

**220, 222, 228, 230, 232 EAST 125 STREET**  
**MANHATTAN, NEW YORK**

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## **Remedial Action Work Plan**

**NYC BCP Site Numbers:**

**11CBCP004M**

**and**

**11CBCP005M**

**Prepared for:**

Church of Scientology Religious Trust

6331 Hollywood Boulevard

Suite 1011, Los Angeles, California 90028-6300

**Prepared by:**

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NOVEMBER 2010

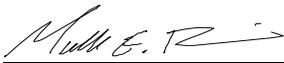
# CERTIFICATIONS

I, Shaik A. Saad, am a Professional Engineer licensed in the State of New York. I have primary direct responsibility for implementation of the remedial action for the 220, 222, 228, 230, 232 East 125 Street Sites (Sites Nos. 11CBCP004M and 11CBCP005M).

I, Mark E. Robbins am a Qualified Environmental Professional as defined in §43-140. I have primary direct responsibility for implementation of the remedial action for the 220, 222, 228, 230, 232 East 125 Street Site (NYC LBCA Site No. 11CBCP004M and 11CBCP005M).

I certify that this Remedial Action Work Plan (RAWP or Plan) has a plan for the handling, transport and disposal of soil, fill, fluids and other materials removed from the property as a function of this RAWP, and that all handling, transport and disposal of this material will be performed in accordance with all City, State and Federal laws and regulations. This RAWP requires that material exported during the course of the Plan be taken to facilities licensed to accept such material and that are in full compliance with all applicable City, State and Federal laws and regulations. All required permits will be obtained prior to performance of this work. This RAWP provides a process for importation of all soil, fill and other material from off-Site and all activities of this type will be in accordance with all applicable City, State and Federal laws and requirements.

I certify that this RAWP has provisions for nuisance control during the remediation and all invasive development work, including a dust, odor and vector suppression. Thresholds established in this Plan are intended to prevent nuisances from occurring.

_____	_____	_____
NYS PE Name and License Number	Date	Signature
<u>Mark E. Robbins</u>	<u>11/19/2010</u>	<u></u>
NYS Qualified Env. Professional	Date	Signature

I certify that all engineering plans, specifications and associated designs included in the RAWP have been personally developed by me or under my direct supervision, meet industry standards, and are appropriate for the intended purpose established in this Plan. It is a violation of Article 130 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State licensed engineer in accordance with Section 7209(2), Article 130, New York State Education Law.

_____	_____	_____
NYS PE Name and License Number	Date	Signature

# REMEDIAL ACTION WORK PLAN

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## LIST OF ACRONYMS

<b>Acronym</b>	<b>Definition</b>
AOC	Area of Concern
AS/SVE	Air Sparging/Soil Vapor Extraction
BOA	Brownfield Opportunity Area
CAMP	Community Air Monitoring Plan
C/D	Construction/Demolition
COC	Certificate of Completion
CQAP	Construction Quality Assurance Plan
CSOP	Contractors Site Operation Plan
DCR	Declaration of Covenants and Restrictions
ECs/ICs	Engineering and Institutional Controls
HASP	Health and Safety Plan
IRM	Interim Remedial Measure
BCA	Brownfield Cleanup Agreement
MNA	Monitored Natural Attenuation
NOC	Notice of Completion
NYC BCP	New York City Brownfield Cleanup Program
NYC DEP	New York City Department of Environmental Protection
NYC DOHMH	New York State Department of Health and Mental Hygiene
NYCRR	New York Codes Rules and Regulations
NYC OER	New York City Office of Environmental Remediation
NYS DEC	New York State Department of Environmental Conservation
NYS DEC DER	New York State Department of Environmental Conservation Division of Environmental Remediation
NYS DOH	New York State Department of Health
NYS DOT	New York State Department of Transportation
ORC	Oxygen-Release Compound
OSHA	United States Occupational Health and Safety Administration
PE	Professional Engineer

PID	Photo Ionization Detector
QEP	Qualified Environmental Professional
QHHEA	Qualitative Human Health Exposure Assessment
RAOs	Remedial Action Objectives
RAR	Remedial Action Report
RAWP	Remedial Action Work Plan or Plan
RCA	Recycled Concrete Aggregate
RD	Remedial Design
RI	Remedial Investigation
RMZ	Residual Management Zone
SCOs	Soil Cleanup Objectives
SCG	Standards, Criteria and Guidance
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SVOC	Semi-Volatile Organic Compound
USGS	United States Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound

# **EXECUTIVE SUMMARY**

## **Site Description, Physical Setting and Site History**

The Sites are identified as 220-222, 228, 230 and 232 East 125<sup>th</sup> Street, New York, New York, and are further described as Block 1789, Lots 39 (Site A), and 36, 35 and 34 (Site B), respectively. Church of Scientology Religious Trust is filing an application to enter into the New York City Brownfield Cleanup Program (NYC BCP) under the management of the Mayor's Office of Environmental Remediation (OER) as a Volunteer. The sites are associated with Brownfield Cleanup Program ID number 11CBCP004M and 11CBCP005M.

The sites consist of two developments separated by The New York Public Library located at 226 East 125<sup>th</sup> Street. Both sites are bounded by East 125<sup>th</sup> Street to the north, East 124<sup>th</sup> Street to the south, and are between 2<sup>nd</sup> Avenue to the east, and 3<sup>rd</sup> Avenue to the west, in the Borough of Manhattan, New York.

The site at 220-222 E 125<sup>th</sup> Street, or Lot 39 (Site A), is a rectangular-shaped lot, approximately 5,046 square feet in size that is currently developed with a 6-story commercial building with a full basement. The site at 228 E 125<sup>th</sup> Street, or Lot 36 (with Lot 35 and 34, collectively, Site B), is a rectangular-shaped lot approximately 2,523 square feet in size that is currently developed with a 2-story commercial building with no basement. 230 E 125<sup>th</sup> Street, or Lot 35, is a rectangular-shaped lot approximately 2,523 square feet in size that is currently developed with a 2-story building with a full basement. 232 E 125<sup>th</sup> Street, or Lot 34, is a rectangular-shaped lot approximately 2,523 square feet in size that is currently developed with a 3-story building with a full basement. The entire site is currently unoccupied.

The topography of the site and its vicinity is generally level. The surrounding property uses are predominantly residential and commercial.

The applicant is proposing to make the Site protective of human health and the environment consistent with the contemplated end use as a Church of Scientology (Site B) and an administration building for the Church of Scientology (Site A).

## **Summary of Past Uses of Site and Areas of Concern**

Based on a review of Fire Insurance Maps and Regulatory Agency documents from a Phase I Environmental Site Assessment (ESA) Report prepared by Hydro Tech Environmental in October 2010, a Site history was established. The Sites were historically utilized for commercial purposes. The property located at Lot 36 on Site B was utilized as a coal yard in 1896 and as a manufacturing facility from 1939 to 2005. Lot 36 was last utilized for printing operations. The property located at Lot 39 (Site A) was utilized for manufacturing operations from 1950 to 1963. Lots 34 and 35 (Site B) were utilized for commercial operations from 1939 to 2005. Lot 35 was utilized as a laundry in 1911. Lots 34 and 35 were last utilized as a Church.

AOCs are listed below:

1. AST in northern portion of Lot 39.
2. Presence of historical fill and historical utilization of Lot 36 for printing operations and Lot 39 for manufacturing purposes.
3. Presence of petroleum staining of foundation slab at Lot 36.

## **Summary of the Work Performed under the Remedial Investigation**

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
2. Installed six soil borings in Lots 34, 35 and 36 (Site B) and three soil borings in Lot 39 (Site A), and collected seventeen soil samples for chemical analysis from the soil borings to evaluate soil quality; one soil boring did not contain soil at depth of zero to 2 feet and was terminated at 4 feet due to groundwater.
3. Installed three groundwater monitoring wells in Site B and two groundwater monitoring wells in Site A to establish groundwater flow and collected five groundwater samples for chemical analysis to evaluate groundwater quality. Performed a groundwater survey to determine the site specific groundwater flow direction.
4. Installed nine soil vapor probes around Site perimeter in Site B and six soil vapor probes around Site perimeter in Site A and collected fifteen samples for chemical analysis.

5. One indoor air sample was collected in Site B and one indoor air sample was collected in Site A for chemical analysis. One outdoor air sample was collected for chemical analysis.

### **Summary of the Hydrogeological Findings**

The Geology and Hydrogeology of the Sites have been thoroughly investigated. Findings of the investigations indicate:

1. Depth to groundwater beneath the sites is approximately 12 feet.
2. Groundwater flow is generally from west to east beneath the Site.
3. Bedrock was not encountered during geotechnical or soil borings investigations. During the geotechnical investigation a boring was installed to 100 feet below grade and bedrock was not identified.
4. The stratigraphy from street grade to a depth of 8 feet at Lot 36 consists of fill material. The fill is underlain by glacial alluvium.

### **Summary of the Environmental Contamination**

1. **Site A Soil:** Materials beneath the foundation slab on this 1/9 acre property were sampled at three locations. No SVOCs exceeded Track 1 Soil Cleanup Objectives (SCOs). VOCs did not exceed Track 1 SCOs. Extremely low levels of metals were identified in soil samples. Metals did not exceed Track 1 SCOs.
2. **Site A Groundwater:** Groundwater is identified at 10 feet depth below street grade. Groundwater contained very low levels of dissolved metals in samples. Groundwater samples achieved Class GA Groundwater standards for dissolved metals. SVOCs, PCBs and Pesticides were not detected. No VOCs were detected above the Class GA groundwater standards. Unfiltered samples showed evidence of soil turbidity. No saline intrusion was evident.
3. **Site A Soil Vapor:** Soil vapor samples were collected at 6 locations on the 1/9 acre site and showed wide spread but generally low to moderate levels of BTEX compounds. Individual BTEX ranged from ND to 87 ug/m<sup>3</sup> with highest concentrations on the south side of the property. Similarly, trichlorethylene and perchlorethylene were detected in

two of six samples and on the south side of the property. Concentrations of these two contaminants were very low and did not exceed  $0.6 \text{ ug/m}^3$  in either sample. No onsite source of BTEX or chlorinated VOC was detected and soil vapor findings are attributed to off-site activities and are not related to an on-site source.

4. **Site B Soil:** Soil/fill samples confirmed the presence of moderate concentrations of SVOCs, mostly PAH compounds, in shallow soil/fill on Lot 36 and low concentrations on Lot 35 and 34. SVOCs are attributed to the presence of historic fill. SVOCs are present in soil from zero to 2 feet in the northern and southern quadrants of Lot 36. PAHs are not detected in deeper soil samples on any of the three lots. No other SVOCs were detected in the deep soil samples. No VOCs were detected in any soil sample above Track 1 SCOs. Metals were identified in soil from zero to 2 feet in northern and southern portions of Lots 34, 35 & 36. Elevated levels of metals were not detected in any of the deep soil samples.
5. **Site B Groundwater:** Groundwater is identified at 10 feet depth below grade. Groundwater contained very low levels of dissolved metals in samples. Unfiltered samples showed evidence of soil turbidity. No saline intrusion was evident. SVOCs, PCBs and Pesticides were not detected. No VOCs were identified above Class GA groundwater standard. Perchloroethylene was identified in groundwater below Class GA groundwater standards on Lot 34 and 35 and trichloroethylene was identified below Class GA groundwater standards in a monitor well on Lot 35. Perchloroethylene and trichloroethylene were not identified on Lot 36. No VOCs exceeded applicable groundwater standards.
6. **Site B Soil Vapor:** Sub slab soil vapor samples from Lots 34, 35 and 36 exhibited BTEX (and other compounds associated with a gasoline spill) and perchloroethylene and trichloroethylene. Total VOC compounds in soil vapor ranged from  $0.250 \text{ ug/m}^3$  to  $750 \text{ ug/m}^3$  beneath Lots 34, 35 and 36. The site contaminants observed in sub-slab soil vapor appear to be related to two sources, a gasoline-associated source and a chlorinated solvent source. Highest concentrations of chlorinated hydrocarbons are found on the north side and south side of Lots 35 and 36. BTEX concentrations occur in all nine of the soil vapor probes on the property, with concentrations below  $60 \text{ ug/m}^3$  in all cases and no clear pattern of higher concentrations on the lots. Gasoline management or distribution activities or other activities that would be associated with BTEX were not identified in past usage of any of the lots on this site. No BTEX was observed in any of the soil or groundwater samples collected on the three lots that make up the site. Similar to Site A where no contamination was observed and BTEX was identified in soil vapor, this

suggests an off-site BTEX source. Lot 36, the westernmost of the three lots, was most recently utilized for printing operations which may explain the observations of PCE and TCE. However, the study did not detect any PCE or TCE in shallow or deep soil samples or groundwater samples on Lot 36 or in soil on either of the two adjacent lots. Groundwater did show low levels of PCE and TCE (below 3 ug/l) under the former church property but neither compound was identified under Lot 36. These findings are not consistent with an onsite source on Lot 36 but could be explained by a nearby offsite source. Much of the neighborhood is paved and soil vapor can be expected to persist and migrate laterally from its original source area. The plan for redevelopment of the property, including Lot 36, involves the removal of soil and fill down to a final depth of approximately 12-14 feet below street grade. Lot 36 has no basement and substantial soil will be removed during this activity. During excavation activities, soil and fill will be screened by visual, olfactory and PID methods. If an on-site source area for PCE or TCE exists on Lot 36, it is anticipated that it will be removed during soil/fill excavation.

Based on the results of this RI, we conclude that there is no evidence to suspect disposal of significant quantities of hazardous waste

### **Summary of the Remedy**

The preferred remedy listed below achieves protection of public health and the environment for the intended use of the property. The preferred remedial action alternative achieves all of the remedial action objectives established for the project and addresses applicable SCGs. The preferred remedial action alternative is effective in both the short-term and long-term and reduces mobility, toxicity and volume of contaminants. The preferred remedial action alternative is cost effective, implementable and uses standards methods that are well established in the industry.

Remedial elements to be implemented at Site A will include:

1. Preparation of a Community Protection Statement and performance of all required NYC BCP citizen participation activities according to an approved Citizen Participation Plan (CPP).

