DECISION DOCUMENT

Former Nessen Lamps Site (aka PS 51X)
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203061
June 2013

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

DECLARATION STATEMENT - DECISION DOCUMENT

Former Nessen Lamps Site (aka PS 51X)
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Statement of Purpose and Basis

This document presents the remedy for the Former Nessen Lamps Site (aka PS 51X) 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 Former Nessen Lamps Site (aka PS 51X) site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design

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

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation

Excavation and off-site disposal of contaminant source area soil containing contaminants of

concern that exceed the Soil Cleanup Objectives (SCOs) for Restricted Use – Protection of Groundwater, as defined by 6 NYCRR Part 375-6.8(b). Contaminants of concern include: trichloroethylene (TCE) and its degradation products, as well as benzene, toluene, ethylbenzene, xylenes (BTEX), and isopropylbenzene.

The contaminant source removal described above is limited to a 1,500 square foot area in the central portion of the Site beneath the building, between 5 and 11 feet below surface grade. Approximately 350 cubic yards of contaminated soil from this area will be excavated and properly disposed off-site.

On-site soil which does not exceed the SCOs described above may be used to backfill the excavation below the cover system described in remedy element 3.

Clean fill meeting the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and establish the designed grades at the site.

3. Cover System

A site cover, consisting of the concrete slab for the building, currently exists and will be maintained to allow for restricted residential use of the site. In the area that will be excavated as described in remedy element 2, the site cover will be replaced in-kind after the area is filled with clean backfill. The cover may consist either of structures such as buildings, pavement, and sidewalks comprising the site development; or a soil cover in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is required it will be a minimum of two fee of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

4. Groundwater Treatment

In-situ chemical oxidation or enhanced bioremediation via reductive dechlorination will be implemented to treat contaminants in groundwater. A chemical oxidant or reducing agent (to enhance biological degradation) will be injected into the subsurface in an approximately 3,000-square foot area located in the central portion of the site, where chlorinated solvents are present at the highest concentrations in groundwater. Injection will be performed via injection wells screened from approximately 17 feet to 24 feet below first floor grade. The precise method, dosage, and location and depth of injection wells will be determined during the remedial design. It is estimated that the chemical oxidant or reducing agent will be injected during 2 separate events over several months.

5. Vapor Mitigation

The existing building will be required to have a sub-slab depressurization system, or a similar engineered system, to prevent the migration of vapors into the building from any residual contaminated soil or groundwater.

6. Institutional Control

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

- requires 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);
- allows the use and development of the controlled property for restricted residential, commercial and industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restricts 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; and
- requires compliance with the Department approved Site Management Plan.

7. 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 above.
Engineering Controls: The composite cover system, groundwater treatment system, and vapor mitigation system described in remedy elements 3, 4, and 5, above.

This plan includes, but may not be limited to:

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

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

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

c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance,

monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:

- compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
- maintaining site access controls and Department notification; and
- providing the Department access to the site and O&M records.

The operation of the components of the remedy will continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.

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.

June 6, 2013

Date

Robert J. Cozzy, Director
Remedial Bureau B

DECISION DOCUMENT

Former Nessen Lamps Site (aka PS 51X)
Bronx, Bronx County
Site No. C203061
June 2013

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 repositories:

New York Public Library, Bronx Library Center
Attn: Sharon Jarvis
310 East Kingsbridge Road
(at Briggs Avenue)
Bronx, NY 10458
Phone: 718-579-4244

Bronx Community Board 7
229-A East 204th Street
Bronx, NY 10458

Phone: 718-993-5650

Receive Site Citizen Participation Information By Email

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

SECTION 3: SITE DESCRIPTION AND HISTORY

Location:
The Former Nessen Lamps Site is located at 3200 Jerome Avenue in the Bronx. It is located at the northeast corner of Jerome Avenue and Van Cortlandt Avenue East. The site is identified as Block 3323, Lot 36 on the Bronx County Tax Map. The Site is surrounded by a garage and other commercial uses to the north/northeast; residential buildings to the east along Van Cortlandt Ave.; commercial and residential buildings to the south across Van Cortlandt Ave.; and a New York City Department of Environmental Protection (NYCDEP) facility and NYC Transit Authority train yard to the west.

