

DECISION DOCUMENT

57 Alexander Street
Brownfield Cleanup Program
Yonkers, Westchester County
Site No. C360194
December 2020



**Department of
Environmental
Conservation**

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

DECLARATION STATEMENT - DECISION DOCUMENT

57 Alexander Street
Brownfield Cleanup Program
Yonkers, Westchester County
Site No. C360194
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Statement of Purpose and Basis

This document presents the remedy for the 57 Alexander 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 57 Alexander 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 principals and techniques will be implemented to the extent feasible in the site management of the remedy as per DER-31. The remedial design program will include:

- A pre-design investigation to complete delineation of source areas;
- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gas 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);
- soil exceeding the 6 NYCRR Part 371 hazardous criteria for lead;
- soil with visual waste material or non-aqueous phase liquid;
- soil containing PCB concentrations exceeding 10 part per million (ppm);
- soil containing trichloroethene (TCE) concentrations exceeding the restricted residential soil cleanup objectives (RRSCOs) of 21 ppm;
- soil containing total SVOCs exceeding 500 ppm;
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

All soils in the upper two feet which exceed the RRSCOs will be excavated and transported off-site for disposal. Approximately 10,000 cubic yards of contaminated soil will be removed from the site; however, this volume may increase based on the pre-design investigation noted above.

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

3. Backfill

On-site soil which does not exceed the above excavation criteria or the protection of groundwater SCOs for any constituent may be used anywhere beneath the cover system, including below the water table, to backfill the excavation or re-grade the site.

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete backfilling the excavation and establish the designed grades at the site. The site will be re-graded to accommodate installation of a cover system as described in remedy element 4.

4. Site Cover

A site cover will be required to allow for restricted residential use of the site in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is to be used it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material 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, building slabs, and crushed stone.

5. Institutional Control Institutional Control

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

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH (Chapter 873, Article VII of the Laws of Westchester County); and
- require compliance with the Department approved Site Management Plan.

6. Site Management Plan:

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

i. 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 soil cover discussed in Paragraph 4.

This SMP includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavation in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any buildings on the site that will include soil vapor intrusion sampling with provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- 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 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 Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

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

- a schedule of monitoring and frequency of submittals to the Department; and
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

iii. An Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, inspection, and reporting of any mechanical or physical components of the active vapor mitigation system(s). The plan includes, but is not limited to:

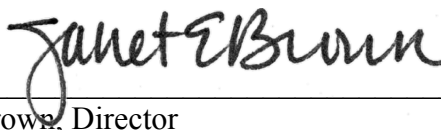
- procedures for operating and maintaining the system(s);
- compliance inspection of the system(s) to ensure proper O&M as well as providing the data for any necessary reporting;
- maintaining site access controls and Department notification; and
- providing the Department access to the site and O&M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

12/16/2020

Date



Janet Brown, Director
Remedial Bureau C

DECISION DOCUMENT

57 Alexander Street
Yonkers, Westchester County
Site No. C360194
December 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=C360194>

Yonkers Public Library - Riverfront Branch
1 Larkin Center
Yonkers, NY 10701
Phone: (914) 337-1500, extension 486

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 57 Alexander Street Site (site) is a roughly square-shaped 3.67-acre area, located adjacent to the Hudson River in an urban area of the City of Yonkers, Westchester County, New York. The site is bordered by a residential building and parking to the north, a community center to the south, Alexander Street to the east, and the Hudson River to the west.

Site Features:

All site buildings were recently demolished, and the site is currently vacant. Portions of the site outside of building footprints mostly consist of asphalt-paved parking with limited landscaped areas. A bulkhead extends along the western boundary of the site. Three wooden piers extend from the bulkhead off-site into the Hudson River. The site can be accessed via three asphalt-paved driveways which enter the site from Alexander Street. The site has an elevation of 2 to 12 feet above mean sea level and slopes westward towards the Hudson River.

Current Zoning and Land Use:

The site is comprised of four contiguous tax parcels that are zoned for industrial use. In May 2009, the City of Yonkers adopted the Alexander Street Master Plan and Urban Renewal Plan for the entire Alexander Street corridor. These plans permit residential development with a Planned Urban Redevelopment (PUR) Special Use Permit. The intended end use for this site is for multi-family rental apartments with outdoor esplanades. Surrounding properties have residential, commercial and industrial uses.