2. Establishment of Track 1 Soil Cleanup Objectives (SCOs). The site already achieves Track 1 SCOs and removal action is not required.
3. Removal of an AST in the building basement and register as required by New York State laws and regulations.
4. Placement of a vapor barrier on the existing slab, placement of a new 2-inch layer of cement on the barrier, and operation of a positive pressure HVAC in the basement level to provide protection from soil vapor intrusion from off-site.
5. Screening during any basement excavations for indications of contamination by visual means, odor, and monitoring with a photo ionization detector (PID).
6. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas.
7. Performance of Community Air Monitoring Program for particulates and volatile organic carbon compounds.
8. Submission of a RAR which describes the remedial activities including any changes from this RAWP, certifies that the remedial requirements have or will be achieved, defines the Site boundaries, and describes any Engineering and Institutional Controls to be implemented at the Site.

Remedial elements to be implemented at Site B will include:

1. Preparation of a Community Protection Statement and performance of all required NYC BCP citizen participation activities according to an approved Citizen Participation Plan (CPP).
2. Establishment of Track 1 Soil Cleanup Objectives (SCOs).
3. Excavation and removal of soil/fill to a depth of 12-14 feet below street grade including 12-14 feet at Lot 36 and approximately 2 feet beneath existing basements at Lots 35 and 34.
34. Application of Track 1 SCOs for soils that will not be excavated.
4. Construction of an engineered composite cover consisting of a 2-foot mat-slab.

5. Construction of a vapor barrier beneath the building slab and operation of a positive pressure HVAC in the building basement to address potential soil vapor intrusion from offsite.
6. Performance of Community Air Monitoring Program for particulates and volatile organic carbon compounds.
7. Collection and analysis of end-point samples to evaluate the performance of the remedy with respect to attainment of Track 1 SCOs.
8. Screening for indications of contamination by visual means, odor, and monitoring with a photo ionization detector (PID) of excavated soil/fill during all intrusive work.
9. Transportation and off-Site disposal of all soil/fill material at permitted facilities in accordance with all Federal, State and City laws and regulations for handling, transport, and disposal.
10. Sampling and analysis of excavated media as required by disposal facilities.
11. Appropriate segregation of excavated media for off-site disposal.
12. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas.
13. Implementation of storm-water pollution prevention measures.
14. Performance of all activities associated with the remedial action, including permitting requirements and pretreatment requirements, will be addressed in accordance with all applicable Federal, State and City laws and regulations.
15. Import of materials to be used for backfill and cover in compliance with OER approved plan and in accordance with all Federal, State and City laws and regulations.
16. Placement of backfill material in excavated areas as needed.
17. If Track 1 cannot be achieved, recording of a Declaration of Covenants and Restrictions that includes a full listing of Engineering Controls and Institutional Controls and notice that these controls must be maintained within a Site Management Plan to prevent future exposure to any residual contamination remaining at the Site.

18. If Track 1 cannot be achieved, establishment in a recorded Declaration of Covenants and Restrictions, a series of Institutional Controls on the Site, including: (1) compliance with the provisions of the recorded Declaration of Covenants and Restrictions; (2) compliance with provisions of the approved Site Management Plan; (3) operation and maintenance of Engineering Controls as specified in the Site Management Plan; (4) inspection and certification of all Engineering Controls at a frequency and in a manner defined in the Site Management Plan; (5) performance of environmental and public health monitoring as defined in the Site Management Plan; (6) reporting at a frequency and in a manner defined in the Site Management Plan; (7) protection of on-Site monitoring devices in a manner specified in the SMP; and (8) prohibition of discontinuation of Engineering Controls without an OER-approved amendment or extinguishment of the Declaration of Covenants and Restrictions.
19. If Track 1 cannot be achieved, establishment in a recorded Declaration of Covenants and Restrictions, a series of site restriction Institutional Controls on the Site, including: (1) prohibition of vegetable gardening and farming; (2) prohibition of the use of groundwater without treatment rendering it safe for the intended use; (3) prohibition on all disturbance of residual contaminated material unless it is conducted in accordance with the provisions in the Site Management Plan; and (4) prohibition on higher level of land usage without an OER-approved amendment or extinguishment of this Declaration of Covenants and Restrictions.
20. Submission of a RAR which describes the remedial activities including any changes from this RAWP, certifies that the remedial requirements have or will be achieved, defines the Site boundaries, and describes any Engineering and Institutional Controls to be implemented at the Site.
21. If Track 1 cannot be achieved, submission of an approved Site Management Plan in the Remedial Action Report for long-term management of residual contamination, including plans for Institutional and Engineering Controls for: (1) inspection and certification, (2) monitoring, (3) operation and maintenance, and (4) reporting.

## COMMUNITY PROTECTION STATEMENT

The Office of Environmental Remediation created the New York City Brownfield Cleanup Program (NYC BCP) to provide governmental oversight for the cleanup of contaminated property in NYC. This Remedial Action Work Plan (“cleanup plan”) describes the findings of prior environmental studies that show the location of contamination at the site, and describes the plans to clean up the site to protect public health and the environment.

This Remedial Action Work Plan for Site A and Site B (220, 222, 228, 230, 232 East 125 Street) provides a very high level of protection for neighboring communities. This cleanup plan also includes many other elements that address common community concerns, such as community air monitoring, odor, dust and noise controls, hours of operation, good housekeeping and egress cleanliness, truck management and routing, and opportunities for community participation. The purpose of this Community Protection Statement is to explain these community protection measures in non-technical language to simplify community review.

**Remedial Investigation and Cleanup Plan.** Under the NYC BCP, a thorough cleanup study of these properties (called a remedial investigation) has been performed to identify past property usage, to sample and test soils, groundwater and soil vapor, and identify contaminant sources present on the property. The cleanup plan has been designed to address all contaminant sources that have been identified during the study of these properties.

**Identification of Sensitive Land Uses.** Prior to selecting a cleanup, the neighborhood was evaluated to identify sensitive land uses nearby, such as schools, day care facilities, hospitals and residential areas. The cleanup program was then tailored to address the special conditions of this community. Land uses in the area include one day care center located to the southwest of the Site.

**Qualitative Human Health Exposure Assessment.** An important part of the cleanup study of the Site is the performance of a study to find all of the ways that people might come in contact with contaminants of the Site now or in the future. This study is called a Qualitative Human Health Exposure Assessment (QHHEA). A QHHEA was performed for this project. This assessment has considered all known contamination at the Site and evaluated the potential for

people to come in contact with this contamination. All potential public exposures will be addressed under this cleanup plan.

**Health and Safety Plan.** This cleanup plan includes a Health and Safety Plan that is designed to protect community residents and on-Site workers. The elements of this plan are in compliance with safety requirements of the United States Occupational Health and Safety Administration. This plan includes many protective elements including those discussed below.

**Site Safety Coordinator.** This project has a designated Site safety coordinator to implement the Health and Safety Plan. The safety coordinator maintains an emergency contact sheet and protocol for management of emergencies. The Site safety coordinator is Paul I. Matli and can be reached at 631-241-7165 from 8:30 AM to 5:00 PM.

**Worker Training.** Workers participating in cleanup of contaminated material on this project are required to be trained in a 40-hour hazardous waste operators training course and to take annual refresher training. This pertains to workers performing specific tasks including removing contaminated material and installing cleanup systems in contaminated areas.

**Community Air Monitoring Plan (CAMP).** Community air monitoring will be performed during this cleanup project to ensure that the community is properly protected from contaminants, dust and odors. Air samples will be tested in accordance with a detailed plan called the Community Air Monitoring Plan or CAMP. Results will be regularly reported to the NYC Office of Environmental Remediation. This cleanup plan also has a plan to address any unforeseen problems that might occur during the cleanup (called a 'Contingency Plan').

**Odor, Dust and Noise Control.** This cleanup plan includes actions for odor and dust control. These actions are designed to prevent off-Site odor and dust nuisances and includes steps to be taken if nuisances are detected. Generally, dust is managed by application of physical covers and by water sprays. Odors are controlled by limiting the area of open excavations, physical covers, foams and by a series of other actions (called operational measures). The project is also required to comply with NYC noise control standards. If you observe problems in these areas, please contact onsite Project Manager Paul I. Matli at 631-241-7165 or OER Project Manager Mr. Shaminder Chawla at 212-788-8841 or at 212- 442-3007.

**Quality Assurance.** This cleanup plan requires that evidence be provided to illustrate that all cleanup work required under the plan has been completed properly. This evidence will be summarized in the final report, called the Remedial Action Report. This report will be submitted to the NYC Office of Environmental Remediation and will be thoroughly reviewed.

**Storm-Water Management.** To limit the potential for soil erosion and discharge, this cleanup plan has a storm-water management plan. The main elements of the storm water management plan include physical barriers such as tarp covers and fencing, and a program for frequent inspection.

**Hours of Operation.** The hours for operation of cleanup will comply with the NYC Department of Buildings construction code requirements or according to specific variances issued by that agency. For this cleanup project, the hours of operation are 7:00 AM to 5:00 PM. OER will be notified by the Volunteer of any variances issued by the Department of Buildings.

**Signage.** While the cleanup is in progress, a sign will be prominently posted at the main entrance of the property noting that the project is participating in the NYC Brownfield Cleanup Program.

**Complaint Management.** The contractor performing this cleanup is required to address all complaints. If you have any complaints, you can call the facility Project Manager at Paul I. Matli at 631-241-7165 or OER Project Manager Mr. Shaminder Chawla at 212-788-8841 or at 212- 442-3007, or call 311 and mention the Sites are in the NYC Brownfield Cleanup Program.

**Utility Mark-outs.** To promote safety during excavation in this cleanup, the contractor is required to first identify all utilities and must perform all excavation and construction work in compliance with NYC Department of Buildings regulations.

**Soil and Liquid Disposal.** All soil and liquid material removed from the Site as part of the cleanup will be transported and disposed of in accordance with all City, State and Federal regulations and required permits will be obtained.

**Soil Chemical Testing and Screening.** All excavations will be supervised by a trained and properly qualified environmental professional. In addition to extensive sampling and chemical testing of soils on the Site, excavated soil will be screened continuously using hand-held

instruments, by sight, and by smell to ensure proper material handling and management, and community protection.

**Stockpile Management.** Soil stockpiles will be kept covered with tarps to prevent dust, odors and erosion. Stockpiles will be frequently inspected. Damaged tarp covers will be promptly replaced. Stockpiles will be protected with silt fences. Hay bales will be used, as needed to protect storm water catch basins and other discharge points.

**Trucks and Covers.** Loaded trucks leaving the Sites will be securely covered to prevent dust and odor, and properly recorded in logs and records and placarded in compliance with City, State and Federal laws, including those of the New York State Department of Transportation. If loads contain wet material that can leak, truck liners will be used. All transport of materials will be performed by licensed truckers and in compliance with all laws and regulations.

**Imported Material.** All fill materials proposed to be brought onto the Sites will comply with detailed rules outlined in this cleanup plan and will be inspected and approved by a qualified worker located on-Site. Waste materials will not be brought onto the Site. Trucks entering the Site with imported clean soils will be securely covered with tight fitting covers.

**Equipment Decontamination.** All equipment used for cleanup work will be washed before it leaves the Site. Trucks will be cleaned at a washing station on the property before leaving the Site.

**Housekeeping.** Locations where trucks enter or leave the Sites will be inspected every day and cleaned regularly to ensure that they are free of dirt and other materials from the Sites.

**Truck Routing.** Truck routes have been selected to: (a) limit transport through residential areas and past sensitive nearby properties; (b) maximize use of city-mapped truck routes; (c) limit total distance to major highways; (d) promote safety in entry to highways; (e) promote overall safety in trucking; and (f) minimize off-Site line-ups (queuing) of trucks entering the property. Loaded trucks leaving the Site will not stop or idle in the local neighborhood.

**Final Report.** The results of all cleanup work will be fully documented in a final report (called a Remedial Action Report) that will be available for you to review in the public document repositories located at New York Public Library located within the center portion of the property.

**Long-Term Site Management.** To provide long-term protection after the cleanup is complete, the property owner will be required to comply with an ongoing Site Management Plan that calls for continued inspection of protective controls, such as Site covers. The Site Management Plan is evaluated and approved by the NYC Office of Environmental Remediation. Requirements that the property owner must comply with are defined in the property's deed. A certification of continued protectiveness of the cleanup will be required from time to time to show that the approved cleanup is still effective.

## **CITIZEN PARTICIPATION PLAN**

The NYC Office of Environmental Remediation and Hydro Tech Environmental Corp. have established this Citizen Participation Plan because the opportunity for citizen participation is an important component of the NYC Brownfield Cleanup Program. A NYC BCP brownfield site is any property in the City in which redevelopment or reuse may be complicated by the presence or potential presence of light to moderate levels of contamination. This Citizen Participation Plan describes how information about the project will be disseminated to the Community during the remedial process. As part of its obligations under the NYC BCP, Hydro Tech Environmental Corp. will maintain a repository for project documents and provide public notice at specified times throughout the remedial program. This Plan also takes into account potential environmental justice concerns in the Community that surrounds the project Sites. Under this Citizen Participation Plan, project documents and work plans are made available to the public in a timely manner. Public comment on work plans is strongly encouraged during public comment periods. Work plans are not approved by the NYC Office of Environmental Remediation (OER) until public comment periods have expired and all comments are formally reviewed. An explanation of cleanup plans in the form of a public meeting or informational session is available upon request to OER's project manager assigned to this Site, Mr. Shaminder Chawla, who can be contacted about these issues or any others questions, comments or concerns that arise during the remedial process at 212-788-8841 or at 212- 442-3007.

**Project Contact List.** OER has established a single Site Contact List for these projects to provide public notices in the form of fact sheets to interested members of the Community. Communications will include updates on important information relating to the progress of the cleanup program at the Site as well as to request public comments on the cleanup plan. The Project Contact List includes owners and occupants of adjacent buildings and homes, principal administrators of nearby schools, hospitals and day care centers, the public water supplier that serves the area, established document repositories, the representative Community Board, City Council members, other elected representatives and any local Brownfield Opportunity Area (BOA) grantee organizations. Any member of the public or organization will be added to the Site Contact List on request. A copy of the Site Contact List is maintained by OER's project

manager. If you would like to be added to the Project Contact List, contact NYC OER at (212) 788-8841 or by email at [brownfields@cityhall.nyc.gov](mailto:brownfields@cityhall.nyc.gov).