Site Features:
The site consists of a triangular-shaped, approximately 11,500-square foot property that is fully occupied by an approximately 18,200 sf, 2-story building. The building is currently vacant.

Current Zoning:
The site is currently zoned C8-2 (commercial district). Most recently, the building was occupied by PS 51X (The Bronx New School), an elementary school serving Kindergarten through 5th grade. The building was leased by the New York City School Construction Authority and used for the school from 1993 to 2011.

Past Use of the Site:
The Site was historically used as a garage (approximately 1928 to 1956); a drug company (1956 to 1965); Nessen Lamps, Inc. for lamp manufacturing (1971 through 1988); and most recently the Bronx New School (PS51) from 1993 through June 2011. It has since been vacant. Four 550-gallon buried gasoline tanks were noted at the site between 1945 and 1992 prior to its use as a school. Nessen Lamps, Inc. is known to have generated hazardous waste (trichloroethene) at the site between 1982 and 1987, based on hazardous waste documentation available from that time period.

Site Geology and Hydrogeology:
Overburden soil beneath the Site is characterized by fill material, consisting of sand, with silt, gravel, brick, glass, coal, and ash present to depths of approximately 4 to 9 feet below surface

grade. The overburden beneath the fill material was documented as a generally brown glacial till consisting of fine to medium sand with varying amounts of silt, clay, gravel, cobbles, and weathered rock. The till material is underlain by bedrock that slopes downward in elevation from a high point in the southwestern portion of the Site at approximately 16 feet below sidewalk grade to a low point in the northeastern portion of the Site at approximately 32 feet below sidewalk grade. The topography of the Site slopes gently from the east to the west. The overburden groundwater aquifer is present at a depth of approximately 22 feet below the exterior sidewalk grade. Groundwater flow direction in the overburden groundwater aquifer is generally to the west and west-southwest.

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 that restrict 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 evaluated in addition to an alternative which would allow for unrestricted use of the site.

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

SECTION 5: ENFORCEMENT STATUS

The Applicant under the Brownfield Cleanup Agreement is a Volunteer. The Volunteer does not have an obligation to address off-site contamination. The Department has determined that this site poses a significant threat to human health and the environment but there are no off-site impacts that require remedial activities; accordingly, enforcement actions are not 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. 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)	XYLENE (MIXED)
BENZENE	DICHLOROETHYLENE
ETHYLBENZENE	VINYL CHLORIDE
TOLUENE	Isopropylbenzene

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

- groundwater
- soil
- soil vapor intrusion
- indoor air

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:
The contaminants of concern in soil, groundwater and/or soil vapor are trichloroethene (TCE) and associated breakdown products. TCE is a Volatile Organic Compound (VOC) known to have been used on-site by the previous operator, Nessen Lamps Inc. Petroleum-related VOCs have been detected in soil and groundwater and are also of concern.

Soil:
TCE has been detected in soil at concentrations exceeding the Unrestricted Use Soil Cleanup Objective (UUSCO) in 4 samples. In these samples concentrations of TCE range from 1.5 parts per million (ppm) to 43 ppm, compared to the UUSCO of 0.47 ppm. Petroleum-related contaminants were detected at concentrations exceeding the UUSCO in a few samples, including: total mixed xylenes detected at a maximum concentration of 91 ppm compared to the UUSCO of 0.26 ppm; ethylbenzene detected at 9.8 ppm compared to the UUSCO of 1 ppm; and toluene detected at 1.6 ppm compared to the UUSCO of 0.7 ppm. Contaminants are limited to a defined area in the central portion of the Site, and at depths of 6 to 7 feet below surface grade.

Groundwater:
TCE has been detected at concentrations exceeding Ambient Water Quality Standards (AWQS) in 6 of 8 groundwater monitoring wells (three of which are located in the sidewalk outside of the site boundaries). In on-site monitoring wells, TCE has been detected at concentrations ranging from 16 parts per billion (ppb) to 6,400 ppb, compared to the AWQS of 5 ppb. In the off-site groundwater monitoring wells, located in the sidewalk on the western border of the Site, TCE was detected at concentrations ranging from 19 ppb to 410 ppb. The lower concentrations were detected in bedrock groundwater wells; higher concentrations are in the overburden groundwater. Breakdown products of TCE were also detected in groundwater at concentrations exceeding AWQS, including: cis-1,2-dichloroethene and trans-1,2-dichloroethene detected at maximum concentrations of 66 ppb and 61 ppb, respectively, compared to the AWQS of 5 ppb; and vinyl chloride detected at a maximum concentration of 9.1 ppb compared to the AWQS of 2 ppb. Petroleum-related contaminants detected in groundwater at concentrations exceeding AWQS include: benzene detected at 600 ppb compared to the AWQS of 1 ppb; and toluene detected at