Past Use of the Site:

Starting in 1898, the site was utilized for the boating industry. A bulkhead was built in 1917. This original bulkhead makes up portions of the existing bulkhead. Since 1942, the site has been used for industrial purposes including manufacturing, automotive repair, a machine shop, boat storage, and most recently, stage lighting manufacturing. Underground storage tanks (USTs) were historically present in the central and northeastern portions of the site. There is one 550-gallon UST that was closed in place that remains in the northeastern portion of the site. Industrial use of the site ceased in 2020 and the site buildings have been demolished.

Site Geology and Hydrogeology:

Site soils consist of fill material to a depth of 11-25 feet below ground surface (bgs). Fill material includes varying amounts of sand, gravel and cinders. Beneath fill, riverbed sediments consisting of sand, gravel, and clay are present. The depth to groundwater beneath the site varies from approximately 5 to 11 feet bgs. Groundwater flow is generally to the west, toward the Hudson River, but it is tidally influenced.

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:

trichloroethene (TCE)	mercury
naphthalene	cadmium
benzo(b)fluoranthene	polychlorinated biphenyls (PCB)
benzo(a)pyrene	methyl-tert-butyl ether (MTBE)
benzo(a)anthracene	perfluorooctanoic acid
chrysene	thallium
benzo(k)fluoranthene	1,4-dioxane
indeno(1,2,3-CD)pyrene	1,1,1-trichloroethane
copper	cis-1,2-dichloroethene
lead	methylene chloride
barium	tetrachloroethene (PCE)
arsenic	dibenz[a,h]anthracene
phenol	

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

- groundwater
- soil

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

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

6.3: Summary of Environmental Assessment

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

Nature and extent of contamination:

Soil and groundwater samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), pesticides, metals, and the emerging contaminants per- and polyfluorinated substances (PFAS) and 1,4-dioxane. Soil vapor samples were analyzed for VOCs. Based on investigations conducted to date, the primary contaminants of concern include VOCs, SVOCs, PCBs and metals in soil, SVOCs and metals in groundwater, and VOCs in soil vapor.

Soil:

Surface (0-2 inches) and subsurface soil (deeper than 2 inches) soil samples were collected throughout the site during the RI to document soil conditions in all areas of the site. Two surface soil samples were collected from the northwestern portion of the site to assess direct human exposure. There were no exceedances of restricted residential soil cleanup objectives (RRSCOs) for either surface soil sample. All other portions of the site are currently covered by pavement or buildings.

Subsurface samples were collected from 34 locations to depths of up to 20 feet below ground surface (bgs). Several constituents were detected in soil at concentrations exceeding their respective RRSCOs and Unrestricted SCOs (USCOs) including the VOC trichloroethene; the SVOCs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, naphthalene, and phenol; the metals arsenic, barium, cadmium, copper, lead, mercury; and PCBs. Pesticides were detected in soil at concentrations above USCOs but below RRSCOs.

The highest concentration detected of a VOC in soil was TCE at 23 parts per million (ppm) (RRSCO: 21 ppm) encountered at a depth of 10 feet bgs in the northeast portion of the site. The highest concentration detected of an SVOC was naphthalene at 520 ppm (RRSCO: 100 ppm) encountered at a depth of 10 feet bgs in the northeastern portion of the site. Additionally the SVOCs benzo(b)fluoranthene at 62 ppm (RRSCO: 1 ppm), benzo(a)pyrene at 52 ppm (RRSCO: 1 ppm), benzo(a)anthracene at 49 ppm (RRSCO: 1 ppm), chrysene at 44 ppm (RRSCO 3.9 ppm), benzo(k)fluoranthene at 20 ppm (RRSCO: 3.9 ppm), and indeno(1,2,3-cd)pyrene at 24 ppm (RRSCO: 0.5 ppm) were all encountered at a depth of 6 feet bgs at in a soil sample collected from the south-central portion of the site.

The highest concentrations for metals encountered were copper at 11,700 ppm (RRSCO: 270 ppm), lead at 2,080 ppm (RRSCO: 400 ppm), barium at 485 ppm (RRSCO: 400 ppm), arsenic at 124 ppm (RRSCO: 16 ppm), mercury at 50.7 ppm (RRSCO: 0.81 ppm), and cadmium at 13 ppm (RRSCO: 4.3 ppm). Exceedances of RRSCOs for metals extended from 0 to 20 feet bgs and were generally present at locations throughout the site. PCB concentrations in soils exceeded the RRSCO of 1 ppm in several samples located in the southcentral portion of the site to depths of 2 feet. The highest concentration of PCBs detected in soil was 80.3 ppm. PFAS was detected in surface and subsurface soil samples. The highest concentration of a PFAS encountered in soil was perfluorooctanesulfonic acid (PFOS) at 2.8 parts per billion (ppb) encountered in a surface sample (0-2 inches bgs) located in the northwestern portion of the site. Both surface soil samples had PFOS detections as follows: Sample OS-1 (SB-32) at 1.38 parts per billion (ppb) and OS-2 (SB-33) at 2.8 ppb compared to the protection of groundwater soil cleanup objective guidance value of 1.1 ppb. Subsurface PFOA and PFOS were detected at lower levels than the surface soil samples or not detected.