**Repositories.** A document repository is maintained in the nearest public library that maintains evening and weekend hours. This document repository is intended to house, for community review, all principal documents generated during the cleanup program including project applications, Remedial Investigation plans and reports, draft and final Remedial Action plans and reports, the Site Management Plan, the Notice of Completion and all public notices and fact sheets produced during the lifetime of the remedial project. Hydro Tech Environmental Corp. will regularly inspect the repositories to ensure that they are fully populated with project information. The repository for this project is:

Repository Name:

New York Public Library

Address: 224-226 East 125<sup>th</sup> Street

Tel: 212-534-5050

Hours of operations:

Monday and Wednesday: 11:00 AM to 6:00 PM

Tuesday and Thursday: 12:00 AM to 7:00 PM

Friday and Saturday: 10:00 AM to 5:00 PM

And at:

NYC Office of Environmental Remediation

[www.nyc.gov/oer](http://www.nyc.gov/oer)

**Digital Documentation.** NYC OER strongly encourages the use of digital documents in repositories as a means of minimizing paper use while also increasing convenience in access and ease of use.

**Public Notice and Public Comment.** Public notice to all members of the Project Contact List is required at three major steps during the performance of the cleanup program (listed below) and at other points that may be required by OER. Notices will include Fact Sheets with descriptive project summaries, updates on recent and upcoming project activities, repository information, and important phone and email contact information. All notices will be prepared by Hydro Tech Environmental Corp., reviewed and approved by OER prior to distribution and mailed by Hydro Tech Environmental Corp., who is obligated to submit a certification of mailing to OER within five days of the mailing date. Public comment is solicited in public notices for all work plans developed under the NYC Brownfield Cleanup Program. Final review of all work plans by OER will consider all public comments. Approval will not be granted until the public comment period has been completed.

**Citizen Participation Milestones.** Public notice and public comment activities occur at several steps during a typical NYC BCP project. These include:

- **Public Notice of the availability of the NYC BCP Application, Remedial Investigation Report and Remedial Action Work Plan and a 30-day public comment period on the Application and Remedial Action Work Plan.**

Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the availability of the Application, Remedial Investigation Report and Remedial Action Work Plan and the initiation of a 30-day public comment period on the Application and Remedial Action Work Plan. The Fact Sheet summarizes the findings of the RIR and provides details of the RAWP. The public comment period will be extended an additional 15 days upon public request. A public meeting or informational session will be conducted by OER upon request.

- **Public Notice announcing the approval of the RAWP and the start of remediation**

Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the approval of the RAWP and the start of remediation.

- **Public Notice announcing the completion of remediation, designation of Institutional and Engineering Controls and issuance of the Notice of Completion**

Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the completion of remediation, providing a list of all Institutional and Engineering Controls implemented for to the Site and announcing the issuance of the Notice of Completion.

## SUSTAINABILITY STATEMENT

The Sustainability Statement is a program employed by OER to encourage the Enrollee to consider the benefits of sustainable remediation and development during the formative project planning process. The Sustainability Statement provides a summary of sustainability efforts to be employed by the Enrollee or its contracting team. OER strongly recommends, but does not require, that the Enrollee employ sustainable means to implement the selected remedy defined in this RAWP and subsequent redevelopment including those that take into consideration the sustainability goals defined in PlaNYC. Such goals include: maximizing the recycling and reuse of clean, non-virgin materials; reducing the consumption of virgin and non-renewable resources; minimizing energy consumption and greenhouse gas emissions; improving energy efficiency; and enhancing biodiversity during landscaping associated with Site development.

This Sustainability Statement summarizes sustainable and green remediation efforts to be employed under this Remedial Action Work Plan (RAWP). The Church of Scientology Religious Trust has evaluated sustainable remediation opportunities and proposes the following means to address these goals in the remediation.

**Reuse of Clean, Recyclable Materials.** Reuse of clean, recyclable materials reduces consumption of non-renewable virgin resources and can provide energy savings and greenhouse gas reduction since these materials can be locally-derived.

An estimate of the mass (tonnage) of clean, non-virgin materials (reported by type of material) reused under this plan will be quantified and reported in the RAR in total tonnage.

**Reduce Consumption of Virgin and Non-Renewable Resources.** Reduced consumption of virgin and non-renewable resources lowers the overall environmental impact of the project on the region by conserving these resources.

An estimate of the mass (tonnage) of virgin and non-renewable resources, the use of which will be avoided under this plan, will be quantified and reported in the RAR in total tonnage.

**Recontamination Control.** Recontamination after cleanup and redevelopment is completed undermines the value of work performed, may result in a property that is less protective of public health or the environment, and may necessitate additional cleanup work later or impede future

redevelopment. Recontamination can arise from future releases that occur within the property or by influx of existing contamination from off-Site.

Under future conditions, building recontamination from potential off-site sources will be prevented through the use of a vapor barrier below the buildings slabs and the construction of sub-grade depressurization systems. Current regulations will be met for storage and handling of any materials onsite that may present a potential recontamination threat. If a track 1 remedy cannot be achieved, long-term site management will include periodic site inspection that will identify and correct any new issues of environmental concern.

An estimate of the area of the Site that utilizes recontamination controls under this plan will be reported in the RAR in total acres and percentage of total Site area.

**Storm-water Retention.** Storm-water retention improves water quality by lowering the rate of combined storm-water and sewer discharges to NYC's sewage treatment plants during periods of precipitation, and reduces the volume of untreated influent to local surface waters.

An estimate of the enhanced storm-water retention capability of the brownfield redevelopment project will be included in the RAR.

**Linkage with Green Building.** Green buildings provide a multitude of benefits to the city across a broad range of areas, such as reduction of energy consumption, conservation of resources, and reduction in toxic materials use.

The number of Green buildings that are associated with this brownfield redevelopment property will be reported in the RAR. The total square footage of green building space created as a function of this brownfield redevelopment will be quantified for residential, commercial and industrial/manufacturing uses.

**Paperless Brownfield Cleanup Program.** Church of Scientology Religious Trust is participating in OER's Paperless Brownfield Cleanup Program. Under this program, submission of electronic documents will replace submission of hard copies for the review of project documents, communications and milestone reports. A gross estimate of the number of pounds of paper saved under this plan will be reported in the RAR.

**Low-Energy Project Management Program.** Church of Scientology Religious Trust is participating in OER's low-energy project management program. Under this program, whenever possible, meetings are held using remote communication technologies, such as videoconferencing and teleconferencing to reduce energy consumption and traffic congestion associated with personal transportation. A gross estimate of the number of miles of personal transportation that is conserved in this process, and the number of commuter trips within NYC that are avoided will be quantified and reported in the RAR.

**Grey Water Reuse.** Reuse of gray water, including harvested rainwater, in place of water from NYC's water distribution system reduces demand on the city's water supply and conserves this valuable resource.

A gross estimate of the grey water reuse capability of the brownfield redevelopment project will be reported (gallons per day).

# **REMEDIAL ACTION WORK PLAN**

## **1.0 INTRODUCTION**

Church of Scientology Religious Trust has enrolled as a Volunteer in the New York City Brownfield Cleanup Program (NYC BCP) to investigate and remediate two sites (Site A and Site B) totaling 0.29-acres located at 220, 222, 228, 230 and 232 East 125 Street in Manhattan, New York City. Community use is proposed for the property. This Remedial Action Work Plan (RAWP) summarizes the nature and extent of contamination as determined from data gathered during the Remedial Investigation (RI), the last phase of which was performed between October 19<sup>th</sup>, 2010 and October 21<sup>st</sup>, 2010. It provides remedial alternatives analysis that includes consideration of a Track 1 (permanent) cleanup, and a description of the proposed remedial action. The remedial action described in this document provides for the protection of public health and the environment, complies with applicable environmental standards, criteria and guidance and conforms with applicable City, State and Federal laws and regulations.

### **1.1 SITE LOCATION AND DESCRIPTION**

The Sites are located in Manhattan, New York City and are identified as Block 1789 and Lot 34, 35, 36 (Site B) and 39 (Site A) on the New York City Tax Map. Figure 1 shows the Site location. The New York Public Library is located between Lot 36 and Lot 39. The total square footage of the Sites is 0.29-acres. 228 E 125<sup>th</sup> Street, or Lot 34, is a rectangular-shaped lot approximately 2,523 square feet in size that is currently developed with a 3-story building with a full basement, 230 E 125<sup>th</sup> Street, or Lot 35, is a rectangular-shaped lot approximately 2,523 square feet in size that is currently developed with a 2-story building with a full basement and 232 E 125<sup>th</sup> Street, or Lot 36 is a rectangular-shaped lot approximately 2,523 square feet in size that is currently developed with a 2-story commercial building with no basement. Lots 34, 35 and 36 (collectively, Site B) are three adjoining properties bounded by East 125<sup>th</sup> Street to the north, residential buildings to the south, New York Public Library to the east and a 2-story commercial building to the west. 220-222 E 125<sup>th</sup> Street, or Lot 39 (Site A), is a rectangular-shaped lot, approximately 5,046 square feet in size that is currently developed with a 6-story commercial building with a full basement. This portion of the site is bounded by 125<sup>th</sup> Street to

the North, residential buildings to the South, New York Public Library to the east and a 2-story residential and restaurant building to the west. A map of the site boundary is shown in Figure 2.

Both sites are currently unoccupied.

## **1.2 CONTEMPLATED REDEVELOPMENT PLAN**

An RI was performed to compile and evaluate data and information necessary to develop this RAWP in a manner that will render the Sites protective of public health and the environment consistent with the contemplated end use. The proposed redevelopment plan and end use is described below. However, the Remedial Action contemplated under this RAWP may be implemented independently of the proposed redevelopment plan.

The contemplated future use of the Sites is commercial and will include a community space, specifically a church (Site B) and administrative office for the church (Site A). The buildings on Lots 34, 35 and 36 will be demolished and developed into a Church for the Church of Scientology. The development will include the excavation of soils to the water table throughout Lot 34, 35 and 36. The basement will be used for administrative office, a break room, an exercise area, restrooms and mechanical rooms. The building on Lot 39 will be renovated and utilized for administrative purposes by the Church of Scientology. Limited excavation activities are proposed as a part of the building renovation plan. No landscaped areas are proposed at either portion of the site. Layout of the proposed site development is presented in Figure 3. The current zoning designation is C4-4D. The proposed site use is consistent with existing zoning for the property.

## **1.3 DESCRIPTION OF SURROUNDING PROPERTY**

The Sites are located in a commercial and residential neighborhood. East 125<sup>th</sup> Street is located to the north of the Site. A residential/commercial building, a New York City Public Park and East 124<sup>th</sup> Street are located to the south of the Sites. New York Public Library is located between the sites and a 4-story residential and Bar/Grill are located to the east of Site B. A 2-story commercial business is located to the west of Site A.

Within 400 feet radius of the Sites, there are a variety of land uses including: vacant land, institutions, industrial, manufacturing, commercial, transportation and utility, parking, public

facilities, residential buildings (one to multi-family residential apartments) and mixed residential and commercial buildings. The Site is zoned C4-4D (general commercial district). Properties located within ¼ mile radius from the Site are zoned C6-3, C4-4, C1-9 (general commercial district), R7-2 (general residence district) and M1-2 (general manufacturing district).

### **Sensitive Receptors**

The New York Public Library is located between the two properties.

Within 320 feet radius, there is one day care center (ABC Rosie & Harry’s Place) located to the southwest and cross-hydraulic gradient of the Sites. Based on the distance and location of this identified sensitive receptor, the Sites should not impact upon its environmental quality.

No schools, hospitals, rivers, streams, wetlands or other sensitive receptors were identified within 500-foot radius from the Site. The following table indicates the closest sensitive receptors to the Site.

	Distance (feet)	Direction
Schools	952	NW
Day care facilities	320	SW
Hospitals	2,380	W
Residential areas	105	S
Rivers, streams	1,481	E
Wetlands	3,968	SE

Figure 2 shows the surrounding land usage, with sensitive environmental receptors indicated.

## **1.4 PRIOR ACTIVITY**

Based on an evaluation of the data and information from the RIR and this RAWP, the presence of inactive hazardous waste as defined in ECL §27-1303 is not suspected.

## **2.0 DESCRIPTION OF REMEDIAL ACTION OBJECTIVES**

### **2.1 REMEDIAL ACTION OBJECTIVES**

Based on the results of the RI, the following Remedial Action Objectives (RAOs) have been identified for these Sites:

#### **2.1.1 Groundwater**

- Remove contaminant sources causing impact to groundwater.
- Prevent direct exposure to contaminated groundwater.
- Prevent exposure to contaminants volatilizing from contaminated groundwater.

#### **2.1.2 Soil**

- Prevent direct contact with contaminated soil.
- Prevent exposure to contaminants volatilizing from contaminated soil.
- Prevent migration of contaminants that would result in groundwater or surface water contamination.

#### **2.1.3 Soil Vapor**

- Prevent exposure to contaminants in soil vapor.
- Prevent migration of soil vapor into dwelling and other occupied structures.

## **3.0 DESCRIPTION OF REMEDIAL ACTION PLAN**

### **3.1 REMEDIAL ACTION ALTERNATIVES ANALYSIS**

Site A currently meets Track 1 Soil Cleanup Objectives and no removal action is required. For Site B, a Track 1 remedial action alternatives considered in this alternatives analysis. Alternative 1 is a Track 1 alternative that involves complete removal of all soil and fill that exceeds the unrestricted Track 1 SCOs for Site B. This alternative involves the excavation and removal of approximately 3,100 tons of soil and fill and eliminates all contaminant sources and will not require any Engineering or Institutional Controls. However, due to the potential for vapor migration from off site, a soil vapor barrier and positive pressure HVAC will be implemented.

#### **3.1.1 Threshold Criteria**

##### **3.1.1.1 Protection of public health and the environment**

This criterion is an evaluation of the remedy's ability to protect public health and the environment, and an assessment of how risks posed through each existing or potential pathway of exposure are eliminated, reduced or controlled through removal, treatment, and implementation of Institutional Controls or Engineering Controls. Protection of public health and the environment must be achieved for all approved remedial actions.

The Track 1 alternative will result in excavation of all soil with contaminant concentration above Track 1 SCOs and would:

- Eliminate the risk of ingestion exposures or other direct contact with contaminated on-Site soils consistent with remedial action objectives;
- Eliminate the risk of leaching into groundwater and ingestion exposures or direct contact with groundwater with contamination derived from the Site consistent with remedial action objectives; and

- Eliminate potential sources for on-Site production of soil vapors, and prevent migration of on-Site derived vapors into occupied structures and eliminate associated inhalation exposures consistent with remedial action objectives.

