

DECISION DOCUMENT

521 East Tremont Avenue
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203161
July 2024



**Department of
Environmental
Conservation**

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

DECLARATION STATEMENT - DECISION DOCUMENT

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Brownfield Cleanup Program
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Statement of Purpose and Basis

This document presents the remedy for the 521 East Tremont 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 (NYSDEC) for the 521 East Tremont Avenue site and the public's input to the proposed remedy presented by NYSDEC.

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; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.
- Additionally, to incorporate green remediation principles and techniques to the extent

feasible in the future development at this site, any future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction.

As part of the remedial design program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise™ (available in the Sustainable Remediation Forum [SURF] library) or similar NYSDEC accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

2. Excavation

The existing on-site buildings 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 contaminant source areas, including:

- soil exceeding the 6 NYCRR Part 371 hazardous criteria for lead;
- soil containing total SVOCs exceeding 500 ppm; and
- 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 standard.

Track 2 Area (proposed building basement footprint): Excavation and off-site disposal of all on-site soils which exceed restricted-residential SCOs, as defined by 6 NYCRR Part 375-6.8 in the upper 15 feet. If a Track 2 restricted residential cleanup is achieved, a Cover System will not be a required element of the remedy for this portion of the site.

Track 4 Area (remainder of site): All soils in the upper two feet which exceed the restricted

residential soil cleanup objectives (SCOs) will be excavated and transported off-site for disposal to allow for placement of the site cover. In addition, soil will be excavated in three hotspots in the Track 4 area to depths ranging from 5 to 13 feet below grade surface (bgs).

Approximately 8,300 cubic yards of contaminated soil will be removed from the site.

Collection and analysis of confirmation and documentation samples at the remedial excavation depths will be used to verify that SCOs for the site have been achieved. If confirmation/documentation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicant must notify NYSDEC, submit the sample results and, in consultation with NYSDEC, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

To ensure proper handling and disposal of excavated material, waste characterization sampling will be completed for all identified contaminated site material. Waste characterization sampling will be performed exclusively for the purposes of off-site disposal in a manner suitable to receiving facilities and in conformance with applicable federal, state and local laws, rules, and regulations and facility-specific permits.

3. Backfill

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d)(1) will be brought in to complete the backfilling of the excavation and establish the design grades at the site.

4. Cover System

A site cover will be required in areas where the upper two feet of exposed surface soil will exceed the applicable SCOs, to allow for future restricted residential use of the site. Where a soil cover is to be used it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

5. In-Situ Chemical Oxidation

In-situ chemical oxidation (ISCO) will be implemented to treat tetrachloroethylene (PCE) and its associated degradation compounds in groundwater. A chemical oxidizing agent will be injected into the subsurface to destroy the contaminants in an approximately 4,300-square foot area located in the northeastern portion of the site near the former dry cleaner. The method and depth of injection will be determined during the remedial design.

Monitoring will be required up-gradient, down-gradient, and within the treatment zone. Monitoring will be conducted for contaminants of concern (VOCs), dissolved oxygen, oxidation/reduction potential, pH, and other parameters to assess the effectiveness of the

treatment.

6. Vapor Mitigation

Any proposed on-site buildings will be required to have a sub-slab depressurization system, or other acceptable measures, to mitigate the potential migration of vapors into the building from soil and/or groundwater.

7. Engineering and Institutional Controls

Imposition of an institutional control in the form of an environmental easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 2/Track 4 restricted residential, commercial cleanup at a minimum and will include imposition of a site cover on the Track 4 portion of the site and a vapor mitigation system for the site as engineering controls.

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 NYSDEC 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, commercial or 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 NYCDOHMH; and
- require compliance with the NYSDEC 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 Remedy Element 7 above.
 - Engineering Controls: The site cover system for the Track 4 portion of the site discussed in Remedy Element 4, and the vapor mitigation system discussed in Remedy Element 6.

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 water 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 Remedy Element 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the

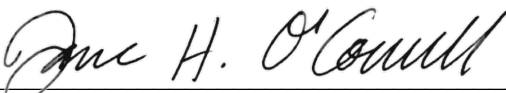
- applicable soil cleanup objectives (SCOs);
 - provisions for the management and inspection of the identified engineering controls;
 - maintaining site access controls and NYSDEC notification; and
 - the steps necessary for the periodic reviews and certification of the institutional and/or engineering 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 to assess the performance and effectiveness of the remedy;
 - a schedule of monitoring and frequency of submittals to the NYSDEC.
- 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 active vapor mitigation system(s). The plan includes, but is not limited to:
- procedures for operating and maintaining the system(s); and
 - compliance inspection of the system(s) to ensure proper O&M as well as providing the data for any necessary reporting.

