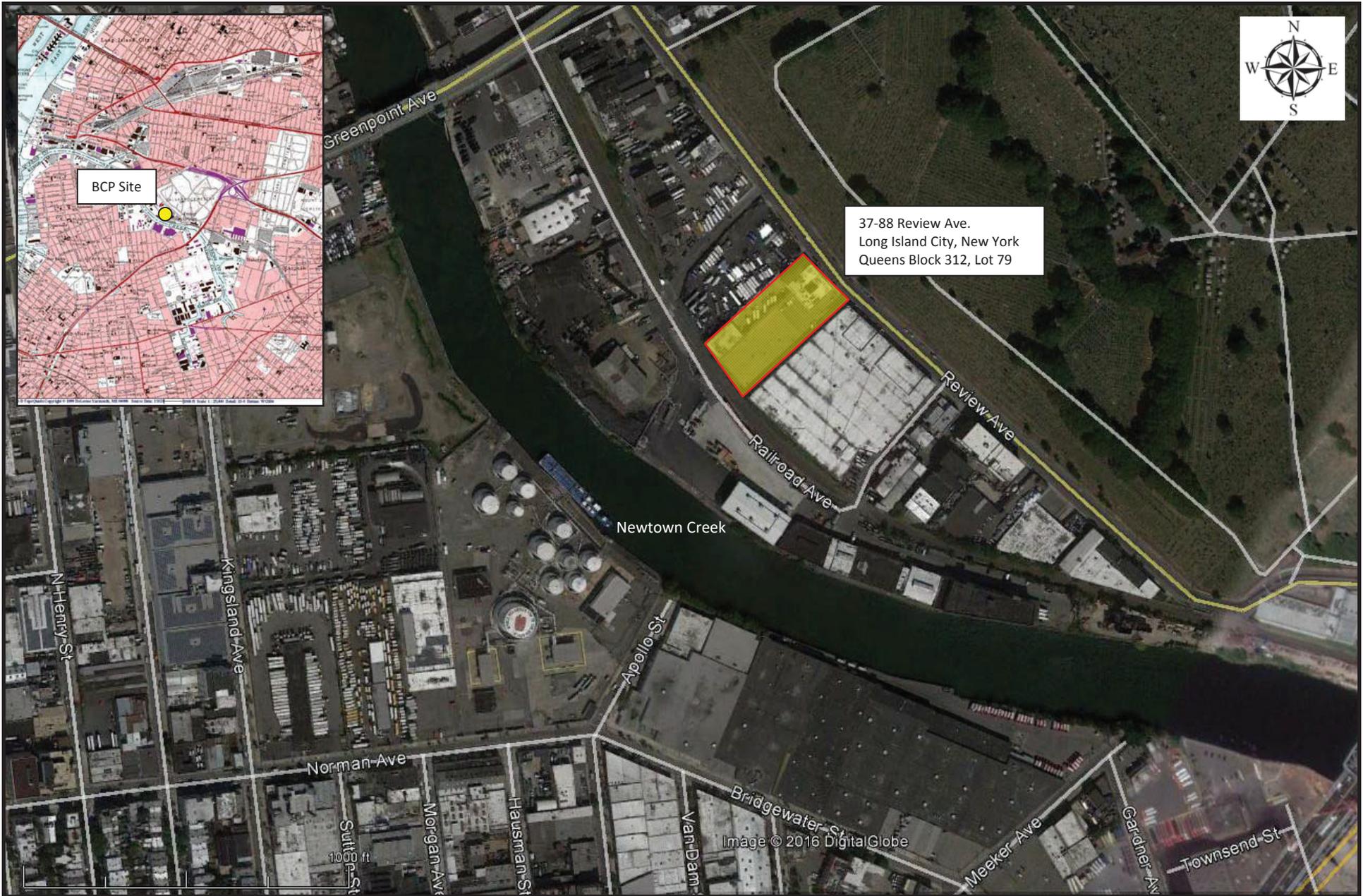
This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
 - descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
 - a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 4 above will be placed in any areas where the upper one foot of exposed surface soil exceeds the applicable soil cleanup objectives (SCOs);
 - provisions for the management and inspection of the identified engineering controls;
 - maintaining site access controls and Department notification; and
 - the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.
- b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
 - monitoring of groundwater and soil vapor to assess the performance and effectiveness of the remedy;
 - a schedule of monitoring and frequency of submittals to the Department;
 - monitoring for vapor intrusion for any buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

- c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy.

This plan includes, but is not limited to:

- procedures for operating and maintaining the remedy;
- maintaining site access controls and Department notification;
- compliance inspection of the system(s) to ensure proper O&M as well as providing the data for any necessary reporting, and;
- providing the Department access to the site and O&M records.



37-88 Review Ave.
Long Island City, New York
Queens Block 312, Lot 79

BCP Site



Figure 1
Location Map
37-88 Review Avenue, Long Island City, NY

Project: 37-88 Review Avenue Property BCP
Project No.: PHOENIX1601
Project Location: 37-88 Review Ave, LIC, NY
Date: March 2018