### **3.1.2. Balancing Criteria**

#### 3.1.2.1. Compliance with Standards, Criteria and Guidance (SCGs)

The Track 1 alternative would address the chemical-specific SCGs for soil by excavation and removal of all material above the Track 1 SCOs. Focused attention on means and methods employed during the remedial action would ensure that handling and management of contaminated material would be in compliance with applicable SCGs.

#### 3.1.2.2 Short-term effectiveness and impacts

This evaluation criterion assesses the effects of the alternative during the construction and implementation phase until remedial action objectives are met. Under this criterion, alternatives are evaluated with respect to their effects on public health and the environment during implementation of the remedial action, including protection of the community during remedial actions, environmental impacts, time until remedial response objectives are achieved, and protection of workers during remedial actions.

The Track 1 alternative would result in some short-term impacts due to the quantity of excavation and transport required to remove all historic fill and other material necessary to achieve Track 1 SCOs throughout the Site. These impacts could include higher air quality impacts caused by greater soil excavation, handling and load out, and associated truck traffic. Focused attention to means and methods employed during the remedial action, including community air monitoring and appropriate truck routing, would minimize or negate the overall impact of this additional activity.

#### 3.1.2.3 Long-term effectiveness and permanence

This evaluation criterion addresses the results of a remedial action in terms of its permanence and quantity/nature of waste or residual contamination remaining at the Site after response objectives have been met, such as permanence of the remedial alternative, magnitude of remaining contamination, adequacy of controls including the adequacy and suitability of ECs/ICs

that may be used to manage contaminant residuals that remain at the Site and assessment of containment systems and ICs that are designed to eliminate exposures to contaminants, and long-term reliability of Engineering Controls.

The Track 1 alternative would be effective over the long-term by providing a permanent cleanup of on-Site contamination through removal of all soils in excess of the Track 1 SCOs and would eliminate any potential on-Site sources of soil vapors and groundwater contamination consistent with remedial action objectives.

#### 3.1.2.4 Reduction of toxicity, mobility, or volume of contaminated material

This evaluation criterion assesses the remedial alternative's use of treatment technologies that permanently and significantly reduce toxicity, mobility, or volume of contaminants as their principal element. The following is the hierarchy of source removal and control measures that are to be used to remediate a Site, ranked from most preferable to least preferable: removal and/or treatment, containment, elimination of exposure and treatment of source at the point of exposure. It is preferred to use treatment or removal to eliminate contaminants at a Site, reduce the total mass of toxic contaminants, cause irreversible reduction in contaminants mobility, or reduce of total volume of contaminated media.

The Track 1 alternative will provide maximum reduction of toxicity, mobility and volume of contaminated material on-Site by excavation and removal of all soils that exceed the Track 1 unrestricted use SCOs.

#### 3.1.2.5 Implementability

This evaluation criterion addresses the technical and administrative feasibility of implementing an alternative and the availability of various services and materials required during its implementation, including technical feasibility of construction and operation, reliability of the selected technology, ease of undertaking remedial action, monitoring considerations, administrative feasibility (e.g. obtaining permits for remedial activities), and availability of services and materials.

The Track 1 alternative is both feasible and implementable. It uses standard materials and services and well established technology. The reliability of the remedy is high. There are no

special difficulties associated with any of the activities proposed but will require a long period of time to accomplish due to the large quantity of soil and fill material that would require removal.

#### 3.1.2.6. Cost effectiveness

This evaluation criterion addresses the cost of alternatives, including capital costs (such as construction costs, equipment costs, and disposal costs, engineering expenses) and site management costs (costs incurred after remedial construction is complete) necessary to ensure the continued effectiveness of a remedial action.

The capital costs for the Track 1 alternative is higher than a no-removal remedial action. Higher costs are driven by higher total volume of soil/fill that would be excavated and transported from the Site and disposed of at an off-Site location.

The Track 1 alternative satisfies the threshold balancing criterion and other criterion listed here, and is fully protective of public health and the environment, will control migration of contaminants, will comply with SCGs, are effective for the short-term and long-term, are implementable, and reduces both mobility and toxicity.

#### 3.1.2.7 Community Acceptance

This evaluation criterion addresses community opinion and support for the remedial action. Observations here will be supplemented by public comment received on the RAWP.

Based on the overall goals of the remedial program and initial observations by the project team, the alternative is acceptable to the community. This RAWP will be subject to and undergo public review under the NYC BCP and will provide the opportunity for detailed public input on the remedial alternative and the selected remedial action. This public comment will be considered by OER prior to approval of this plan.

#### 3.1.2.8 Land use

This evaluation criterion addresses the proposed use of the property. This evaluation has considered reasonably anticipated future uses of the Site and takes into account: current use and historical and/or recent development patterns; applicable zoning laws and maps; NYS Department of State's Brownfield Opportunity Areas (BOA) pursuant to section 970-r of the general municipal law; applicable land use plans; proximity to real property currently used for

residential use, and to commercial, industrial, agricultural, and/or recreational areas; environmental justice impacts, Federal or State land use designations; population growth patterns and projections; accessibility to existing infrastructure; proximity of the site to important cultural resources and natural resources, potential vulnerability of groundwater to contamination that might emanate from the site, proximity to flood plains, geography and geology; and current Institutional Controls applicable to the site.

The Track 1 alternative for remedial action at the site is appropriate with respect to the proposed use and to land uses in the vicinity of the Site. The proposed use is consistent with the existing zoning designation for the property and is consistent with recent development patterns. The Site is surrounded by residential and commercial properties and both alternatives provide comprehensive protection of public health and the environment for these uses. Improvements in the current brownfield condition of the property achieved by the alternative is also consistent with the City's goals for cleanup of contaminated land and bringing such properties into productive reuse. The alternative is protective of natural resources and cultural resources. This RAWP will be subject to public review under the NYC BCP and will provide the opportunity for detailed public input on the land use factors described in this section. This public comment will be considered by OER prior to approval of this plan.

The alternative has the potential to utilize sustainable means to achieve the cleanup goals. This program contemplates the utilization of several green remediation methods that are compatible the alternative. The full list of green remediation activities considered in this program is included in the Sustainability Statement.

## **4.0 REMEDIAL ACTION**

### **4.1 SUMMARY OF PREFERRED REMEDIAL ACTION**

The preferred remedy listed below achieves protection of public health and the environment for the intended use of the property. The preferred remedial action alternative achieves all of the remedial action objectives established for the project and addresses applicable SCGs. The preferred remedial action alternative is effective in both the short-term and long-term and reduces mobility, toxicity and volume of contaminants. The preferred remedial action alternative

is cost effective, implementable and uses standards methods that are well established in the industry.

Remedial elements to be implemented at Site A will include:

1. Preparation of a Community Protection Statement and performance of all required NYC BCP citizen participation activities according to an approved Citizen Participation Plan (CPP).
2. Establishment of Track 1 Soil Cleanup Objectives (SCOs). The site already achieves Track 1 SCOs and removal action is not required.
3. Removal of an AST in the building basement and register as required by New York State laws and regulations.
4. Placement of a vapor barrier on the existing slab, placement of a new 2-inch layer of cement on the barrier, and operation of a positive pressure HVAC in the basement level to address soil vapor intrusion from offsite.
5. Screening during any basement excavations for indications of contamination by visual means, odor, and monitoring with a photo ionization detector (PID).
6. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas.
7. Performance of Community Air Monitoring Program for particulates and volatile organic carbon compounds.
8. Submission of a RAR which describes the remedial activities including any changes from this RAWP, certifies that the remedial requirements have or will be achieved, defines the Site boundaries, and describes any Engineering and Institutional Controls to be implemented at the Site.

Remedial elements to be implemented at Site B will include:

1. Preparation of a Community Protection Statement and performance of all required NYC BCP citizen participation activities according to an approved Citizen Participation Plan (CPP).
2. Establishment of Track 1 Soil Cleanup Objectives (SCOs).
3. Excavation and removal of soil/fill to a depth of 12-14 feet below street grade including 12-14 feet at Lot 36 and approximately 2 feet beneath existing basements at Lots 35 and 34. Application of Track 1 SCOs for soils that will not be excavated.
4. Construction of an engineered composite cover consisting of a 2-foot mat-slab under the Site.
5. Construction of a vapor barrier beneath the building slab and operation of a positive pressure HVAC in the building basement to address soil vapor intrusion from offsite.
6. Performance of Community Air Monitoring Program for particulates and volatile organic carbon compounds.
7. Collection and analysis of end-point samples to evaluate the performance of the remedy with respect to attainment of Track 1 SCOs.
8. Screening for indications of contamination by visual means, odor, and monitoring with a photo ionization detector (PID) of excavated soil/fill during all intrusive work.
9. Transportation and off-Site disposal of all soil/fill material at permitted facilities in accordance with all Federal, State and City laws and regulations for handling, transport, and disposal.
10. Sampling and analysis of excavated media as required by disposal facilities.
11. Appropriate segregation of excavated media for off-site disposal.
12. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas.
13. Implementation of storm-water pollution prevention measures.

14. Performance of all activities associated with the remedial action, including permitting requirements and pretreatment requirements, will be addressed in accordance with all applicable Federal, State and City laws and regulations.
15. Import of materials to be used for backfill and cover in compliance with OER approved plan and in accordance with all Federal, State and City laws and regulations.
16. Placement of backfill material in excavated areas as needed.
17. If Track 1 cannot be achieved, recording of a Declaration of Covenants and Restrictions that includes a full listing of Engineering Controls and Institutional Controls and notice that these controls must be maintained within a Site Management Plan to prevent future exposure to any residual contamination remaining at the Site.
18. If Track 1 cannot be achieved, establishment in a recorded Declaration of Covenants and Restrictions, a series of Institutional Controls on the Site, including: (1) compliance with the provisions of the recorded Declaration of Covenants and Restrictions; (2) compliance with provisions of the approved Site Management Plan; (3) operation and maintenance of Engineering Controls as specified in the Site Management Plan; (4) inspection and certification of all Engineering Controls at a frequency and in a manner defined in the Site Management Plan; (5) performance of environmental and public health monitoring as defined in the Site Management Plan; (6) reporting at a frequency and in a manner defined in the Site Management Plan; (7) protection of on-Site monitoring devices in a manner specified in the SMP; and (8) prohibition of discontinuation of Engineering Controls without an OER-approved amendment or extinguishment of the Declaration of Covenants and Restrictions.
19. If Track 1 cannot be achieved, establishment in a recorded Declaration of Covenants and Restrictions, a series of site restriction Institutional Controls on the Site, including: (1) prohibition of vegetable gardening and farming; (2) prohibition of the use of groundwater without treatment rendering it safe for the intended use; (3) prohibition on all disturbance of residual contaminated material unless it is conducted in accordance with the provisions in the Site Management Plan; and (4) prohibition on higher level of

land usage without an OER-approved amendment or extinguishment of this Declaration of Covenants and Restrictions.

20. Submission of a RAR which describes the remedial activities including any changes from this RAWP, certifies that the remedial requirements have or will be achieved, defines the Site boundaries, and describes any Engineering and Institutional Controls to be implemented at the Site.
21. If Track 1 cannot be achieved, submission of an approved Site Management Plan in the Remedial Action Report for long-term management of residual contamination, including plans for Institutional and Engineering Controls for: (1) inspection and certification, (2) monitoring, (3) operation and maintenance, and (4) reporting.

Remedial activities will be performed at the Site in accordance with this OER-approved RAWP. All deviations from the RAWP will be promptly reported to OER. Changes will be documented in the RAR.

#### **4.2 SOIL CLEANUP OBJECTIVES AND MATERIALS REMOVAL**

Site A already meets Track 1 SCOs. Track 1 cleanup standards will be applied to Site B. However, Track 4 cleanup standards are also proposed for Site B for this remedial project in the event that Track 1 SCOs cannot be achieved. The Track 4 Soil Cleanup Objectives (SCOs) for Site B are listed below. All soil samples that exceed the Track 1 SCOs proposed for this remedial action are highlighted in Table 2 and shown on a spider map in Figure 4. The map also shows the expected lateral extent of excavations proposed for removal under this remedial action.

The fallback Track 4 Site Cleanup Objectives for Church of Scientology Site B is:

<b>Contaminant</b>	<b>SCO</b>
Arsenic	16
Cadmium	4.3
Copper	270
Lead	700

Total Mercury	1.0
Total SVOCs	250
VOCs	6NYCRR Part 375-6.8 Track 2 Restricted Commercial SCOs

Soil and materials management on-Site and off-Site will be conducted in accordance with the soil management plan as described below. Any residual sources of contaminants (such as hotspots) identified during the remedial action will be identified by GPS or surveyed by a surveyor licensed to practice in the State of New York. This information will be provided on maps in the Remedial Action Report.

#### **4.3 ESTIMATED MATERIAL REMOVAL AND IMPORT QUANTITIES**

The total quantity of soil and fill material expected to be excavated from Site B and disposed off-sites is approximately 1,700 tons. Approximately 1,700 tons will be disposed as fill material will be disposed at a solid waste landfill.

The estimated quantity of soil to be imported into the Site for backfill is 100 tons.

#### **4.4 POST EXCAVATION END-POINT SAMPLING**

Soil and fill material to be removed from Site B under this remedial action will be performed in conjunction with remedial performance end-point sampling. Sampling will be performed promptly following materials removal and testing completed prior to Site development activities.

##### **4.4.1 End-Point Sampling Frequency**

End-point sampling frequency will consist of the following:

1. For excavations less than 20 feet in total perimeter, at least one bottom sample and one sidewall sample biased in the direction of surface runoff.
2. For excavations 20 to 300 feet in perimeter:
  - For surface removals, one sample from the top of each sidewall for every 30 linear feet of sidewall and one sample from the excavation bottom for every 900 square feet of bottom area.
  - For subsurface removals, one sample from each sidewall for every 30 linear feet of sidewall and one sample from the excavation bottom for every 900 square feet of bottom area.

Post-remediation sample locations and depth will be biased towards the areas and depths of highest contamination identified during previous sampling episodes unless field indicators such as field instrument measurements or visual contamination identified during the remedial action indicate that other locations and depths may be more heavily contaminated. In all cases, post-remediation samples will be biased toward locations and depths of the highest expected contamination.

End-point samples will be collected at the bottom of the Site B excavations.

#### **4.4.2 Analytical Methodology**

All end-point samples will be analyzed utilizing for trigger compounds using the following methodologies:

- volatile organic compounds (VOCs) by EPA Method 8260;
- semi-volatile organic compounds (SVOCs) by EPA Method 8270;
- Target Analyte List (TAL) metals; and
- pesticides/PCBs by EPA Method 8081/8082.