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.

July 15, 2024

Date


Jane H. O'Connell
Regional Remediation Engineer, Reg. 2

DECISION DOCUMENT

521 East Tremont Avenue
Bronx, Bronx County
Site No. C203161
July 2024

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (NYSDEC), 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.

NYSDEC 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

NYSDEC 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 NYSDEC 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=C203161>

New York Public Library Tremont Branch
1866 Washington Avenue
Bronx, NY 10457
Phone: (718) 299-5177

Bronx Community Board 6
1932 Arthur Ave., Room 403-a
Bronx, NY 10457
Phone: (718) 579-6990

Receive Site Citizen Participation Information By Email

Please note that NYSDEC'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 site is located at 521 East Tremont Avenue and 4223 Third Avenue in the East Tremont neighborhood of the Bronx, NY and is designated as Block 3043, Lots 72 and 77 on the NYC Tax Map. The site is abutted to the north by a parking lot and a funeral home; to the east by 3rd Avenue, followed by mixed-use buildings, an active construction site, commercial uses, and a church; to the south by East Tremont Avenue followed by commercial buildings; and to the west by commercial buildings, Bathgate Avenue, and a preschool. Tremont Park is located approximately 120 feet southeast of the site.

Site Features:

The site is an approximately 0.57-acre parcel currently occupied by a private parking lot with a gravel surface on the western portion of the property, and a public asphalt-paved parking lot on the north and east part of the property. The southern portion of the site contains a three-story commercial building with a cellar level, and a one-story slab-on-grade, commercial building. Both buildings are vacant.

Current Zoning and Land Use:

The current zoning of the site is C4-5X (commercial) but is undergoing rezoning to C4-4D (commercial) with Mandatory Inclusionary Housing as part of NYC Uniform Land Use Review Procedure, to construct a mixed-use development.

The site is currently vacant and unoccupied.

The surrounding area is predominantly comprised of mixed-use commercial/residential with some industrial uses and public facilities, including a school.

Past Use of the Site:

The site was developed with residential buildings as early as 1901 and various commercial uses between approximately 1915 through present-day. Historical site operations included a printing facility (Tremont Printing Co.) on the southeastern portion of the site between approximately 1915 and 1927. A dry cleaner was located in the northern portion of the site between approximately 1961 and 1980.

Site Geology and Hydrology:

The site is mapped on the U.S. Geological Survey (USGS) 7.5 Minute Topographic Map Central Park, N.Y. Quadrangle (2018). The site is approximately 60 to 70 feet above the North American Vertical Datum (NAVD) of 1988 (an approximation of mean sea level), and regional surface topography slopes toward the southwest.

The stratigraphy beneath the site consists of historic fill comprised of sand, silt, gravel, brick, with trace amounts of wood, metal, glass, ash, and ceramic fragments from just below surface grade (bsg) to approximately 3 to 16 feet bsg. The fill material was underlain by apparent native soil consisting of brown sand, silt, gravel, and clay between approximately 3 and 25 feet bsg (boring terminus). Presumed shallow bedrock was encountered at depths ranging from approximately 5 to 22 feet bsg. Based on the 2019 geotechnical investigation, alluvial deposits were encountered in two borings located within the northeastern portion of the site along Third Avenue, and glacial till was encountered in the remainder of the site at thicknesses of 2 to 27 feet. Gneiss bedrock was encountered below the glacial till and alluvial deposits at depths ranging from 10 to 63 feet bsg. Bedrock was deepest in the eastern portion of the site.

Groundwater beneath the Site ranges from 11.1 to 14.3 feet bsg across the site. Based on a well elevation survey, groundwater flows in a generally southerly to southwesterly direction beneath the site.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

NYSDEC 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, NYSDEC 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
- indoor air
- sub-slab vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

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

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. NYSDEC 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:

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:

- | | |
|-------------------------|------------------------|
| trichloroethene (TCE) | benzo(k)fluoranthene |
| tetrachloroethene (PCE) | dibenz[a,h]anthracene |
| lead | fluoranthene |
| benzo(a)pyrene | indeno(1,2,3-cd)pyrene |
| chrysene | phenanthrene |
| benzo(a)anthracene | cis-1,2-dichloroethene |
| benzo(b)fluoranthene | 1,4-dioxane |
| pyrene | vinyl chloride |
| barium | |

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.

Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), per- and polyfluoroalkyl substances (PFAS), and pesticides. Soil vapor was analyzed for VOCs. Based on

the previous investigation, the primary contaminants of concern for the site are SVOCs and metals in soil and groundwater, and VOCs in soil vapor.

Soil -SVOCs were detected at concentrations exceeding their applicable restricted residential soil cleanup objectives (RRSCOs) including maximum concentrations of benzo(a)anthracene at 62 parts per million, or ppm (RRSCO of 1 ppm), benzo(a)pyrene at 49 ppm (RRSCO of 1 ppm), benzo(b)fluoranthene at 60 ppm (RRSCO of 1 ppm), benzo(k)fluoranthene at 30 ppm (RRSCO of 3.9 ppm), chrysene at 56 ppm (RRSCO of 3.9 ppm), dibenz(a,h)anthracene at 2.5 ppm (RRSCO of 0.33 ppm), fluoranthene at 150 ppm (RRSCO of 100 ppm), indeno(1,2,3-cd)pyrene at 8 ppm (RRSCO of 0.5 ppm), phenanthrene at 150 ppm (RRSCO of 100 ppm), and pyrene at 140 ppm (RRSCO of 100 ppm).

Metals detected at concentrations above the RRSCOs include maximum concentrations of arsenic at 51.7 ppm (RRSCO of 16 ppm), barium at 2,640 ppm (RRSCO of 400 ppm), cadmium at 24.3 ppm (RRSCO of 4.3 ppm), lead at 4,180 ppm (RRSCO of 400 ppm), and mercury at 12 ppm (RRSCO of 0.81 ppm).

No VOCs, pesticides, PCBs, PFAS, or 1,4-dioxane were detected above the RRSCOs. Data does not indicate any off-site impacts in soil related to the site.

Groundwater - VOCs were detected exceeding the NYS Ambient Water Quality Standards and Guidance Values (AWQSGVs), including maximum concentrations of cis-1,2-dichloroethylene at 64 parts per billion, or ppb (AWQSGV of 5 ppb), tetrachloroethene (PCE) at 490 ppb (AWQSGV of 5 ppb), trichloroethene (TCE) at 120 ppb (AWQSGV of 5 ppb), vinyl chloride at 14 ppb (AWQSGV of 2 ppb), and 1,4-dioxane at 4.7 ppb (AWQSGV of 0.35 ppb).

Dissolved selenium was detected exceeding the AWQSGV (10 ppb) at a concentration of 15.8 ppb in one sample. The other four dissolved metals detected at concentrations above their respective AWQSGVs in groundwater were naturally-occurring elements including iron, magnesium, manganese, and sodium.

The following PFAS were detected in exceedance of applicable guidance values: PFOA at a maximum concentration of 204 parts per trillion, or ppt (guidance value 6.7 ppt); and PFOS at a maximum concentration of 131 ppt (guidance value 2.7 ppt).

No SVOCs, pesticides, or PCBs were detected above laboratory reporting limits in any groundwater samples. Data does not indicate any off-site impacts in groundwater related to the site.

Soil Vapor, Sub-Slab Soil Vapor, and Indoor Air - For soil vapor samples, petroleum-related VOCs include maximum concentrations of benzene at 7.1 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), ethylbenzene at 16 $\mu\text{g}/\text{m}^3$, m,p-xylenes at 79 $\mu\text{g}/\text{m}^3$, n-heptane at 270 $\mu\text{g}/\text{m}^3$, n-hexane at 640 $\mu\text{g}/\text{m}^3$, and toluene at 350 $\mu\text{g}/\text{m}^3$, and chlorinated-solvent-related VOCs include maximum concentrations of PCE at 370 $\mu\text{g}/\text{m}^3$, TCE at 63 $\mu\text{g}/\text{m}^3$, and methylene chloride at 15 $\mu\text{g}/\text{m}^3$.

In sub-slab soil vapor, petroleum-related VOCs include maximum concentrations of benzene at 5.3 µg/m³, ethylbenzene at 12 µg/m³, m,p-xylenes at 59 µg/m³, n-heptane at 9.3 µg/m³, n-hexane at 8.2 µg/m³, and toluene at 33 µg/m³, and chlorinated-solvent-related VOCs include maximum concentrations of PCE at 140 µg/m³ and methylene chloride at 3.6 µg/m³.