160 ppb, ethylbenzene at 540 ppb, and total xylenes at 1,900 ppb compared to the AWQS of 5 ppb for these 3 contaminants.

Soil Vapor and Indoor Air:
In the on-site building, TCE has been detected in sub-slab soil vapor as high as 53,000 micrograms per cubic meter (mcg/m3), and in indoor air samples as high as 607 mcg/m3. When concurrent sub-slab soil vapor and indoor air samples were collected from the on-site building in April 2011, TCE was detected in sub-slab soil vapor at a concentration of 31,000 mcg/m3 and in indoor air at 310 mcg/m3. Concentrations of TCE detected in indoor air exceed the NYSDOH guideline of 5 mcg/m3. Tetrachloroethylene (PCE) and cis-1,2-dichloroethane were detected in sub-slab soil vapor at low concentrations; and were not detected in indoor air. Off-site soil vapor intrustion sampling at the adjacent building indicated that TCE and PCE were present in sub-slab soil vapor and indoor air at low concentrations, at levels below those that would suggest the potential for soil vapor intrusion and no further action is required in the adjacent residential building.

Significant Threat:
The Site represents a significant threat to public health due to the occurrence of soil vapor intrusion in the on-site building, and the resulting potential for human exposure to TCE in indoor air.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure*.

Direct contact with contaminants in the soil is unlikely because the site is covered with buildings and pavement. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater or 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. Soil vapor intrusion sampling identified impacts in indoor air quality in the on-site building. Although the building is currently unoccupied, the potential exists for people to inhale site contaminants in indoor air due to soil vapor intrusion in any future on-site building development and/or occupancy. Sampling of the neighboring apartment building indicates soil vapor intrusion is not a concern.

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 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.

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 of source material, cover system and in-situ groundwater treatment remedy.

The elements of the selected remedy, as shown in Figures 2, 3, and 4 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.

2. Excavation

Excavation and off-site disposal of contaminant source area soil containing contaminants of concern that exceed the Soil Cleanup Objectives (SCOs) for Restricted Use – Protection of Groundwater, as defined by 6 NYCRR Part 375-6.8(b). Contaminants of concern include: trichloroethylene (TCE) and its degradation products, as well as benzene, toluene, ethylbenzene, xylenes (BTEX), and isopropylbenzene.

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Clean fill meeting the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and establish the designed grades at the site.

3. Cover System

A site cover, consisting of the concrete slab for the building, currently exists and will be maintained to allow for restricted residential use of the site. In the area that will be excavated as described in remedy element 2, the site cover will be replaced in-kind after the area is filled with clean backfill. The cover may consist either of structures such as buildings, pavement, and sidewalks comprising the site development; or a soil cover in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is required it will be a minimum of two fee of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

4. Groundwater Treatment

In-situ chemical oxidation or enhanced bioremediation via reductive dechlorination will be implemented to treat contaminants in groundwater. A chemical oxidant or reducing agent (to enhance biological degradation) will be injected into the subsurface in an approximately 3,000-square foot area located in the central portion of the site, where chlorinated solvents are present at the highest concentrations in groundwater. Injection will be performed via injection wells screened from approximately 17 feet to 24 feet below first floor grade. The precise method, dosage, and location and depth of injection wells will be determined during the remedial design. It is estimated that the chemical oxidant or reducing agent will be injected during 2 separate events over several months.

5. Vapor Mitigation

The existing building will be required to have a sub-slab depressurization system, or a similar engineered system, to prevent the migration of vapors into the building from any residual contaminated soil or groundwater.

6. Institutional Control

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

- requires 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);
- allows the use and development of the controlled property for restricted residential, commercial and industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restricts 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; and
- requires compliance with the Department approved Site Management Plan.