If required, groundwater samples will be analyzed for:

- VOCs by EPA Method 8260;
- SVOCs by EPA Method 8270;

- TAL metals, and
- Pesticides/PCBs by Method 8081/8082.

If required, soil gas samples will be analyzed for VOCs by EPA method TO-15.

If either LNAPL and/or DNAPL are detected a sample will be collected for characterization and “finger print analysis”.

#### **4.4.3 Reporting of End-Point Data in Remedial Action Report**

Chemical labs used for all end-point sample analytical results will be reported in the RAR. The RAR will provide a tabular and map summary of all end-point sample results.

## **5.0 REMEDIAL ACTION MANAGEMENT**

### **5.1 PROJECT ORGANIZATION**

Principal personnel who will participate in the remedial action include Paul I. Matli, Senior Project Manager and Rachel Ataman, Vice President.

### **5.2 PROGRAM OVERSIGHT**

The Professional Engineer (PE)/Qualified Environmental Professional (QEP) for this project is/are Mark E. Robbins.

### **5.3 SITE SECURITY**

Site access will be controlled by the Applicant through gated entrances to the fenced property. Barriers will be installed around work areas as needed to delineate and restrict access to the work area. For work areas of limited size, barrier tape will be sufficient to delineate and restrict access. For larger worker areas, temporary fencing will be provided.

### **5.4 WORK HOURS**

The hours for operation of remedial construction will conform to the New York City Department of Buildings construction code requirements or according to specific variances issued by that agency.

### **5.5 CONSTRUCTION HEALTH AND SAFETY PLAN (HASP)**

The Health and Safety Plan is included in Appendix 2. The Site Safety Coordinator will be Paul I. Matli. All remedial work performed under this RAWP will be in full compliance with all applicable laws and regulations, including Site and OSHA worker safety requirements and HAZWOPER requirements. Confined space entry, if any, will comply with all OSHA requirements and industry standards and will address potential risks. The parties performing the remedial construction work will ensure that performance of work is in compliance with the HASP and all applicable laws and regulations. The HASP pertains to all remedial and invasive work performed at the Site until the issuance of the Notice of Completion.

## **5.6 WORKER TRAINING AND MONITORING**

All field personnel involved in remedial activities will participate in all training required under 29 CFR 1910.120, includes 40-hour hazardous waste operator training and annual 8-hour refresher training. Site Safety Officer will be responsible for maintaining all workers training records.

All personnel entering the exclusion zone will be trained in the provisions of the HASP and be required to sign an HASP acknowledgment. Site-specific training will be provided to all field personnel. Additional safety training may be added depending on the tasks performed. Emergency telephone numbers will be posted at the site location before any remedial work begins. A safety meeting will be conducted before each shift begins. Topics to be discussed include task hazards and protective measures (physical, chemical, environmental); emergency procedures; PPE levels and other relevant safety topics. Meetings will be documented in a log book or specific form.

## **5.7 EMERGENCY CONTACT INFORMATION**

An emergency contact sheet with names and phone numbers is included in the HASP. That document will define the specific project contacts for use by OER and NYC DOHMH in the case of emergency.

## **5.8 COMMUNITY AIR MONITORING PLAN**

Real-time air monitoring for volatile organic compounds (VOCs) and particulate levels at the perimeter of the exclusion zone or work area will be performed. Continuous monitoring will be performed for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pit excavation or trenching, lagging, shoring and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be performed during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. Periodic monitoring during sample collection, for instance, will consist of taking a reading upon arrival at a sample location, monitoring while opening a well

cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. Depending upon the proximity of potentially exposed individuals, continuous monitoring may be performed during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence. Exceedences of action levels observed during performance of the Community Air Monitoring Plan (CAMP) will be reported to the OER Project Manager and included in the Daily Report.

### **5.8.1 VOC Monitoring, Response Levels, and Actions**

Volatile organic compounds (VOCs) will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis during invasive work. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities will resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shutdown.

All 15-minute readings must be recorded and be available for OER personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

### **5.8.2 Particulate Monitoring, Response Levels, and Actions**

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter ( $\text{mcg}/\text{m}^3$ ) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work will continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed  $150 \text{ mcg}/\text{m}^3$  above the upwind level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than  $150 \text{ mcg}/\text{m}^3$  above the upwind level, work will be stopped and a re-evaluation of activities initiated. Work will resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within  $150 \text{ mcg}/\text{m}^3$  of the upwind level and in preventing visible dust migration.

All readings will be recorded and be available for OER personnel to review.

## **5.9 AGENCY APPROVALS**

All permits or government approvals required for remedial construction have been or will be obtained prior to the start of remedial construction. Approval of this RAWP by OER does not constitute satisfaction of these requirements and will not be a substitute for any required permit.

## **5.10 SITE PREPARATION**

### **5.10.1 Pre-Construction Meeting**

OER will be invited to attend the pre-construction meeting at the Site with all parties involved in the remedial process prior to the start of remedial construction activities.

### **5.10.2 Mobilization**

The first step in site preparation is mobilization. Mobilization will be conducted as necessary for each phase of work at the Site. Mobilization includes field personnel orientation, equipment mobilization (entail securing all sampling equipment needed for the field investigation), marking/staking sampling locations and utility mark-outs. Each field team member will attend an orientation meeting to become familiar with the general operation of the Site, health and safety requirements, and field procedures.

### **5.10.3 Stabilized Construction Entrance**

Steps will be taken to ensure that trucks departing the site are not tracking soil off-Site. Such actions may include use of cleaned asphalt or concrete roads or use of stone or other aggregate-based egress paths between the truck wash and the property exit. Measures will be taken to ensure that adjacent roadways will be kept clean of project related soils, fill and debris.

### **5.10.4 Utility Marker Layouts, Easement Layouts**

The presence of utilities and easements on the Site will be fully investigated prior to the performance of invasive work such as excavation or drilling under this plan by using, at a minimum, the One-Call System (811). Underground utilities may pose an electrocution, explosion, or other hazard during excavation or drilling activities. Utility companies and other

responsible authorities will be contacted to locate and mark the locations, and a copy of the Markout Ticket will be retained by the contractor prior to the start of drilling, excavation or other invasive subsurface operations. Overhead utilities may also be present throughout the anticipated work zones. Electrical hazards associated with drilling in the vicinity of overhead utilities will be minimized by maintaining a safe distance between overhead power lines and drill rig mast

Proper safety and protective measures pertaining to utilities and easements, and compliance with all laws and regulations will be employed during invasive and other work contemplated under this RAWP. The integrity and safety of on-Site and off-Site structures will be maintained during all invasive, excavation or other remedial activity performed under the RAWP.

#### **5.10.5 Dewatering**

Excavations that extend below the water table may require dewatering. Submersible pumps will be used to extract groundwater from gravel lined sumps in the excavations or a system of well points will be used for groundwater extraction. Extracted groundwater will be conveyed to a storage tank or treatment system.

Depending on the selected discharge option, a NYC DEP sewer use permit will be obtained to discharge treated groundwater to the sewer system.

#### **5.10.6 Equipment and Material Staging**

Equipment and materials will be stored and staged in a manner that is consistent with City, State, and Federal regulations.

A Site map showing the location(s) of proposed equipment and material staging areas, truck wash, stockpile areas, and other pertinent remedial management features is shown in **Figure 5**.

#### **5.10.7 Decontamination Area and Truck Wash**

A decontamination area will be established on the project site.

A truck decontamination pad will be set up close to Site exit. Before exiting the NYC BCP Site, transport vehicles will be required to stop at the decontamination pad and will be inspected for evidence of contaminated soil on the undercarriage, body, and wheels. Soil will be removed on the decontamination pad. After wetting with potable water, brooms or shovels will be utilized for the bulk removal of soil from vehicles and equipment. The decontamination procedure for the removal of the remaining soil and liquids will consist of washing with potable water. Odor suppressant foam will be applied, if necessary, to control emissions from soil in trucks.

Soil generated by the decontamination process will be stockpiled and tested, and based on the results of the testing will be either reused on-Site or transported off-Site for disposal.

## **5.11 DEMOBILIZATION**

Demobilization will include:

- As necessary, restoration of temporary access areas and areas that may have been disturbed to accommodate support areas (e.g., staging areas, decontamination areas, storage areas, temporary water management area[s], and access area);
- Removal of sediment and erosion control measures and disposal of materials in accordance with applicable laws and regulations;
- Equipment decontamination, and;
- General refuse disposal.

Equipment will be decontaminated and demobilized at the completion of all field activities. Investigation equipment and large equipment (e.g., soil excavators) will be decontaminated on the decontamination pad as necessary. In addition, all investigation and remediation derived waste (IDW) e.g., decontamination fluids, drill cuttings, recirculation water, well development purge water, etc. will be containerized in 55-gallon drums and staged for characterization at a secured location on-Site and will be appropriately disposed.

## **5.12 TRAFFIC CONTROL**

Trucks leaving the NYC BCP Site will proceed without stopping in the neighborhood to prevent neighborhood impacts. The planned route on local roads for waste transport vehicles is presented on **Figure 6**.

## **5.13 REPORTING**

All required reports will be included as an Appendix in the Remedial Action Report.

### **5.13.1 Daily Reports**

Daily reports providing a summary of activities for each day of remedial work will be emailed to the OER Project Manager by the end of the following day. Those reports will include:

- A statement of the activities and an update of progress made;
- Locations of work performed;
- Quantities of material imported and exported from the Site;
- Status of on-Site soil/fill stockpiles;
- A summary of all citizen complaints, with relevant details (basis of complaint; actions taken; etc.);
- A summary of CAMP excursions;
- Photographs of notable Site conditions and activities.
- OER assigned project number.

The frequency of the reporting period may be revised in consultation with OER project manager based on planned project tasks. Daily email reports are not intended to be the primary mode of communication for notification to OER of emergencies (accidents, spills), requests for changes to the RAWP or other sensitive or time critical information. However, such information will be included in the daily reports. Emergency conditions and changes to the RAWP will be communicated directly to the OER project manager by personal communication.

#### **5.14 RECORD KEEPING AND PHOTO-DOCUMENTATION**

Job-site record keeping for all remedial work will be performed. These records will be maintained on-Site at all times during the project and will be available for inspection by OER staff. Representative photographs will be taken of the Site prior to any remedial activities and during all major remedial activities to illustrate remedial program elements and all contaminant source areas. Select photographs will be submitted everyday along with the daily reports. Photographs will be properly tagged and submitted at the completion of the project in the RAR on electronic media (jpeg files).

#### **5.15 COMPLAINT MANAGEMENT**

All complaints from citizens will be promptly notified to OER by phone and email. Complaints will be promptly addressed and will also be reported to OER in daily reports. These reports will include the nature of the complaint, the party providing the complaint, and the actions taken to resolve any problems. Complaints from the public will be addressed as appropriate through modifications to the remedial program.

#### **5.16 DEVIATIONS FROM THE REMEDIAL ACTION WORK PLAN**

All changes to the RAWP will be reported to the OER Project Manager and will be documented in daily reports and in the Remedial Action Report. The process to be followed if there are any deviations from the RAWP, at a minimum, will include a written submission to the OER with the following information:

- A request for OER approval regarding the deviation.
- Reasons for deviating from the approved RAWP;
- Effect of the deviations on overall remedy;

## **6.0 SOILS/MATERIALS MANAGEMENT PLAN**

### **6.1 SOIL SCREENING METHODS**

Visual, olfactory and PID soil screening and assessment will be performed under the supervision of a Qualified Environmental Professional and will be reported in the RAR. Soil screening will be performed during all excavation and invasive work performed during the remedy and development phases, including excavations for foundations and utility work, prior to issuance of the Notice of Completion. It will be the responsibility of the PE/QEP certifying the remedy to provide technically competent field staff with proper experience to oversee all excavation activity. A description of experience of field staff will be provided to OER upon request.

### **6.2 STOCKPILE METHODS**

Excavated soil from suspected areas of contamination and contaminated materials from different sources (e.g., hot spots, USTs, drains, etc.) will be stockpiled separately and will be segregated from other soil and construction materials. Soils with stumps, roots, and related matter also will be stockpiled separately from other soil and construction materials at the Site.

Stockpiles will be used only when necessary and will be removed as soon as practicable. While stockpiles are in place, they will be inspected daily, and before and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by OER. Excavated soils will be stockpiled on double layers of minimum of 8-mil sheeting, will be kept covered at all times with appropriately anchored plastic sheeting, and will be routinely inspected. Broken or ripped tarps will be promptly replaced. Stockpiles of excavated soils and other materials shall be located at least of 50 feet from the property boundaries, where possible. Hay bales will surround soil stockpiles except for areas where access by equipment is required. Silt fencing and, hay bales will be used as needed near catch basins, surface waters and other discharge points. Soil stockpile areas will be appropriately graded to control run-off in accordance with a Stormwater Pollution Prevention Plan (SWPPP) for the Site.

### **6.3 CHARACTERIZATION OF EXCAVATED MATERIALS**

Excavated materials for disposal offsite will be characterized in accordance with requirements of the disposal facility.

### **6.4 MATERIALS EXCAVATION, LOAD-OUT AND DEPARTURE**

The PE/QEP will oversee all invasive work and the excavation and load-out of all excavated material and will ensure that there is a party responsible for the safe execution of all invasive and other work performed under this work plan.

The PE/QEP will ensure that Site development activities will not interfere with, or otherwise impair or compromise the remedial activities proposed in this RAWP. Development-related grading cuts will not interfere with, or otherwise impair or compromise, the performance of remediation required by this plan.

The presence of utilities and easements on the Site has been investigated by the PE/QEP who will ensure that any identified risks from work proposed under this plan are properly addressed by appropriate parties.

Loaded vehicles leaving the Site will comply with all applicable materials transportation requirements (including appropriate tarping, secure covering, manifests, and placards) in accordance with appropriate Federal, State, and City laws and regulations.

A decontamination pad will be maintained on-Site and the PE/QEP will be responsible for ensuring that all loaded outbound trucks are cleaned before leaving the Site. Locations where vehicles exit the Site shall be inspected daily for evidence of off-Site soil tracking. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials. The PE/QEP will be responsible for ensuring that all egress points for truck and equipment transport from the Site will be kept clean of Site-derived materials during Site remediation and development.

Open and uncontrolled mechanical processing of historical fill and contaminated soil on-Site will not be performed without prior OER approval.