In indoor air, petroleum-related VOCs include maximum concentrations of benzene at 3.6 µg/m³, ethylbenzene at 13 µg/m³, m,p-xylenes at 51 µg/m³, n-heptane at 14 µg/m³, n-hexane at 6,500 µg/m³, and toluene at 3,400 µg/m³, and chlorinated-solvent-related VOCs include maximum concentrations of PCE at 1.5 µg/m³, TCE at 0.63 µg/m³ and methylene chloride at 45 µg/m³.

Data does not indicate any off-site impacts in soil vapor related to the 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*.

Since the site is vacant and covered by buildings, asphalt, and gravel, people will not come into contact with site-related soil and groundwater contamination unless they dig below the surface. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in soil vapor (air spaces within the soil) may move into buildings and affect 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 on-site building is vacant, the inhalation of site-related contaminants due to soil vapor intrusion does not represent a concern for the site in its current condition. However, the potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site development. In addition, environmental sampling indicates soil vapor intrusion from site contamination 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.
- Remove the source of ground 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 Multiple Cleanup Tracks (Track 2/Track 4 Restricted Residential Use) remedy.

The selected remedy is referred to as the Excavation, Groundwater Treatment, Cover System and Vapor Mitigation remedy.

The elements of the selected remedy, as shown in Figures 2-5, 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; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction.

As part of the remedial design program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise™ (available in the Sustainable Remediation Forum [SURF] library) or similar NYSDEC accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

2. Excavation

The existing on-site buildings 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 contaminant source areas, including:

- soil exceeding the 6 NYCRR Part 371 hazardous criteria for lead;
- soil containing total SVOCs exceeding 500 ppm; and
- 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 standard.

Track 2 Area (proposed building basement footprint): Excavation and off-site disposal of all on-site soils which exceed restricted-residential SCOs, as defined by 6 NYCRR Part 375-6.8 in the upper 15 feet. If a Track 2 restricted residential cleanup is achieved, a Cover System will not be a required element of the remedy for this portion of the site.

Track 4 Area (remainder of site): All soils in the upper two feet which exceed the restricted residential soil cleanup objectives (SCOs) will be excavated and transported off-site for disposal to allow for placement of the site cover. In addition, soil will be excavated in three hotspots in the Track 4 area to depths ranging from 5 to 13 feet below grade surface (bgs).

Approximately 8,300 cubic yards of contaminated soil will be removed from the site.

Collection and analysis of confirmation and documentation samples at the remedial excavation depths will be used to verify that SCOs for the site have been achieved. If confirmation/documentation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicant must notify NYSDEC, submit the sample results and, in consultation with NYSDEC, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

To ensure proper handling and disposal of excavated material, waste characterization sampling will be completed for all identified contaminated site material. Waste characterization sampling will be performed exclusively for the purposes of off-site disposal in a manner suitable to receiving facilities and in conformance with applicable federal, state and local laws, rules, and regulations and facility-specific permits.

3. Backfill

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d)(1) will be brought in to complete the backfilling of the excavation and establish the design grades at the site.

4. Cover System

A site cover will be required in areas where the upper two feet of exposed surface soil will exceed the applicable SCOs, to allow for future restricted residential use of the site. Where a soil cover is to be used it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

5. In-Situ Chemical Oxidation

In-situ chemical oxidation (ISCO) will be implemented to treat tetrachloroethylene (PCE) and its

associated degradation compounds in groundwater. A chemical oxidizing agent will be injected into the subsurface to destroy the contaminants in an approximately 4,300-square foot area located in the northeastern portion of the site near the former dry cleaner. The method and depth of injection will be determined during the remedial design.

Monitoring will be required up-gradient, down-gradient, and within the treatment zone. Monitoring will be conducted for contaminants of concern (VOCs), dissolved oxygen, oxidation/reduction potential, pH, and other parameters to assess the effectiveness of the treatment.

6. Vapor Mitigation

Any proposed on-site buildings will be required to have a sub-slab depressurization system, or other acceptable measures, to mitigate the potential migration of vapors into the building from soil and/or groundwater.

7. Engineering and Institutional Controls

Imposition of an institutional control in the form of an environmental easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 2/Track 4 restricted residential, commercial cleanup at a minimum and will include imposition of a site cover on the Track 4 portion of the site and a vapor mitigation system for the site as engineering controls.

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 NYSDEC 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, commercial or 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 NYCDOHMH; and
- require compliance with the NYSDEC approved Site Management Plan.