Source areas throughout the site had occurrences of odors, staining, and photoionization detector (PID) readings greater than 50 ppm. SVOC source areas had analytical results greater than 500 ppm. PCB source areas are delineated in the south-central portion of the site extending along the southern site border and in the northeastern portion of the site. SVOC source areas are delineated in the south-central and central portions, and along northeastern border of the site. VOC source areas are delineated in the south-central and northeastern portions of the site. Lead source areas are delineated along the northern border of the site, and the south-central and southwestern portions of the site. There are also USTs in the northeastern and southeastern portions of the site that will be excavated as source areas.

The presence of VOCs, SVOCs, PCBs, and metals on site is related to the historical use of the site for industrial purposes and/or was present in fill material added to the site in the past. There is no indication soil contamination is migrating off-site.

Groundwater:

Groundwater samples were collected from six monitoring wells installed throughout the site as part of the RI. Groundwater samples were analyzed for VOCs, SVOCs, PCBs, pesticides, metals, and cyanide as well as the emerging contaminants PFAS and 1,4-dioxane.

No pesticides were detected in any groundwater samples. PCBs were detected in one well but did not exceed groundwater standards.

The VOC methyl tert-butyl ether (MTBE) was detected in one well at 22 parts per billion (ppb) exceeding the groundwater standard of 1 ppb. MTBE was not detected in soil samples collected during the RI, and its presence in groundwater may be from an off-site site source. No other VOCs were present in groundwater. The SVOCs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene were each detected in multiple wells above groundwater standards. The highest concentration of an SVOC in groundwater was benzo(b)fluoranthene at 0.15 ppb (standard: 0.002 ppb).

The metals antimony, iron, magnesium, manganese, sodium and thallium were detected in groundwater samples collected from the site in exceedance of groundwater standards. The metals iron, manganese and sodium are naturally occurring, are present in groundwater across the site, and are likely not associated with contamination from the site. Thallium marginally exceeded the groundwater standard of 0.5 ppb at one well (GW-14) with a total concentration of 1.65 ppb. The thallium is possibly associated with the historic site operations, which included coal burning.

1,4-dioxane was detected in five of the six wells. The greatest concentration of 1,4-dioxane was detected in GW-13 (13.9 ppb vs. the standard of 1 ppb). Perfluorooctanoic acid (PFOA) and PFOS were detected in groundwater at concentrations of up to 18.7 and 9.65 parts per trillion (ppt), respectively, with only PFOA exceeding the 10 ppt screening level for groundwater. PFOA above the screening level of 10 ppt was present in five of the six wells.

There is a possibility that low levels of groundwater contamination may be migrating off-site towards the Hudson River.

Soil Vapor:

Soil vapor samples were collected at fourteen locations throughout the site. Soil vapor samples were collected at a depth of 1- 4 feet bgs. Soil vapor samples were analyzed for VOCs. The VOCs methylene chloride, tetrachloroethene (PCE), trichloroethene (TCE), 1,1,1-trichloroethane, and cis-1,2-dichloroethene were detected at elevated levels in soil vapor samples. Methylene chloride was detected in two soil vapor samples with a maximum concentration of 6.53 micrograms per cubic meter (ug/m^3), PCE was detected in eleven soil vapor samples with a maximum concentration of 39.9 ug/m^3 , TCE was detected in three soil vapor samples with a maximum concentration of 39.6 ug/m^3 , 1,1,1-trichloroethane was detected in two soil vapor samples with a maximum concentration of 24.6 ug/m^3 , and cis-1,2-dichloroethene was detected in one soil vapor samples with a maximum concentration of 3.77 ug/m^3 . The results of on-site soil vapor sampling indicate that further evaluation of soil vapor intrusion for any future buildings on the site is warranted. Soil vapor contamination can be attributed to the historic use of chlorinated solvents on site. There is a potential that contaminated soil vapor may migrate from 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*.

