DECISION DOCUMENT

250 Water Street
Brownfield Cleanup Program
New York, New York County
Site No. C231127
November 2021

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

DECLARATION STATEMENT - DECISION DOCUMENT

250 Water Street
Brownfield Cleanup Program
New York, New York County
Site No. C231127
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Statement of Purpose and Basis

This document presents the remedy for the 250 Water Street 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 250 Water Street 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. Excavation

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

- Grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- Soils which exceed 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
- Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.
- The existing on-site building will be demolished and materials which cannot be beneficially reused on site will be taken off-site for proper disposal in order to implement the remedy.

Excavation and off-site disposal of all on-site soils which exceed restricted-residential SCOs (RRSCOs), as defined by 6 NYCRR Part 375-6.8 at depth to upper 15 feet below grade surface (bgs) with a limited hot spot removal to a greater depth to 18 feet bgs.

Approximately 21,700 cubic yards of contaminated soil and historic fill 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 complete the backfilling of the excavation and establish the designed grades at the site.

4. Vapor Intrusion Evaluation

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

5. Groundwater Extraction & Treatment

Groundwater extraction and treatment will be implemented, as needed to treat petroleum related VOCs in groundwater. The groundwater extraction system will be designed and installed so that the capture zone is sufficient to dewater the site to address chlorinated VOCs in on-site groundwater. The extraction system will create a depression of the water table so that contaminated groundwater is directed toward the extraction points. The extracted groundwater will be treated using granular activated carbon and discharged to the New York City sewer system. Monitoring will be required down-gradient of the treatment zone. Pre- and post-dewatering monitoring will be

conducted for petroleum related VOCs at two monitoring wells downgradient of the treatment zone.

If the remedial action objectives (RAOs) are not achieved, an in-situ remedy, such as using activated carbon, oxygen release compound (ORC), or other in-site technology, will be implemented at the site to achieve the groundwater RAOs.

6. Engineering and Institutional Controls

Imposition of an institutional control in the form of an environmental easement, a Site Management Plan will be required. The remedy will achieve a Track 2 restricted residential cleanup at a minimum.

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 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:

- Institutional Controls: The Environmental Easement discussed in Paragraph 7 above.

- Engineering Controls: Provision for the sub-slab depressurization system (SSDS) as noted below.

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 restriction;
- A provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- A provision to install SSDS, if needed to mitigate the migration of vapors into the building from soil and groundwater;
- 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 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 protected of public health and the environment.

November 15, 2021

Date

Gerard Burke, Director
Remedial Bureau B

DECISION DOCUMENT

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New York, New York County
Site No. C231127
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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, where a contaminant is present at levels exceeding the soil cleanup objectives or other health-based or environmental standards, criteria or guidance, based on the reasonably anticipated use of the property.

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:

DECInfo Locator - Web Application
https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C231127

Manhattan Community Board 1
1 Centre Street
Room 2202 North
New York, NY 10007-7970
Phone: (212) 669--7970

New York Public Library
Chatham Square Branch
33 East Broadway
New York, NY 10002
Phone: (212)-964-6598

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 47,880-square-foot (1.1-acre) site is located at 250 Water Street in the Financial District neighborhood of Manhattan, NY and is identified as Tax Block 98, Lot 1. The site is bound by Pearl Street followed by a multiple-story residential building to the north, Peck Slip followed by Peck Slip School (P.S. 343) to the east, Water Street followed by Blue School Elementary School and multiple-story residential and commercial buildings to the south, and Beekman Street followed by multiple-story residential and commercial building to the west. The site is at an elevation of about 10 feet above mean sea level and the surrounding area generally slopes down toward the East River, which is located approximately 500 feet southeast of the site.

Site Features: The site is located in an urban area that is generally covered with roads, walkways and buildings. The site is currently an open-air commercial parking lot. The parking lot has a 400-vehicle capacity and is improved with a parking attendant kiosk and temporary storage shed near the center of the lot. The perimeter of the site is fenced with one automated barrier gate along Pearl Street.

Current Zoning and Land Use: The site is located in a C6-2A commercial district. The C6-2A district is mapped within the Special Lower Manhattan Special Purpose District. The adjoining parcels and surrounding area are used for commercial, residential and institutional purposes.

Past Use of the Site: Historical operations at the site which have contributed to contamination include a factory, an oil company, a printer, a metal works, a chemical and glue company, a chemical company, a trucking company, a thermometer company, a garage with two 550-gallon underground storage tanks (UST), a machine shop, and a gasoline service station.

Site Geology and Hydrogeology: According to the June 2021 Remedial Investigation Report, site stratigraphy consists of historic fill material underlain by native sand. Historic fill material characterized as grey to brown fine sand with varying proportions of silt, gravel, brick, concrete,

wood, ceramic, and coal, was encountered beneath the asphalt cover to depths ranging from about 5 to 17 feet below ground surface (bgs). Borings terminated between 10 and 32 feet bgs; the native soil underlying the fill consists of fine-grained sand with varying amounts of silt, gravel and clay. Bedrock was not encountered during this investigation but is expected to be about 125 feet bgs.