8. Site Management Plan

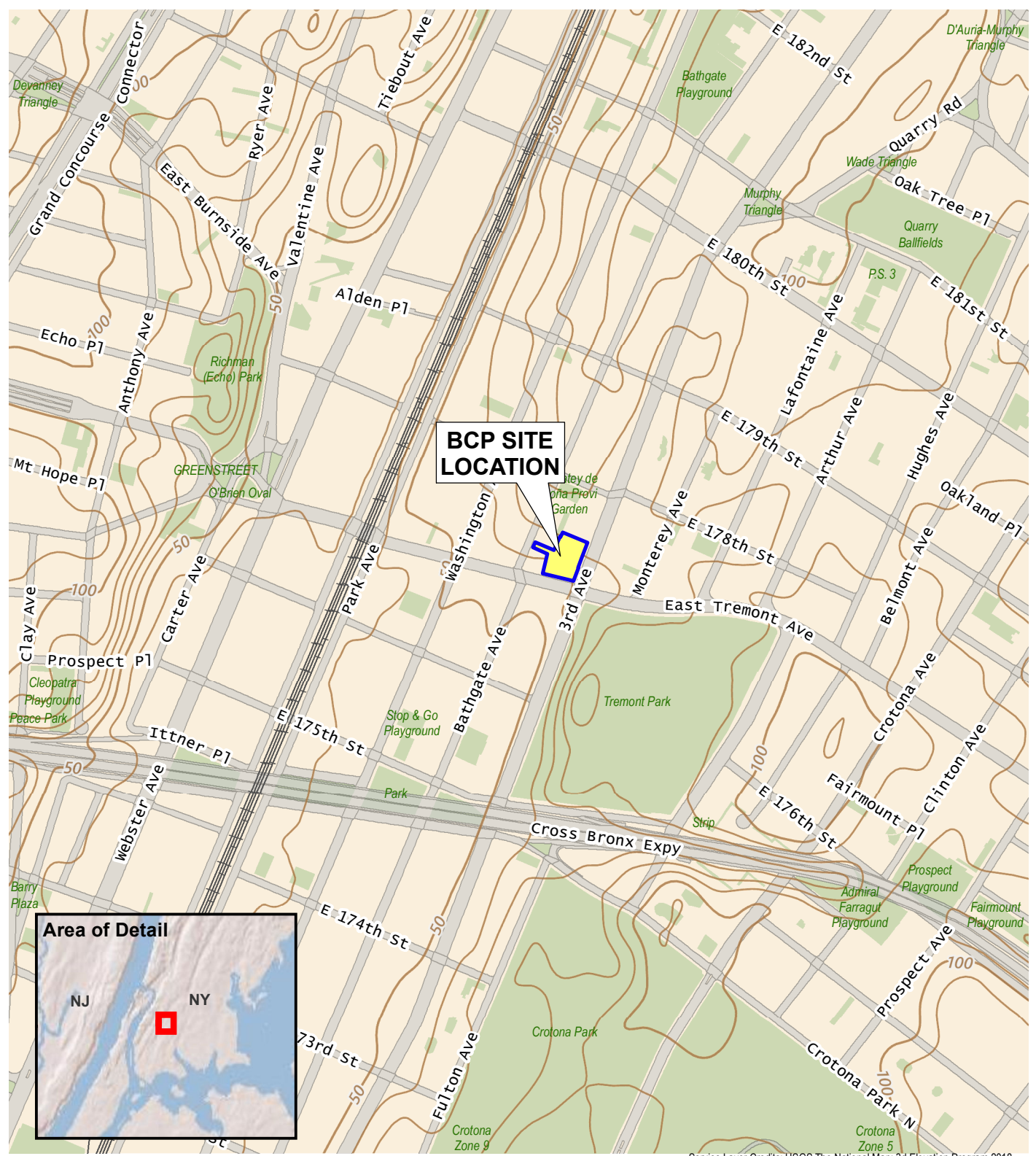
A Site Management Plan is required, which includes the following:

- 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 Remedy Element 7 above.
 - Engineering Controls: The site cover system for the Track 4 portion of the site discussed in Remedy Element 4, and the vapor mitigation system discussed in Remedy Element 6.

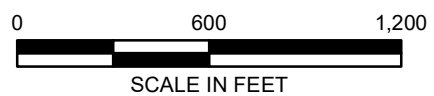
This plan includes, but may not be limited to:

- 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 water 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 Remedy 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);
 - provisions for the management and inspection of the identified engineering controls;
 - maintaining site access controls and NYSDEC 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 to assess the performance and effectiveness of the remedy;
 - a schedule of monitoring and frequency of submittals to the NYSDEC.
- 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 active vapor mitigation system(s). The plan includes, but is not limited to:
- procedures for operating and maintaining the system(s); and
 - compliance inspection of the system(s) to ensure proper O&M as well as providing the data for any necessary reporting.