People may contact contaminants in soil if 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. Volatile organic compounds in the soil may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Because the site is currently unoccupied, inhalation of site contaminants in indoor air due to soil vapor intrusion does not represent a current concern. However, the potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site development. Soil vapor intrusion is not expected to be a concern for off-site buildings. While the site borders the Hudson River, remaining land portions are bordered by remedial investigation sites which adequately address any off-site soil vapor intrusion concerns by requiring soil vapor intrusion evaluations and/or actions to mitigate exposures.

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 excavation, site cover and site management remedy.

The elements of the selected remedy, as shown in Figures 2A and 2B, are as follows:

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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 principals and techniques will be implemented to the extent feasible in the site management of the remedy as per DER-31. The remedial design program will include:

- A pre-design investigation to complete delineation of source areas;
- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gas and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
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- 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);
- soil exceeding the 6 NYCRR Part 371 hazardous criteria for lead;
- soil with visual waste material or non-aqueous phase liquid;
- soil containing PCB concentrations exceeding 10 part per million (ppm);
- soil containing trichloroethene (TCE) concentrations exceeding the restricted residential soil cleanup objectives (RRSCOs) of 21 ppm;
- soil containing total SVOCs exceeding 500 ppm;
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

All soils in the upper two feet which exceed the RRSCOs will be excavated and transported off-site for disposal. Approximately 10,000 cubic yards of contaminated soil will be removed from the site; however, this volume may increase based on the pre-design investigation noted above.

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

3. Backfill

On-site soil which does not exceed the above excavation criteria or the protection of groundwater SCOs for any constituent may be used anywhere beneath the cover system, including below the water table, to backfill the excavation or re-grade the site.

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete backfilling the excavation and establish the designed grades at the site. The site will be re-graded to accommodate installation of a cover system as described in remedy element 4.

4. Site Cover

A site cover will be required to allow for restricted residential use of the site in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is to be used it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material 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, building slabs, and crushed stone.

5. Institutional Control Institutional Control

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

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH (Chapter 873, Article VII of the Laws of Westchester County); and
- require compliance with the Department approved Site Management Plan.

6. Site Management Plan:

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

i. 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 soil cover discussed in Paragraph 4.

This SMP includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavation in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any buildings on the site that will include soil vapor intrusion sampling with provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- 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 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 Department notification; and

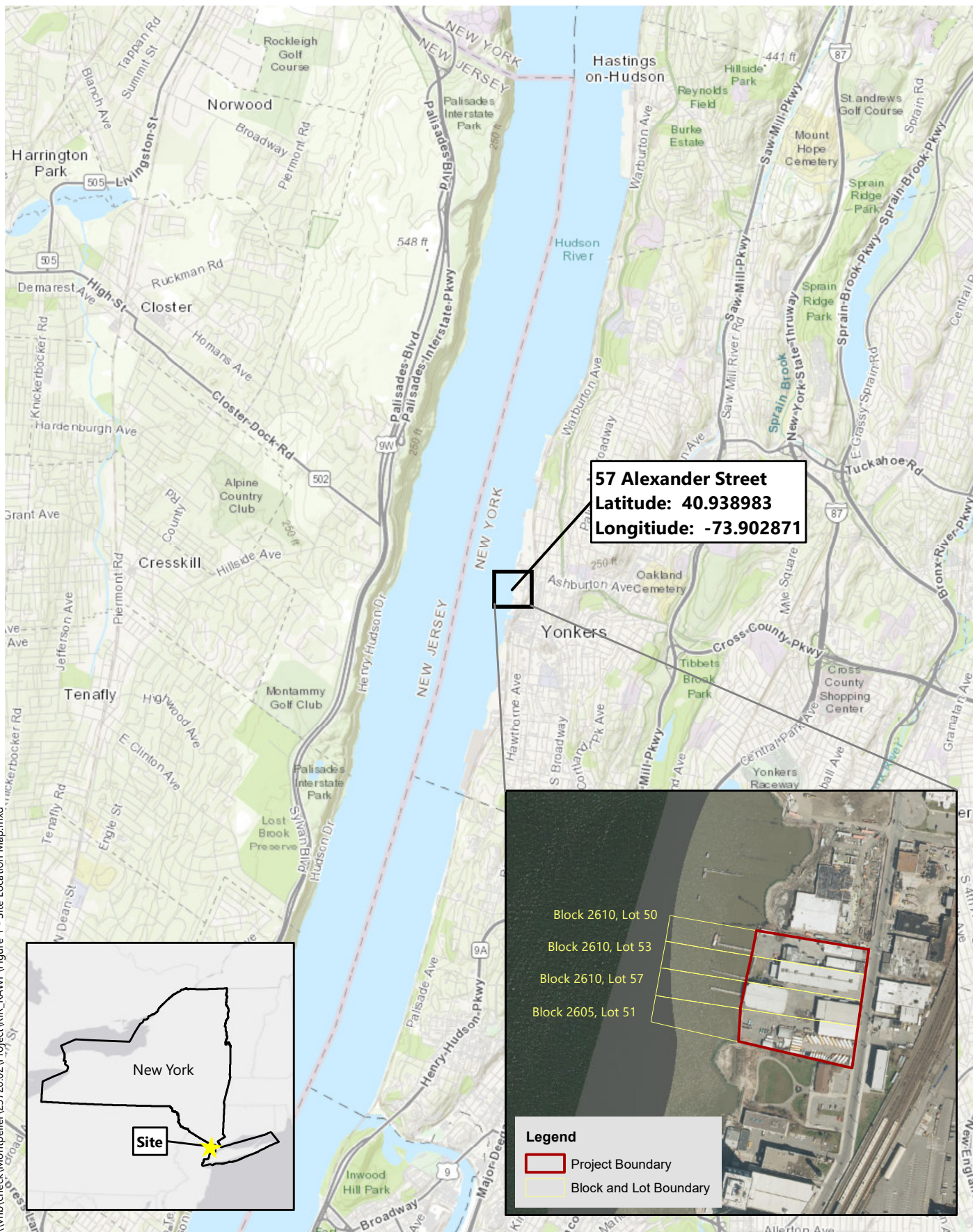
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