## **6.5 OFF-SITE MATERIALS TRANSPORT**

Loaded vehicles leaving the Site will comply with all applicable materials transportation requirements (including appropriate tarping, secure covering, manifests, and placards) in accordance with City, State, and Federal laws and regulations, including use of licensed haulers in accordance with 6 NYCRR Part 364. Loose or incomplete truck covers will be prohibited. If loads contain wet material capable of causing leakage from trucks, truck liners will be used. Queuing of trucks will be performed on-Site, when possible in order to minimize off Site disturbance. Off-Site queuing will be minimized.

Outbound truck transport routes are shown in Figure 6. This routing takes into account the following factors: (a) limiting transport through residential areas and past sensitive sites; (b) use of City mapped truck routes; (c) minimizing off-Site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport. To the extent possible, all trucks loaded with Site materials will travel from the Site using these truck routes. Trucks will not stop or idle in the neighborhood after leaving the project Site.

## **6.6 MATERIALS DISPOSAL OFF-SITE**

The following documentation will be established and reported by the PE/QEP for each disposal destination used in this project to document that the disposal of regulated material exported from the Site conforms with all applicable laws: (1) a letter from the PE/QEP or Enrollee to each disposal facility describing the material to be disposed and requesting written acceptance of the material. This letter will state that material to be disposed of is regulated material generated at an environmental remediation Site in Manhattan, New York City under a governmental remediation program. The letter will provide the project identity and the name and phone number of the PE/QEP or enrollee. The letter will include as an attachment a summary of all chemical data for the material being transported (including site characterization data); and (2) a letter from each disposal facility stating it is in receipt of the correspondence (above) and is approved to accept the material. These documents will be included in the RAR.

The Remedial Action Report will include an itemized account of the destination of all material removed from the Site during this remedial action. Documentation associated with

disposal of all material will include records and approvals for receipt of the material. This information will also be presented in the RAR.

The proposed disposal locations for Site-derived impacted materials are listed in **Table 3**. Additional disposal locations established at a later date will be reported promptly to the OER Project Manager.

**Table 3: Waste Soil Disposal Details**

<u>Disposal Facility</u>	<u>Waste Type</u>	<u>Estimated Quantities</u>
Soil Safe	Contaminated Soil, Fill material from Site B	1,700 tons

All impacted soil/fill or other waste excavated and removed from the Site will be managed as regulated material and will be disposed in accordance with all City, State and Federal laws and regulations. Historic fill and contaminated soils taken off-Site will be handled, as solid waste and will not be disposed at a Part 360-16 Registration Facility (also known as a Soil Recycling Facility).

Unregulated off-Site management of materials from these Sites is prohibited.

Waste characterization will be performed for off-Site disposal in a manner required by the receiving facility and in conformance with applicable permits. Waste characterization sampling and analytical methods, sampling frequency, analytical results and QA/QC will be reported in the RAR. A Bill of Lading system or equivalent to oversee off-Site transportation of exported materials is required. This information will be reported in the RAR. Hazardous wastes derived from on-Site will be stored, transported, and disposed of in full compliance with applicable City, State, and Federal laws and regulations.

**6.7 MATERIALS REUSE ON-SITE**

Soil and fill that is derived from the property that meets the soil cleanup objectives established for the property will be reused on-Site, subject to approval by OER. The soil cleanup objectives for on-Site reuse are listed in Table 1. ‘Reuse on-Site’ means material that is excavated during the remedy or development, does not leave the property, and is relocated within

the same property covered by the NYC BCP agreement and subject to Engineering and Institutional Controls. The PE/QEP will ensure that reused materials are segregated from other materials to be exported from the Site and that procedures defined for material reuse in this RAWP are followed.

Only native or virgin soil can be placed within the top two feet of the surface beneath the courtyard area and beneath the ornamental flower, grass, and pavers in the recreation area. Stockpiled backfill material will be maintained on-Site separate from the areas of active remediation work. The stockpile size will be limited to 1,000 cubic yards or less.

Organic matter (wood, roots, stumps, etc.) or other waste derived from clearing and grubbing of the Site will not be buried on-Site. Soil or fill excavated from the site for grading or other purposes will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

## **6.8 FLUIDS MANAGEMENT**

All liquids to be removed from the Site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable City, State, and Federal laws and regulations. Discharge to the New York City sewer represents the preferred method for management of dewatering fluid during construction. Liquids discharged into the New York City sewer system will receive prior approval by New York City Department of Environmental Protection (NYC DEP). Discharge to the New York City sewer system will require an authorization and sampling data demonstrating that the groundwater meets the City's discharge criteria. The NYC DEP regulates discharges to the New York City sewers under New York City Department of Environmental Protection's Title 15, Rules of the City of New York (RCNY) Chapter 19. The dewatering fluid will be pretreated as necessary to meet the New York City Discharge criteria. If discharge to the City sewer system is not appropriate, the dewatering fluids will be managed by transportation and disposal at an off-Site treatment facility.

Discharge of water generated during remedial construction to surface waters (i.e. a stream or river) is prohibited without a SPDES permit issued by New York State.

## **6.9 DEMARCATION**

After completion of hotspot removal and any other invasive remedial activities, and prior to backfilling, the top of the residual soil/fill will be defined by one of three methods: (1) placement of a demarcation layer. The demarcation layer will consist of orange snow fencing geosynthetic material or equivalent material to be placed on the surface of residual soil/fill to provide an observable reference layer. A map showing the approximate depth of the demarcation layer throughout the Site will be provided in the SMP; or (2) a land survey will be performed by a surveyor licensed by the State of New York. The survey will define the top elevation of residual soil/fill before the placement of cover soils, pavement and associated sub-soils, or other materials or structures or, (3) all materials beneath the approved cover will be considered impacted and subject to site management after the remedy is complete. Demarcation may be established by one or any combination of these three methods. A map showing the method of demarcation for the Site and all associated documentation will be presented in the RAR.

This demarcation will constitute the top of the residuals management horizon. Materials within this horizon require adherence to special conditions during future invasive activities as defined in the Site Management Plan. A map showing the approximate elevation of the demarcation will be included in the Remedial Action Report and the Site Management Plan.

## **6.10 IMPORT OF BACKFILL SOIL FROM OFF-SITE SOURCES**

This Section presents the requirements for imported fill materials to be used below the cover layer and within the clean soil cover layer. All imported soils will meet OER-approved backfill and cover soil quality objectives for this Site. The backfill and cover soil quality objectives are listed in **Table 1**.

An investigation will be performed to evaluate sources of potential fill to be imported to the Site, and will include an examination of each source site's location, current and historical use(s), and any applicable documentation. Material from industrial sites, spill sites, other environmental remediation sites or other potentially contaminated sites will not be imported to the Site.

The following potential sources may be used pending attainment of backfill and cover soil quality objectives:

- Clean soil from construction projects at non-industrial sites in compliance with applicable laws and regulations;
- Clean soil from roadway or other transportation-related projects in compliance with applicable laws and regulations;
- Recycled concrete aggregate (RCA) from facilities permitted or registered by, and in full compliance with the regulations of NYS DEC.

All materials received for import onto the Site will be approved by the PE/QEP and will be in compliance with provisions in this RAWP. The RAR will report the source of the fill, evidence that an inspection was performed on the source, chemical sampling results, frequency of testing, and a Site map indicating the locations where backfill was placed.

#### **6.10.1 Source Screening and Testing**

Inspection of imported fill material will include visual, olfactory and PID screening for evidence of contamination. Materials imported to the Site will be subject to inspection, as follows:

- Trucks with imported fill material will be securely covered with tight fitting covers and will enter the Site at designated locations;
- The PE/QEP is responsible to ensure that every truck load of imported material will be inspected for evidence of contamination;
- Fill material will be free of solid waste including pavement materials, and debris, stumps, roots, and other organic matter, as well as ashes, oil and perishables or foreign matter; and
- Fill material will not contain any material greater than 12 inches in its greatest dimension.

Composite samples of imported material will be taken at a frequency of one sample for every 500 cubic yards of material. Once it is determined that the fill material is non-hazardous, and

lacks petroleum contamination, the fill material will be loaded onto trucks for delivery to the Site.

Recycled concrete aggregate (RCA) may be imported from facilities permitted or registered by, and in full compliance with the regulations of NYSDEC. Facilities will be identified in the RAR. The PE/QEP is responsible to ensure that the facility is compliant with 6NYCRR Part 360 registration and permitting requirements for the period of acquisition of RCA. RCA imported from compliant facilities will not require additional testing, unless required by NYSDEC under its terms for operation of the facility. RCA imported to the Site must be derived from recognizable and uncontaminated concrete. RCA material is not acceptable for, and will not be used as, cover material.

#### **6.11 STORM-WATER POLLUTION PREVENTION**

All applicable laws and regulations pertaining to storm-water pollution prevention will be addressed during the remedial program. Erosion and sediment control measures identified in this RAWP (silt fences and barriers, and hay bale checks) will be installed around the entire perimeter of the remedial construction area and inspected once a week and after every storm event to ensure that they are operating appropriately. Where discharge locations or points are accessible, they will be inspected to determine whether erosion control measures are effective in preventing significant impacts to receptors. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by OER. All necessary repairs shall be made immediately. Accumulated sediments will be removed as required to keep the barrier and hay bale check functional. Undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials. Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

#### **6.12 CONTINGENCY PLAN**

A contingency plan is developed for the remedial construction to address the discovery of unknown structures or contaminated media during excavation. Identification of unknown or unexpected contamination source areas during invasive Site work will be promptly communicated to OER's Project Manager. Petroleum spills will be reported to the NYS DEC

Spill Hotline. These findings will be included in the daily report. If previously unidentified contaminant sources are found during on-Site remedial excavation or development-related excavation, sampling will be performed on contaminated source material and surrounding soils and reported to OER. Chemical analytical testing will be performed for TAL metals, TCL volatiles and semi-volatiles, TCL pesticides and PCBs, as discussed above, as appropriate.

## **6.13 ODOR, DUST AND NUISANCE CONTROL**

### **6.13.1. Odor Control**

All necessary means will be employed to prevent on- and off-Site odor nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; and (c) use of foams to cover exposed odorous soils. If odors develop and cannot otherwise be controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-Site disposal; and (e) use of chemical odorants in spray or misting systems.

This odor control plan is capable of controlling emissions of nuisance odors. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. OER will be notified of all odor complaint events. Implementation of all odor controls, including halt of work, will be the responsibility of the PE/QEP certifying the Remedial Action Report.

### **6.13.2 Dust Control**

Dust management during invasive on-Site work will include, at a minimum:

- Use of a dedicated on-Site water spray methodology for roads, excavation areas and stockpiles.
- Use of properly anchored tarps to cover stockpiles.
- Use of extra care during dry and high-wind periods.
- Use of gravel or recycled concrete aggregate on egress roadways to provide a clean and dust-free road surface.

This dust control plan is capable of controlling emissions of dust. If nuisance dust emissions are identified, work will be halted and the source of dusts will be identified and corrected. Work will not resume until all nuisance dust emissions have been abated. OER will be notified of all dust complaint events. Implementation of all dust controls, including halt of work, will be the responsibility of the PE/QEP responsible for certifying the Remedial Action Report.

### **6.13.3 Other Nuisances**

Noise control will be exercised during the remedial program. All remedial work will conform, at a minimum, to NYC noise control standards.

Rodent control will be provided during Site clearing and grubbing, and during the remedial program, as necessary.

## **7.0 ENGINEERING AND INSTITUTIONAL CONTROLS**

A Track 1 cleanup is proposed for Site A and Site B. Site A has already achieved Track 1 SCOs. If Site B does not achieve Track 1 cleanup, Engineering Controls (EC) and Institutional Controls (IC) have been incorporated in this remedial action to manage any residual contamination and render the Site protective of public health and the environment. These ECs and ICs are described hereafter. Long-term employment of EC/ICs will be required by a Declaration of Covenant and Restrictions (DCR) assigned to the property by the title holder and will be implemented under a site-specific Site Management Plan (SMP) that will be included in the RAR.

### **7.1 INSTITUTIONAL CONTROLS**

Institutional Controls can generally be subdivided into ICs that support the ECs listed in section 7.2 of this RAWP including those required to implement, maintain, monitor and report on those systems, and ICs that place general restrictions on Site usage. The ICs in this remedial action that support ECs are:

- A DCR including a description of all ICs and ECs and noting the requirements of the SMP will be registered with the City Register or county clerk, as appropriate. The DCR will note that the property owner and property owner's successors and assigns will comply with the DCR and all elements of the approved SMP;
- A SMP will be submitted in the RAR for approval by OER that provides procedures for appropriate operation, maintenance, monitoring, inspection, reporting and certification of all ECs.
- Grantor agrees to submit to OER a periodic written statement that certifies that: (1) controls employed at the Site are unchanged from the previous certification or that any changes to the controls were approved by OER; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. OER retains the right to enter the Site in order to evaluate the continued maintenance of any and all controls. This

certification shall be submitted annually, or an alternate period of time that OER may allow. This certification must comply with RCNY §43-1407(1)(3).

Under this remedial action, the Site will be subject to a series of ICs in the form of site restrictions and requirements. These include:

- Vegetable gardens and farming on the Site are prohibited;
- Use of groundwater underlying the Site is prohibited without treatment rendering it safe for its intended use;
- All future activities on the Site that will disturb residual contaminated material must be conducted pursuant to the soil management provisions in the Site Management Plan;
- The Site will be used for commercial use only and will not be used for a higher level of use without prior notice to OER;

#### **7.1.1 Declaration of Covenants and Restrictions**

An OER-approved Declaration of Covenants and Restrictions (DCR) will be registered with the City Register or the country clerk, as appropriate to ensure that the grantor of the DCR and the grantor's successors and assigns implement the ICs and ECs required under this remedy. The registered DCR will be submitted as part of the Remedial Action Report. The DCR must be registered prior to OER issuance of the Notice of Completion.

#### **7.1.2 Site Management Plan**

Site Management is the last phase of remediation and begins with the approval of the Remedial Action Report and issuance of the Notice of Completion (NOC) for the Remedial Action. The Site Management Plan (SMP) describes appropriate methods and procedures to ensure implementation of all ECs and ICs that are required by the DCR and this RAWP. The Site Management Plan is submitted as part of the RAR but will be written in a manner that allows its use as an independent document. The Site Management Plan in the Remedial Action Report will include a monitoring plan for groundwater at the downgradient Site perimeter to evaluate Site-wide performance of the remedy. Site Management continues until terminated in writing by

OER. The property owner is responsible to ensure that all Site Management responsibilities defined in the DCR and the Site Management Plan are implemented.