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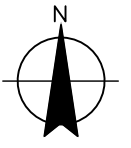
SITE LOCATION

DATE
8/23/2022

BCP ID NO.
C203161

FIGURE
1

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LEGEND

- BCP SITE BOUNDARY
- TRACK 4 PROPOSED REMEDIAL EXCAVATION TO 2 FEET BELOW GRADE
- TRACK 2 PROPOSED REMEDIAL EXCAVATION TO APPROXIMATELY 15 FEET BELOW GRADE OR BEDROCK (IF SHALLOWER)
- PROPOSED HOTSPOT EXCAVATION (25' X 25')
- PROPOSED SIDEWALL ENDPOINT SAMPLE LOCATION
- PROPOSED BOTTOM ENDPOINT SAMPLE LOCATION



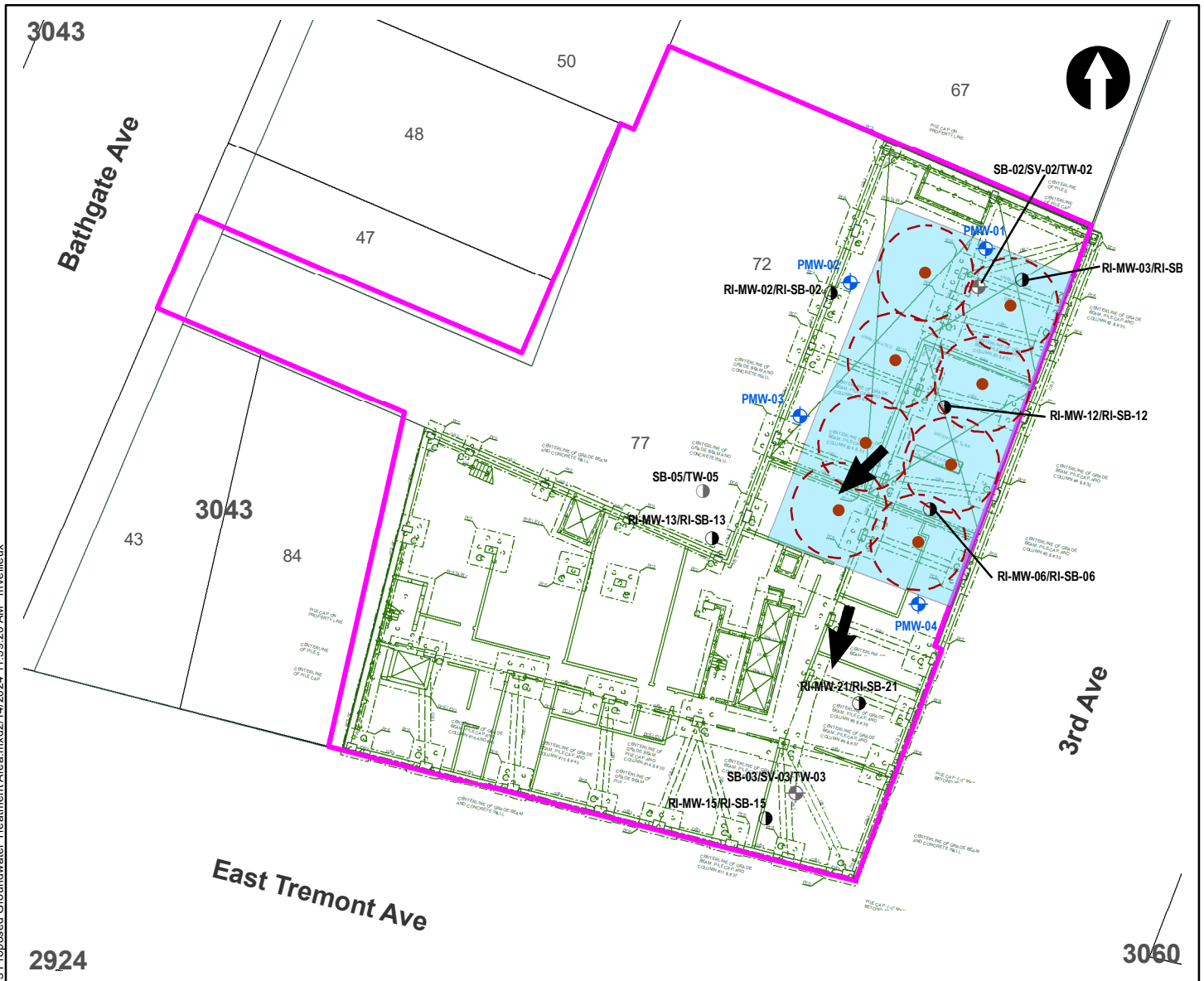
Map Source:
SLCE Architects, LLP "CELLAR OVERALL PLAN", Drawing No. A-101.00, 09/08/2023.