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

- a schedule of monitoring and frequency of submittals to the Department; and
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

iii. An Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, 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);
- compliance inspection of the system(s) to ensure proper O&M as well as providing the data for any necessary reporting;
- maintaining site access controls and Department notification; and
- providing the Department access to the site and O&M records.



\\vhb\check\Montpelier\25720\02\Project\IR_RA\WP\Figure 1 - Site Location Map.mxd



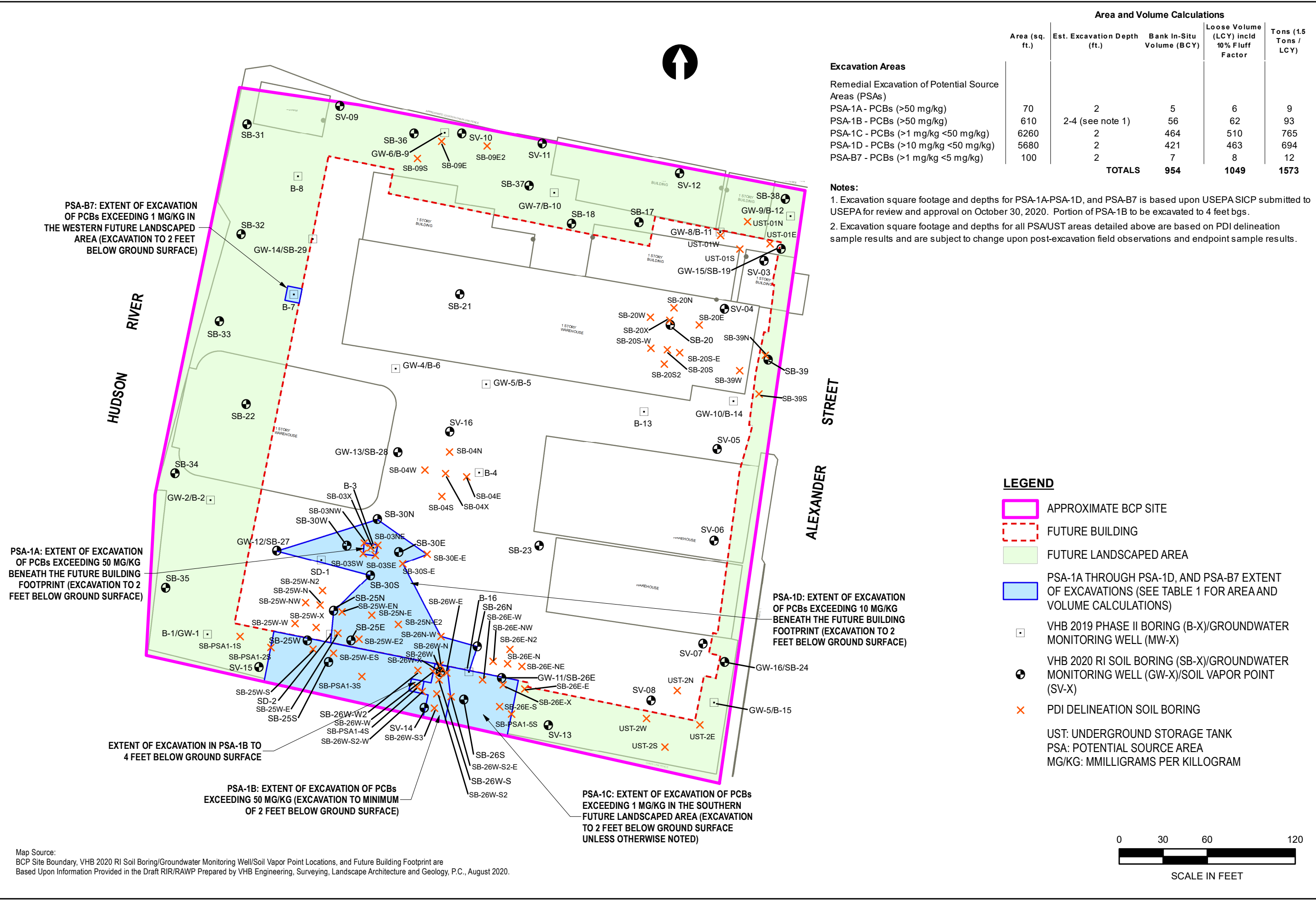
57 Alexander Street
Remedial Investigation Report/Remedial Action Work Plan