Groundwater was encountered at depths ranging from about 8.9 to 15.5 feet bgs. Groundwater flow direction was determined to flow to the southeast towards the East River.

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:

benzo(b)fluoranthene	xylene (mixed)
benzo(a)anthracene	naphthalene
benzo(k)fluoranthene	arsenic
indeno(1,2,3-CD)pyrene	barium
chrysene	lead
benzo(a)pyrene	mercury
1,2,4-trimethylbenzene	aldrin
1,3,5 trimethylbenzene	dieldrin
benzene	polychlorinated biphenyls (PCBs)
ethylbenzene	trichloroethene (TCE)
toluene	tetrachloroethene (PCE)

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

- soil
- groundwater

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:

A site wide and off-site investigation were conducted to delineate contamination in soil, groundwater, and soil vapor. Soil and groundwater samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), pesticides, the emerging contaminants per-and polyfluoroalkyl substances (PFAS) and 1,4 dioxane. Soil vapor was analyzed for VOCs and mercury vapor. According to the most recent analytical results, the primary contaminants of concern at the site are metals, petroleum related VOCs and SVOCs in soil, and petroleum-related VOCs in groundwater and petroleum and chlorinated related VOCs in soil vapor. Results are summarized below:

Soil:

Several metals were detected at concentrations that exceed their respective restricted residential soil cleanup objectives (RRSCOs), including mercury up to 730 parts per million (ppm) compared to the RRSCO of 0.81 ppm; barium up to 890 ppm (RRSCO is 400 ppm); arsenic up to 60 ppm (RRSCO is 16 ppm); and lead up to 2,100 ppm (RRSCO is 400 ppm). Several petroleum related VOCs were detected at concentrations that exceed their applicable protection of groundwater soil cleanup objectives (PGSCOs), including: 1,2,4-trimethylbenzene up to 1,200 ppm (PGSCO is 3.6 ppm); benzene up to 14 ppm (PGSCO is 0.06 ppm); ethylbenzene up to 250 ppm (PGSCO is 1 ppm); naphthalene up to 450 ppm (PGSCO is 12 ppm); toluene up to 230 ppm (PGSCO is 0.7 ppm); and total xylene 1,800 ppm (PGSCO is 1.6 ppm). Several SVOCs exceed their applicable PGSCOs and/or RRSCOs, including: benzo(a)anthracene up to 13 ppm (PGSCO is 1 ppm); benzo(a)pyrene up to 11 ppm (RRSCO is 1 ppm); benzo(k)fluoranthene up to 5.2 ppm (PGSCO is 1.7 ppm); benzo(b)fluoranthene up to 14 ppm (RRSCO is 1 ppm); chrysene up to 13 ppm (PGSCO is 1 ppm); indeno(1,2,3-c,d)pyrene up to 7.3 ppm (RRSCO is 0.5 ppm); and benzo(k)fluoranthene up to 5.2 ppm (PGSCO is 1.7 ppm).

Polychlorinated biphenyls (PCBs) were detected up to 46 ppm (RRSCO is 1 ppm). Several pesticides exceeded their respective RRSCOs, including aldrin detected up to 0.24 ppm (RRSCO is 0.097 ppm); dieldrin up to 0.78 (RRSCO is 0.2 ppm). Emerging contaminants such as perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) were detected at concentration that exceed their respective unrestricted soil guidance values (UUSGVs) and protection of groundwater soil guidance values (PGSGVs), including PFOS up to 5.9 ppm (UUSGV is 0.88 and PGSGV is 3.7); PFOA up to 2.8 ppm (UUSGV is 0.66 ppm and PGSGV is 1.1 ppm).

Based on the sampling results, there is no indication that these contaminants have migrated off-site.

Groundwater:

Several petroleum related VOCs were detected in on-site groundwater at levels exceeding their respective ambient water quality standards (AWQS), including: 1,2,4-trimethylbenzene up to 6,100 parts per billion (ppb) compared to the AWQS of 5 ppb; 1,3,5 trimethylbenzene up to 1,800 ppb (AWQS is 5 ppb); benzene up to 330 ppb (AWQS is 1 ppb); ethylbenzene up to 1,800 ppb (AWQS is 5 ppb); naphthalene up to 1,700 (AWQS is 10 ppb); o-xylene up to 3,400 ppb (AWQS is 5 ppb), toluene up to 2,700 ppb (AWQS up to 5 ppb). Several SVOCs were also detected; biphenyl up to 28 ppb (AWQS up to 5 ppb); phenol up to 44 ppb (AWQS is 1 ppb); benzo(a)anthracene 4.6 ppb (AWQS is 0.002 ppb); benzo(b)fluoranthene up to 2.8 ppb (AWQS is 0.002 ppb). PCBs were detected up to 0.139 ppb (AWQS is 0.09 ppb). Several metals were also detected; lead (total metal) up to 725.5 ppb (AWQS is 25 ppb); barium (total metal) up to 1,136 ppb (AWQS is 1,000 ppb). PFOA was detected in groundwater samples at a maximum concentration of 126 nanograms per liter (ng/L) (maximum concentration level (MCL) is 10 ng/L), and PFOS was detected in groundwater samples at a maximum concentration of 103 ng/L (MCL is 10 ng/L). Total PFAS concentrations in groundwater samples ranged from 60.3 ng/L to 427.6 ng/L. 1,4-dioxane was not detected in groundwater samples.