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Bronx, New York

PROPOSED REMEDIAL EXCAVATION PLAN










DATE 5/16/2024
PROJECT NO. 190204
FIGURE 2

© 2024 AKRF Q:\Projects\190204 - 521 EAST TREMONT AVENUE\Technical\GIS and Graphics\hazmat\RAWP\190204 Fig.13 Proposed Groundwater Treatment Area.mxd 2/14/2024 11:59:20 AM mveilleux



Map Source:
 NYDCDP (NYC Dept. of City Planning) GIS database.
 Aerial Source:
 2020 New York State ITS GIS Orthoimagery.

LEGEND

-  BCP SITE BOUNDARY
-  LOT BOUNDARY AND TAX LOT NUMBER
- 3043** BLOCK NUMBER
-  PHASE II SOIL BORING LOCATION/TEMPORARY WELL/SOIL VAPOR LOCATION (JULY 2019)
-  PHASE II SOIL BORING LOCATION/TEMPORARY WELL LOCATION (JULY 2019)
-  RI MONITORING WELL/RI SOIL BORING LOCATION (FEBRUARY/SEPTEMBER/NOVEMBER 2023)
-  PROPOSED INJECTION POINT 12-FOOT RADIUS OF INFLUENCE
-  PROPOSED POST REMEDIAL MONITORING WELL LOCATION
-  APPROXIMATE EXTENT OF GROUNDWATER TREATMENT AREA
-  GROUNDWATER FLOW DIRECTION