Yonkers, New York

Site Location Map

Sources:
 ESRI World Topographic Base Map (2020)
 ESRI/Digital Globe Imagery Base Map (2019)

© 2020 AKRF. C:\Projects\200170 - 57 ALEXANDER STREET\Technical\GIS and Graphics\Hazmat\200170 Fig 5A PSA Extent of Excavations.mxd 11/16/2020 12:45:49 PM mvelieux



PSA-B7: EXTENT OF EXCAVATION OF PCBs EXCEEDING 1 MG/KG IN THE WESTERN FUTURE LANDSCAPED AREA (EXCAVATION TO 2 FEET BELOW GROUND SURFACE)

PSA-1A: EXTENT OF EXCAVATION OF PCBs EXCEEDING 50 MG/KG BENEATH THE FUTURE BUILDING FOOTPRINT (EXCAVATION TO 2 FEET BELOW GROUND SURFACE)

EXTENT OF EXCAVATION IN PSA-1B TO 4 FEET BELOW GROUND SURFACE

PSA-1B: EXTENT OF EXCAVATION OF PCBs EXCEEDING 50 MG/KG (EXCAVATION TO MINIMUM OF 2 FEET BELOW GROUND SURFACE)

PSA-1C: EXTENT OF EXCAVATION OF PCBs EXCEEDING 1 MG/KG IN THE SOUTHERN FUTURE LANDSCAPED AREA (EXCAVATION TO 2 FEET BELOW GROUND SURFACE UNLESS OTHERWISE NOTED)

PSA-1D: EXTENT OF EXCAVATION OF PCBs EXCEEDING 10 MG/KG BENEATH THE FUTURE BUILDING FOOTPRINT (EXCAVATION TO 2 FEET BELOW GROUND SURFACE)

Area and Volume Calculations

Area (sq. ft.)	Est. Excavation Depth (ft.)	Bank In-Situ Volume (BCY)	Loose Volume (LCY) incl 10% Fluff Factor	Tons (1.5 Tons / LCY)
Excavation Areas				
Remedial Excavation of Potential Source Areas (PSAs)				
PSA-1A - PCBs (>50 mg/kg)	70	2	5	6
PSA-1B - PCBs (>50 mg/kg)	610	2-4 (see note 1)	56	62
PSA-1C - PCBs (>1 mg/kg <50 mg/kg)	6260	2	464	510
PSA-1D - PCBs (>10 mg/kg <50 mg/kg)	5680	2	421	463
PSA-B7 - PCBs (>1 mg/kg <5 mg/kg)	100	2	7	8
TOTALS		954	1049	1573

Notes:

1. Excavation square footage and depths for PSA-1A-PSA-1D, and PSA-B7 is based upon USEPA SICP submitted to USEPA for review and approval on October 30, 2020. Portion of PSA-1B to be excavated to 4 feet bgs.
2. Excavation square footage and depths for all PSA/UST areas detailed above are based on PDI delineation sample results and are subject to change upon post-excavation field observations and endpoint sample results.