7. 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 above.
Engineering Controls: The composite cover system, groundwater treatment system, and vapor mitigation system described in remedy elements 3, 4, and 5, above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;

- a provision for evaluation of the potential for soil vapor intrusion for any new buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification;
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

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

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

c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:

- compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
- maintaining site access controls and Department notification; and
- providing the Department access to the site and O&M records.

The operation of the components of the remedy will continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.

Figure 1 – Site Location Map

Figure 2 – Proposed Remedy – Excavation Area

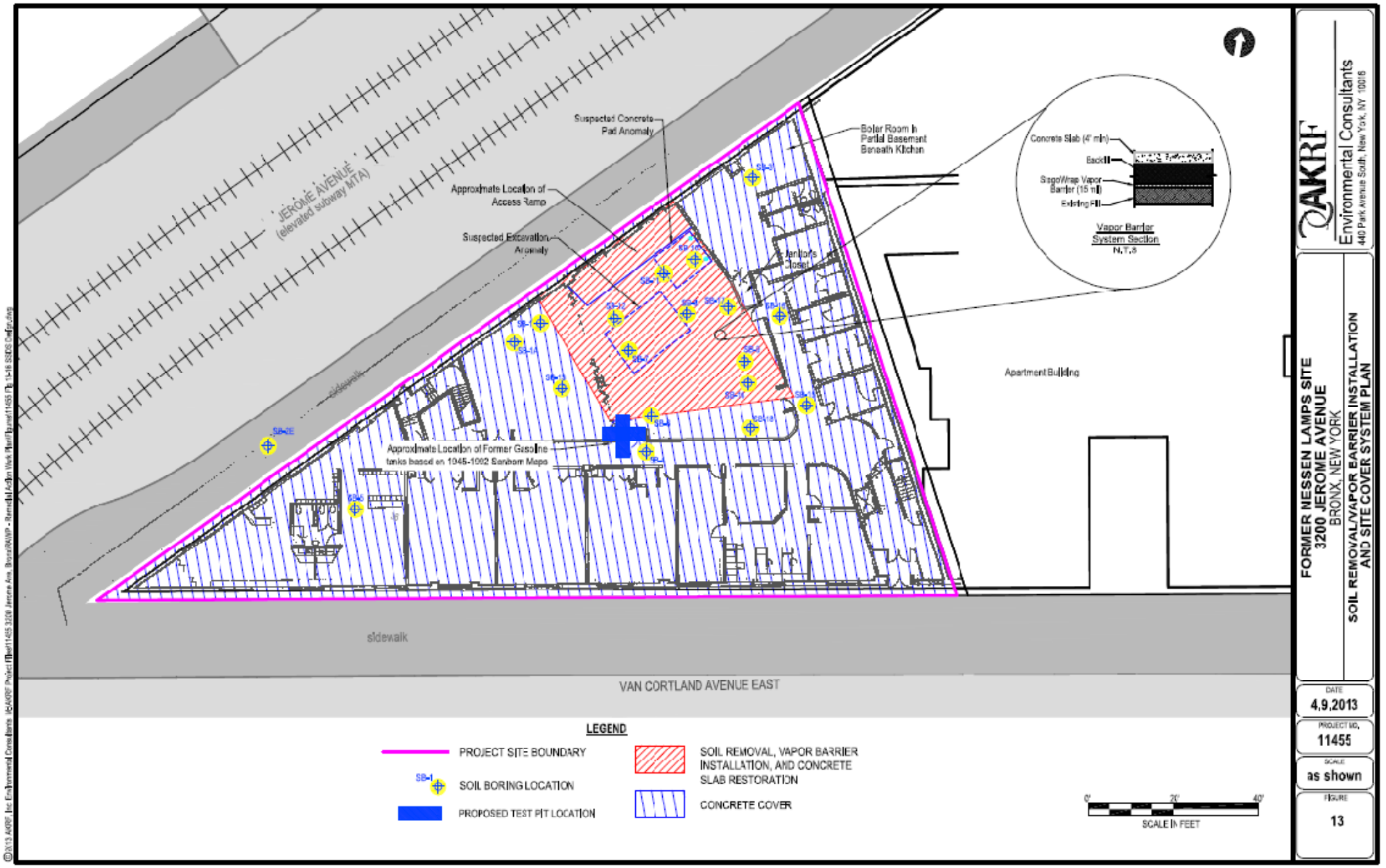

Figure 3 – Proposed Remedy – Groundwater Treatment Area

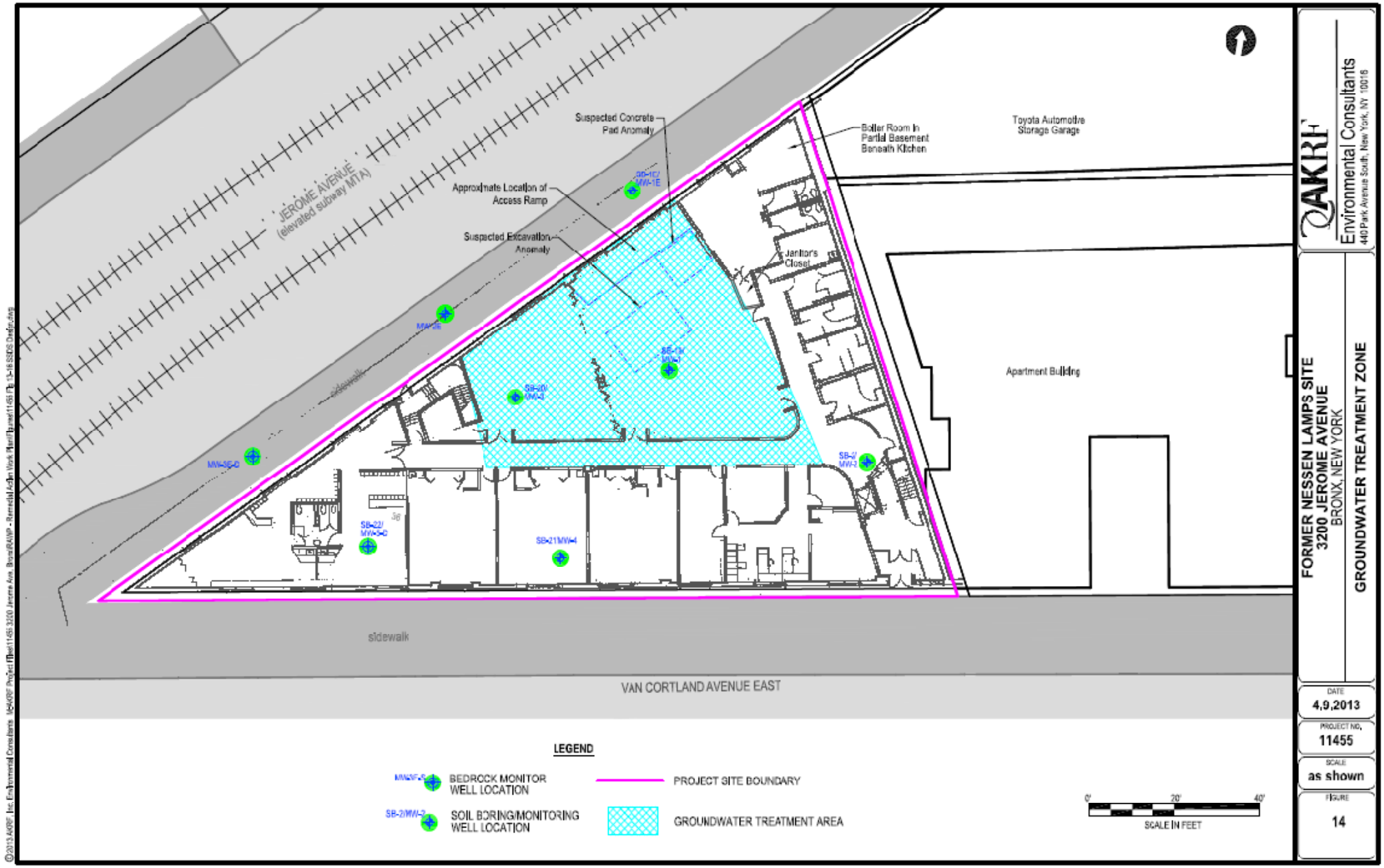

Figure 4 – Proposed Remedy – Vapor Mitigation System