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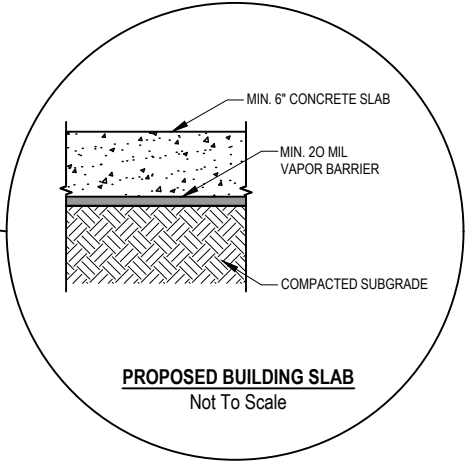
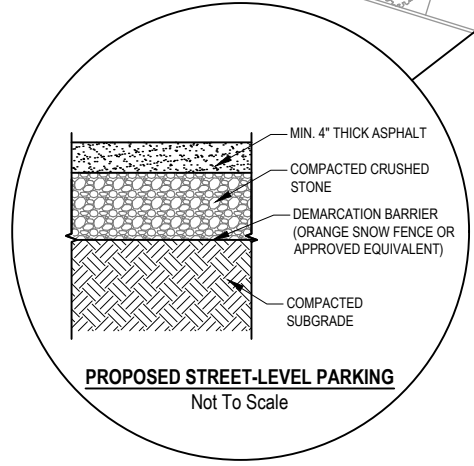
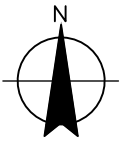
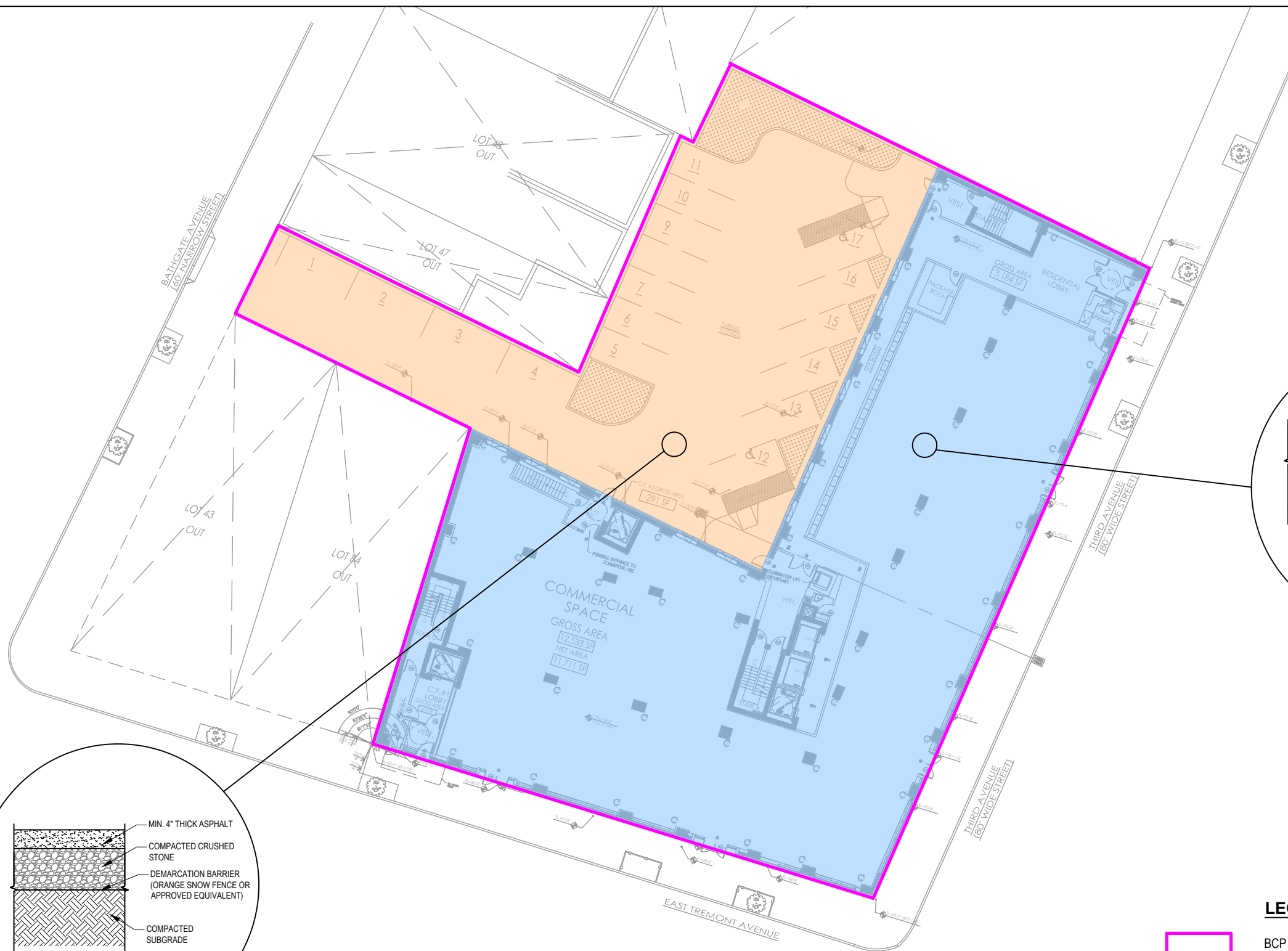
PROPOSED GROUNDWATER TREATMENT AREA

DATE
2/14/2024

BCP ID NO.
C203161

FIGURE
3

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- LEGEND**
- BCP SITE BOUNDARY
 - PROPOSED BUILDING SLAB
 - PROPOSED STREET-LEVEL PARKING



Map Source:
SLCE Architects, LLP "1ST FLOOR OVERALL PLAN", Drawing No. A-102.00, 09/08/2023.

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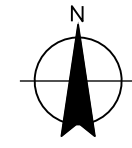
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PROPOSED SITE COVER SYSTEM

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1/5/2024

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FIGURE
4



440 Park Avenue South, New York, NY 10016

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Map Source:
SLCE Architects, LLP "FOUNDATION FRAMING PLAN", Drawing No. FO-100.00, 09/29/2023.



SLAB-ON-GRADE PORTION OF PROPOSED BUILDING

CELLAR LEVEL OF PROPOSED BUILDING

LEGEND

-  EXTENT OF VAPOR BARRIER UNDER SLAB
-  PIPE SLEEVE THROUGH GRADE BEAM
-  4" Ø SLOTTED SCHEDULE 40 PVC PIPE
-  VACUUM MONITORING POINT
-  MANIFOLD AND RISER LOCATIONS



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CONCEPTUAL SSDS PLAN

DATE	2/14/2024
BCP ID NO.	C203161
FIGURE	5