LEGEND

- APPROXIMATE BCP SITE
 - FUTURE BUILDING
 - FUTURE LANDSCAPED AREA
 - PSA-1A THROUGH PSA-1D, AND PSA-B7 EXTENT OF EXCAVATIONS (SEE TABLE 1 FOR AREA AND VOLUME CALCULATIONS)
 - VHB 2019 PHASE II BORING (B-X)/GROUNDWATER MONITORING WELL (MW-X)
 - VHB 2020 RI SOIL BORING (SB-X)/GROUNDWATER MONITORING WELL (GW-X)/SOIL VAPOR POINT (SV-X)
 - X PDI DELINEATION SOIL BORING
- UST: UNDERGROUND STORAGE TANK
 PSA: POTENTIAL SOURCE AREA
 MG/KG: MILLIGRAMS PER KILOGRAM

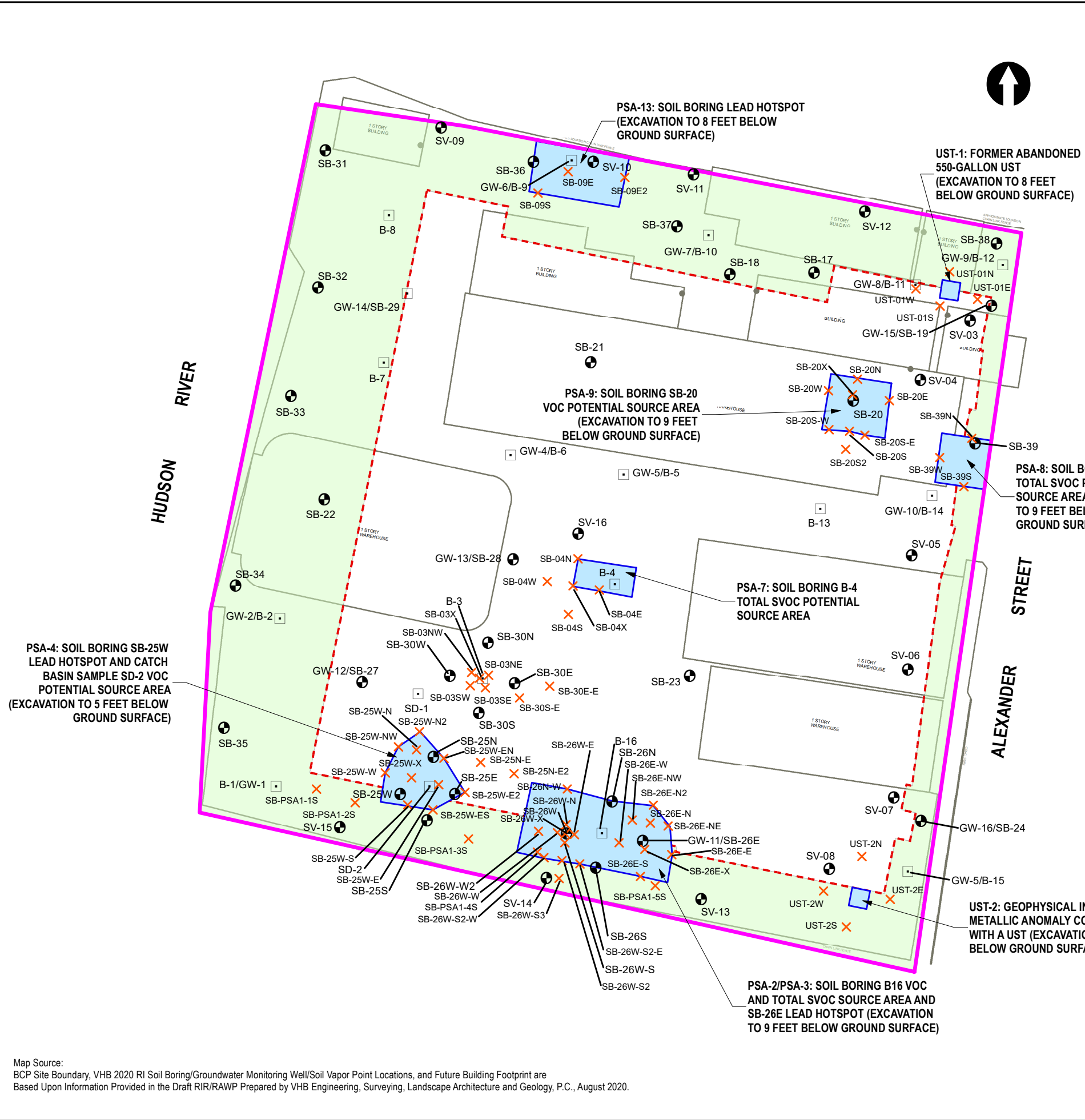
0 30 60 120



SCALE IN FEET

Map Source:
 BCP Site Boundary, VHB 2020 RI Soil Boring/Groundwater Monitoring Well/Soil Vapor Point Locations, and Future Building Footprint are Based Upon Information Provided in the Draft RIR/RAWP Prepared by VHB Engineering, Surveying, Landscape Architecture and Geology, P.C., August 2020.

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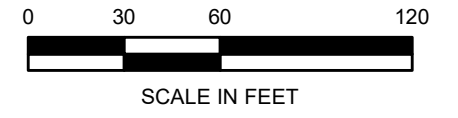
Area and Volume Calculations

Excavation Areas	Area (sq. ft.)	Est. Excavation Depth (ft.)	Bank In-Situ Volume (BCY)	Loose Volume (LCY) incl 10% Fluff Factor	Tons (1.5 Tons / LCY)
Remedial Excavation of Potential Source Areas (PSAs)					
PSA-2/PSA-3 - VOCs & SVOCs / Lead	3110	9 (see note 1)	864	950	1425
PSA-4 - Lead	1220	5 (see note 2)	190	209	313
PSA-7 - SVOCs	510	8	151	166	249
PSA-8 - SVOCs	730	8	216	238	357
PSA-9 - VOCs (TCE)	1030	10	381	420	629
PSA-13 - Lead	1400	8	415	456	684
UST-1 - Closed In-Place UST	100	8	30	33	49
UST-2 - Suspected UST	100	8	30	33	49
TOTALS			2277	2504	3756

- Excavation volume for PSA-2/PSA-3 is estimated at approximately 9 feet bgs, however, the 0-2 foot portion of approximately 75% of the PSA-2/PSA-3 footprint is anticipated to be removed as part of the PSA-1B through PSA-1C source areas. Therefore 75% of the excavation volume from 0 to 2 feet is not included in the PSA-2/PSA-3 volume calculation.