The SMP will provide a detailed description of the procedures required to manage residual contamination left in place following completion of the remedial action in accordance with the BCA with OER. This includes: (1) development, implementation, and management of all ICs and ECs; (2) development and implementation of monitoring systems; (3) development of a plan to operate and maintain any treatment, collection, containment, or recovery systems; (4) submittal of reports, performance of inspections and certification of results, and demonstration of proper communication of Site information to OER; and (5) defining criteria for termination of treatment system operation.

To address these needs, the SMP will include four sections: (1) an Engineering and Institutional Control Plan for implementation and management of EC/ICs; (2) a Monitoring Plan for implementation of Site Monitoring; (3) an Operation and Maintenance Plan for implementation of remedial collection, containment, treatment, and recovery systems, and; (4) a Site Management Reporting Plan for submittal of data, information, recommendations, and certifications to OER. The SMP will be prepared in accordance with the requirements in NYS DEC DER-10 Technical Guidance for Site Investigation and Remediation and the guidelines provided by OER.

Site management activities, reporting, and EC/IC certification will be scheduled on a certification period basis. The certification period will be every two years. The Site Management Plan will be based on a calendar year and will be due for submission to OER by March 31 of the year following the reporting period.

## **7.2 ENGINEERING CONTROL SYSTEMS**

### **7.2.1 Composite Cover System**

Exposure to residual contaminated soils will be prevented by an engineered cover system that will be placed over the surface of the entire area of both Sites. This cover system will be comprised of the building slab beneath the entire property.

This cover system is as a permanent engineering control for the Sites. The Systems will remain in place and operational for the life of the building. An interim Soil Management Plan for any residual soil beneath the cover system will be included in the Site Management Plan and will outline the procedures to be followed in the event that the cover system and underlying residual contamination are disturbed after the remedial action is complete. Maintenance of this composite cover system will be described in the Site Management Plan in the RAR.

## 8.0 REMEDIAL ACTION REPORT

A Remedial Action Report (RAR) will be submitted to OER for the two sites following implementation of the remedial action defined in this RAWP. The RAR will document that the remedial work required under this RAWP has been completed and has been performed in compliance with this plan. The RAR will include:

- As-built drawings for all constructed remedial elements, required certifications, manifests, bills of lading and other written and photographic documentation of remedial work performed under this remedy;
- Site Management Plan if Track 1 SCO is not achieved;
- Description of any changes in the remedial action from the elements provided in the RAWP and associated design documents;
- Tabular summary of all performance evaluation sampling results and all material characterization results and other sampling and chemical analysis performed as part of the remedial action;
- Test results or other evidence demonstrating that remedial systems are functioning properly;
- Tabular summary and map of residual contamination that exceeds Track 1 and 2 6NYCRR Part 375-6.8 SCOs for restricted residential use;
- Account of the source area locations and characteristics of all contaminated material removed from the Site including excavated contaminated soil, historic fill, solid waste, hazardous waste, non-regulated material, and fluids, including the map(s) showing all source areas;
- Account of the disposal destination of all contaminated material removed from the Site and documentation associated with disposal of all material will include records and approvals for receipt of the material.
- Account of the origin and any required chemical quality testing for all material imported onto the Site.

- All reports and supporting material will be submitted in digital form (pdf format) and other digital formats as required by OER.

## **8.1 REMEDIAL ACTION REPORT CERTIFICATION**

The following certification will appear in front of the Executive Summary of the Remedial Action Report. The certification will include the following statements:

*I, Shaik A. Saad, am currently a registered professional engineer licensed by the State of New York. I had primary direct responsibility for implementation of the remedial program for the [220, 222, 228, 230, 232 East 125 Street] Site [Site Nos. 11CBCP004M and 11CBCP005M].*

*I, Mark E. Robbins, am a qualified Environmental Professional. I had primary direct responsibility for implementation of Remedial Action Work Plan.*

*I certify that the Site description presented in this RAR is identical to the Site descriptions and associated amendments presented in the Declaration of Covenants and Restrictions, the Site Management Plan, and the NYC Brownfield Cleanup Agreement for Site A and Site B (220, 222, 228, 230, 232 East 125 Street).*

*I certify that the OER-approved Remedial Action Work Plan dated November 2010 and Stipulations were implemented and that all requirements in those documents have been substantively complied with.*

*I certify that the remedial activities were observed by qualified professionals under my supervision and that the remediation requirements set forth in the Remedial Action Work Plan have been achieved.*

*I certify that the export of all contaminated soil, fill, liquids or other material from the property was performed in accordance with the Remedial Action Work Plan, and that the materials were taken to facilities licensed to accept this material in full compliance with Federal, State and City laws and regulations.*

*I certify that all import of soils from off-Site has been performed in a manner that is consistent with the methodology defined in the Remedial Action Work Plan.*

*I certify that all information and statements in this certification are true. I understand that a false statement made herein is punishable as Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.*

*Include below only if Track 1 is not achieved:*

*I certify that all use restrictions, Institutional Controls and Engineering Controls identified in the RAWP, and all operation and maintenance requirements applicable to the Site are contained in a Declaration of Covenants and Restrictions and that such declaration and covenant has been recorded.*

*I certify that a Site Management Plan is included in this RAR that provides for the continual and proper operation, maintenance, and monitoring of all Engineering Controls employed at the Site.*

## **9.0 SCHEDULE**

A Remedial Action Project Schedule is provided under Appendix 3.



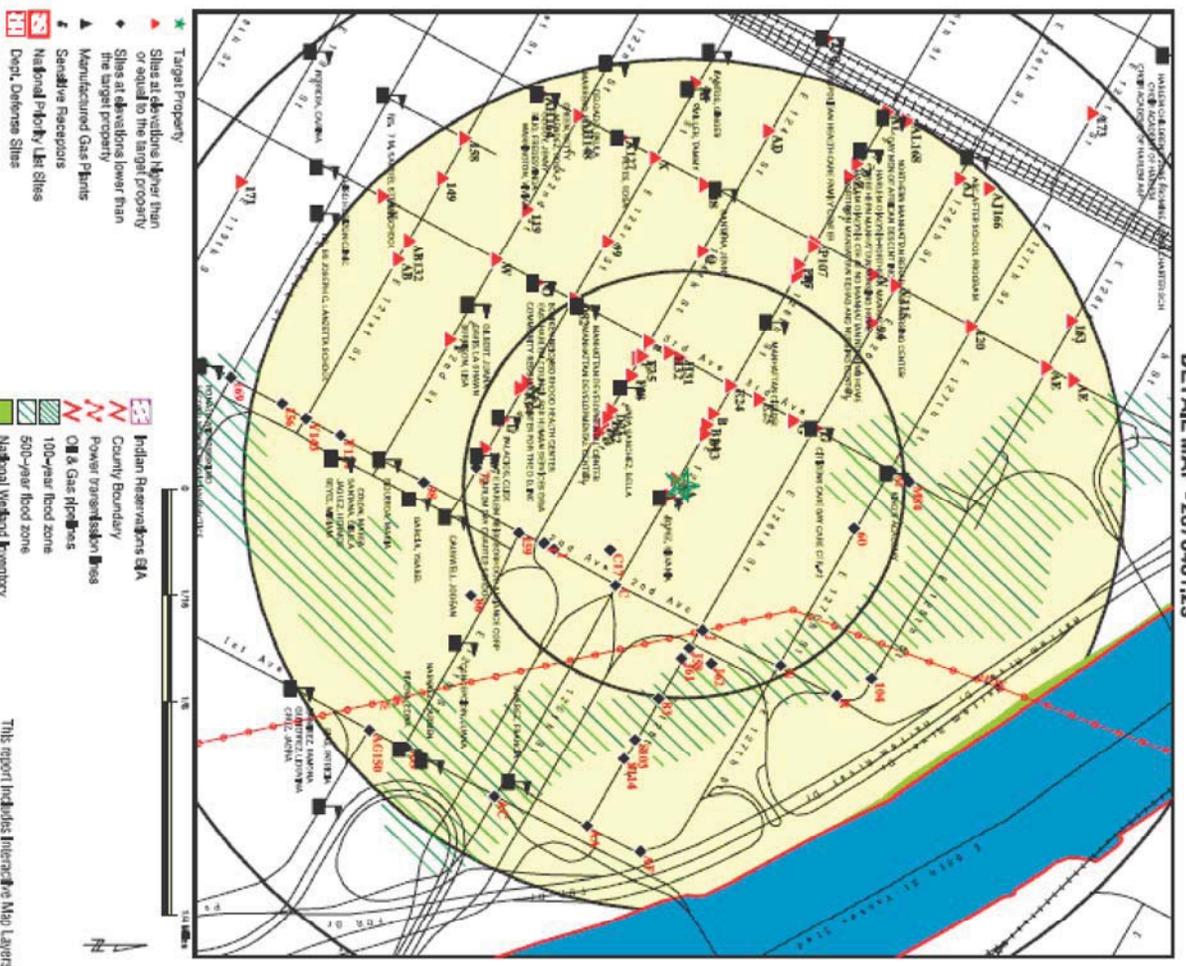
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 BROOKLYN, NEW YORK 11225  
 T (718) 636-0800 F (718) 636-0900

220-222-228-230-232  
 East 125th Street  
 New York, NY.

Drawn By: CQ  
 Reviewed By: MR  
 Approved By: MS  
 Date: 11/03/10  
 Scale: AS NOTED

TITLE:  
 FIGURE 2: SITE BOUNDARY AND SURROUNDING LAND USAGE MAP  
 WITH SENSITIVE RECEPTORS



ADJACENT 2-STORY  
COMMERCIAL  
(HARLEM TIMES & AUTO REPAIR)

ADJACENT 4-STORY  
ABANDONED BUILDING

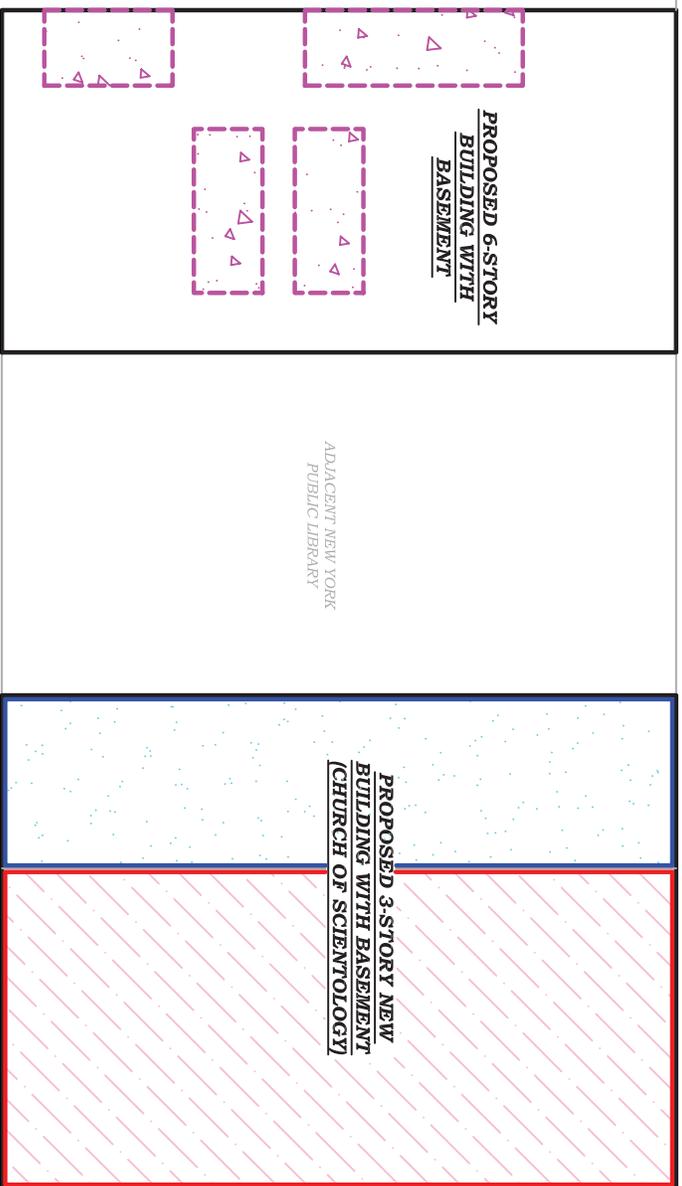
ADJACENT TRUCK  
PARKING LOT

ADJACENT BP  
GASOLINE STATION

EAST 125th STREET



SIDEWALK



**LEGEND:**

- AREA WILL BE EXCAVATED TO ABOUT 14 FEET BELOW GRADE
- SLAB WILL BE REMOVED AND REPLACED
- AREAS WHERE EXCAVATIONS WILL TAKE PLACE



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 New York, NY.