Based on the sampling results, data does not indicate any off-site impacts in groundwater related to the site.

Soil Vapor and Ambient Air:

Based upon the remedial investigation results, mercury vapor was not detected in soil vapor samples collected on-site. Mercury vapor was detected at concentrations of 0.222 micrograms per cubic meter (µg/m3) and 0.271 µg/m3 in two soil vapor samples collected from beneath the Pearl Street sidewalk adjoining the site. Petroleum-related VOCs such as benzene, toluene, ethylbenzene, and xylenes (BTEX) were detected in soil vapor samples and the ambient air samples. BTEX concentrations detected in soil vapor ranged from about 15.8 µg/m3 to 6,030 µg/m3. BTEX was detected in the ambient air sample at a concentration of 6.84 µg/m3.
Total VOCs concentration in soil vapor samples ranged about 386 µg/m3 to 39,300 µg/m3.

Chlorinated VOCs (CVOCs) were reported in the soil vapor samples, with tetrachloroethene (PCE) reported in fourteen samples ranging from about 6.39 ug/m3 to 827 ug/m3 and trichloroethene (TCE) reported in seven samples ranging from 1.1 ug/m3 to 27.3 ug/m3. An on-site source of CVOCs was not identified.

Based on the soil vapor sampling results, site-related soil vapor impacts do not appear to be migrating off-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.*

The site occupies the entire city block and is covered with asphalt, pavement, and a parking attendant kiosk. The perimeter of the site is fenced with an automated barrier ingress/ egress gate. People are not expected to come into contact with contaminated soil or groundwater unless they dig below the surface. 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. Mercury vapor will continue to be monitored throughout the investigation/remediation of the site. 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 potential exists for the inhalation of volatile contaminants in indoor air of any buildings constructed on-site via the soil vapor intrusion pathway. Any off-site vapor impacts will be investigated under a different program as volatile organic contaminants in soil vapor appear to be originating from an off-site source.

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 Soil Excavation, Backfill, and Soil Vapor Intrusion remedy.

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

1. Remedial Design

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

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

- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes 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. Excavation

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

- Grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- Soils which exceed 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
- Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.
- The existing on-site building will be demolished and materials which cannot be beneficially reused on site will be taken off-site for proper disposal in order to implement the remedy.

Excavation and off-site disposal of all on-site soils which exceed restricted-residential SCOs (RRSCOs), as defined by 6 NYCRR Part 375-6.8 at depth to upper 15 feet below grade surface (bgs) with a limited hot spot removal to a greater depth (18 feet bgs).

Approximately 21,700 cubic yards of contaminated soil and historic fill 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 complete the backfilling of the excavation and establish the designed grades at the site.

4. Vapor Intrusion Evaluation

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

5. Groundwater Extraction & Treatment

Groundwater extraction and treatment will be implemented, as needed, to treat petroleum related VOCs in groundwater. The groundwater extraction system will be designed and installed so that the capture zone is sufficient to dewater the site to address chlorinated VOCs in on-site groundwater. The extraction system will create a depression of the water table so that contaminated groundwater is directed toward the extraction points. The extracted groundwater will be treated using granular activated carbon and discharged to the New York City sewer system. Monitoring will be required down-gradient of the treatment zone. Pre- and post-dewatering monitoring will be conducted for petroleum related VOCs at two monitoring wells downgradient of the treatment zone.

If the remedial action objectives (RAOs) are not achieved an in-situ remedy, such as using activated carbon, oxygen release compound (ORC), or other in-site technology, will be implemented at the site to achieve the groundwater RAOs.

6. Engineering and Institutional Controls

Imposition of an institutional control in the form of an environmental easement, a Site Management Plan will be required. The remedy will achieve a Track 2 restricted residential cleanup at a minimum.

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 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:

b. 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 7 above.

- Engineering Controls: Provision for the sub-slab depressurization system (SSDS) as noted below.

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 restriction;
- A provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- A provision to install SSDS, if needed to mitigate the migration of vapors into the building from soil and groundwater.
- 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 on the site, as may be required by the Institutional and Engineering Control Plan discussed above.