- Excavation volume for PSA-4 is estimated at approximately 5 feet bgs, however, the 0-2 foot portion of approximately 40% of the PSA-4 footprint is anticipated to be removed as part of the PSA-1C and PSA-1D source areas. Therefore 40% of the excavation volume from 0 to 2 feet is not included in the PSA-4 volume calculation.
- Excavation square footage and depths for all PSA/UST areas detailed above are based on PDI delineation sample results and are subject to change upon post-excavation field observations and endpoint sample results.
- Excavation depths for PSA-7, PSA-8, PSA-9, and PSA-13 assume excavation will be necessary to the groundwater table [estimated at 8 feet below ground surface (bgs) at PSA-7, PSA-8, and PSA-13, and 10 feet bgs at PSA-9].

LEGEND

- APPROXIMATE BCP SITE BOUNDARY
- FUTURE BUILDING FOOTPRINT
- FUTURE LANDSCAPED AREA
- PSA-2/PSA-3, PSA-4, PSA-7, PSA-8, PSA-9, PSA-13, UST-1, AND UST-2 EXTENT OF EXCAVATIONS
- VHB 2019 PHASE II BORING (B-X)/GROUNDWATER MONITORING WELL (MW-X)
- VHB 2020 RI SOIL BORING (SB-X)/GROUNDWATER MONITORING WELL (GW-X)/SOIL VAPOR POINT (SV-X)
- X PDI DELINEATION SOIL BORING LOCATION
- UST: UNDERGROUND STORAGE TANK
- PSA: POTENTIAL SOURCE AREA
- MG/KG: MILLIGRAMS PER KILOGRAM



Map Source:
BCP Site Boundary, VHB 2020 RI Soil Boring/Groundwater Monitoring Well/Soil Vapor Point Locations, and Future Building Footprint are Based Upon Information Provided in the Draft RIR/RAWP Prepared by VHB Engineering, Surveying, Landscape Architecture and Geology, P.C., August 2020.

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 Yonkers, New York

PSA-2, PSA-3, PSA-4, PSA-7, PSA-8, PSA-9, PSA-13, UST-1, AND UST-2 EXTENT OF EXCAVATIONS

DATE	11/25/2020
PROJECT NO.	200170
FIGURE	5B