Drawn By:	CQ
Reviewed By:	MR
Approved By:	MS
Date:	11/09/10
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TITLE: **FIGURE 3: PROPOSED SITE DEVELOPMENT**

ADJACENT 2-STORY  
COMMERCIAL  
(HARLEM TIMES & AUTO REPAIR)

ADJACENT 4-STORY  
ABANDONED BUILDING

ADJACENT TRUCK  
PARKING LOT

ADJACENT BP  
GASOLINE STATION

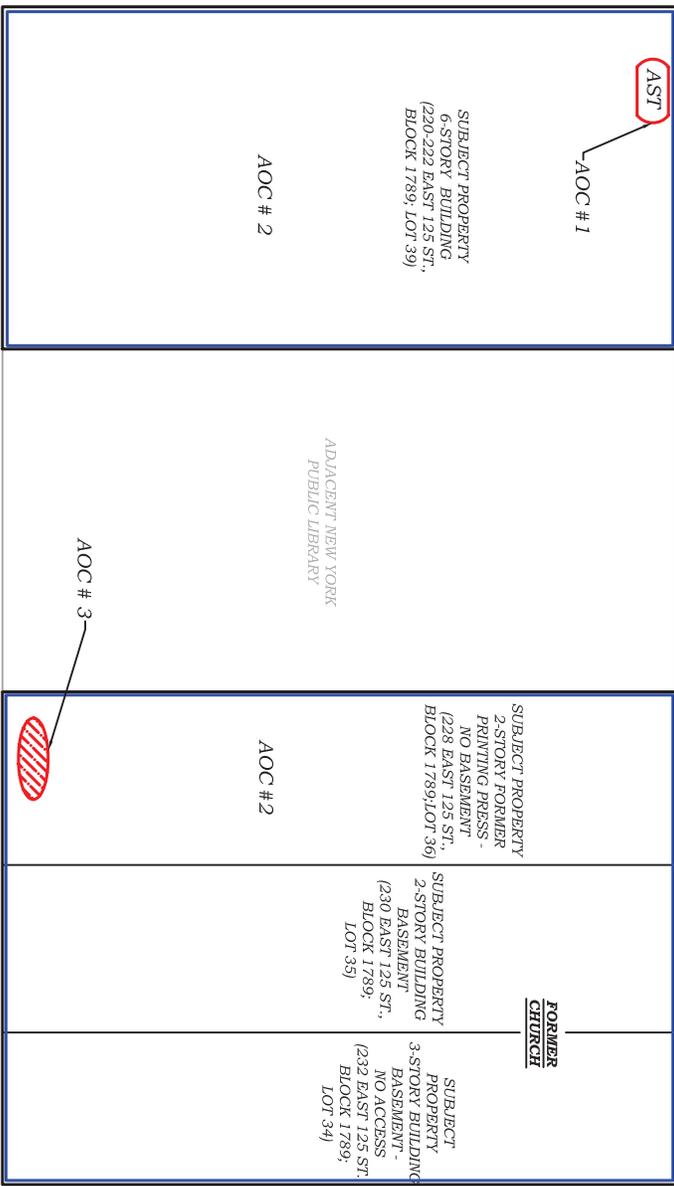


EAST 125th STREET

FILL PORT

SIDEWALK

ABANDONED  
FILL PORT



ADJACENT 4-STORY  
RESIDENTIAL  
(BAR & GRILL)

SUBJECT PROPERTY  
6-STORY BUILDING  
(220-222 EAST 125 ST.,  
BLOCK 1789; LOT 39)

AOC # 2

ADJACENT NEW YORK  
PUBLIC LIBRARY

SUBJECT PROPERTY  
2-STORY FORMER  
PRINTING PRESS -  
NO BASEMENT  
(228 EAST 125 ST.,  
BLOCK 1789; LOT 36)

AOC #2

FORMER  
CHURCH

SUBJECT PROPERTY  
2-STORY BUILDING  
BASEMENT  
(230 EAST 125 ST.,  
BLOCK 1789;  
LOT 35)

SUBJECT  
PROPERTY  
3-STORY BUILDING  
BASEMENT -  
NO ACCESS  
(232 EAST 125 ST.,  
BLOCK 1789;  
LOT 34)

LEGEND:

- AST ABOVEGROUND STORAGE TANK
- AREA OF CONCERN
- PRESENCE OF VOCs IN SOIL VAPOR AND INDOOR AIR
- VOC VOLATILE ORGANIC COMPOUNDS
- SEMIVOLATILE ORGANIC COMPOUND
- SVOC ABOVEGROUND STORAGE TANK
- AREA OF CONCERN
- AOC # 1 AST IN THE NORTHERN PORTION OF LOT 39
- AOC # 2 HISTORICAL USE OF LOT 36 AND 39
- AOC # 3 PETROLEUM STAINING IN LOT 36



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Drawn By:	CQ
Reviewed By:	MR
Approved By:	MS
Date:	11/09/10
Scale:	AS NOTED

TITLE: **FIGURE 4: AREAS OF CONCERN IDENTIFIED BY HISTORICAL INVESTIGATION**

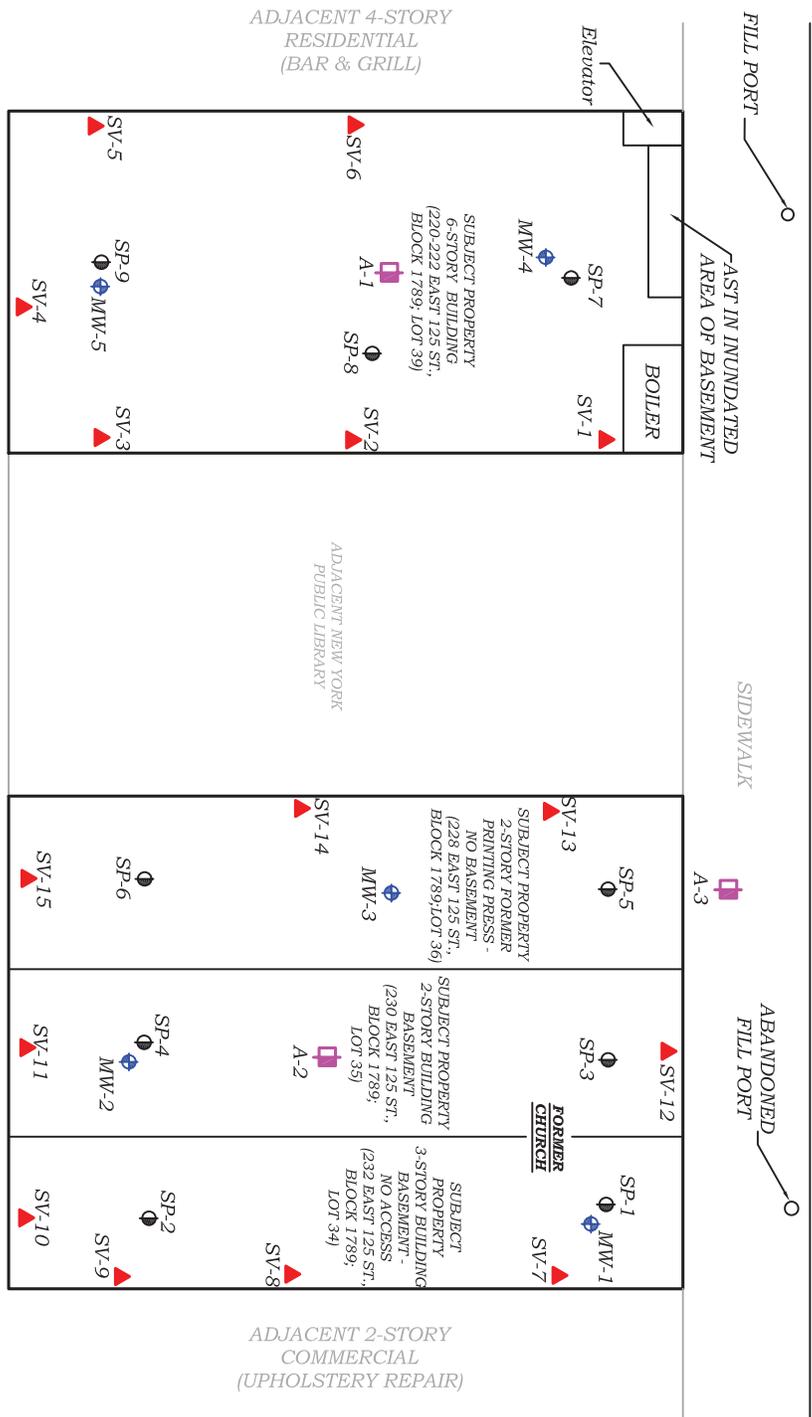
ADJACENT 2-STORY COMMERCIAL (HARLEM TIMES & AUTO REPAIR)

ADJACENT 4-STORY ABANDONED BUILDING

ADJACENT TRUCK PARKING LOT

ADJACENT BP GASOLINE STATION

EAST 125th STREET



ADJACENT 4-STORY RESIDENTIAL (BAR & GRILL)

ADJACENT 2-STORY COMMERCIAL (UPHOLSTERY REPAIR)

- LEGEND:
- SOIL PROBE LOCATION (SP)
  - ⊕ MONITORING WELL LOCATION (MW)
  - ▲ SOIL VAPOR IMPLANT LOCATION (SV)
  - ⊕ OUTDOOR AIR SAMPLE LOCATION (A3)
  - ⊕ INDOOR AIR SAMPLE LOCATION (A1, A2)



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Drawn By:	CQ
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Approved By:	MS
Date:	11/09/10
Scale:	AS NOTED

TITLE: **FIGURE 5: LOCATION OF SOIL BORINGS, WELLS, AIR AND SOIL VAPOR SAMPLES**

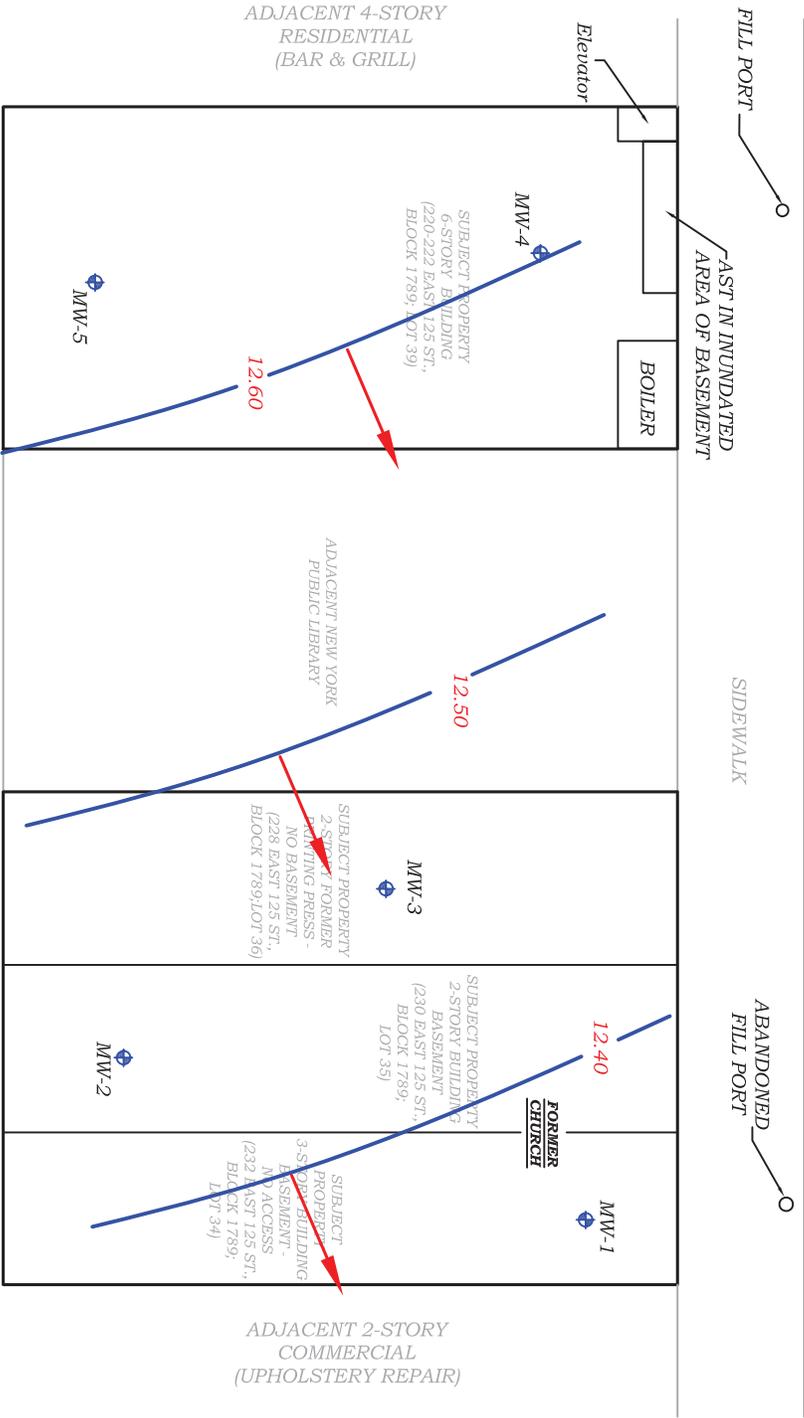
ADJACENT 2-STORY  
COMMERCIAL  
(HARLEM TIMES & AUTO REPAIR)

ADJACENT 4-STORY  
ABANDONED BUILDING

ADJACENT TRUCK  
PARKING LOT

ADJACENT BP  
GASOLINE STATION

EAST 125th STREET



C.I. = 0.10 FEET

Monitoring Well ID	Groundwater Elevation
MW-1	12.39
MW-2	12.41
MW-3	12.17
MW-4	12.60
MW-5	12.35

- LEGEND:
- ◆ MONITORING WELL LOCATION (MW)
  - C.I. CONTOUR INTERVAL



ADJACENT 4-STORY  
RESIDENTIAL  
(BAR & GRILL)

SUBJECT PROPERTY  
6-STORY BUILDING  
(220-222 EAST 125 ST.,  
BLOCK 1789; LOT 39)

ADJACENT NEW YORK  
PUBLIC LIBRARY

SUBJECT PROPERTY  
2-STORY  
PRINTING FORMER  
NO BASEMENT  
(228 EAST 125 ST.,  
BLOCK 1789; LOT 36)

SUBJECT PROPERTY  
2-STORY BUILDING  
BASEMENT  
(230 EAST 125 ST.,  
BLOCK 1789;  
LOT 35)

SUBJECT  
PROPERTY  
3-STORY BUILDING  
BASEMENT -  
NO ACCESS  
(232 EAST 125 ST.,  
BLOCK 1789;  
LOT 34)

ADJACENT 2-STORY  
COMMERCIAL  
(UPHOLSTERY REPAIR)



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Date:	11/09/10
Scale:	AS NOTED

TITLE: **FIGURE 6: GROUNDWATER LEVEL CONTOURS AND FLOW LINES**

ADJACENT 2-STORY COMMERCIAL (HARLEM TIMES & AUTO REPAIR)

ADJACENT 4-STORY ABANDONED BUILDING

ADJACENT TRUCK PARKING LOT

ADJACENT BP GASOLINE STATION

DEPTH	0' - 2'	UUSCO
SVOC	µg/Kg	UUSCO
Benzo (a) Anthracene	1,360	1,000
Chrysene	1,330	1,000
Benzo (b) Fluoranthene	1,240	1,000
Benzo (k) Fluoranthene	1,270	800
Benzo (a) Pyrene	1,320	1,000
Indeno (1,2,3-cd) Pyrene	841	500
Total SVOCs	13,629	NS

DEPTH	0' - 2'	UUSCO
SVOC	µg/Kg	UUSCO
Benzo (a) Anthracene	4,540	1,000
Chrysene	4,660	1,000
Benzo (b) Fluoranthene	3,680	1,000
Benzo (k) Fluoranthene	3,640	800
Benzo (a) Pyrene	3,890	1,000
Indeno (1,2,3-cd) Pyrene	1,820	500
Total SVOCs	50,617	NS

SP-3	0' - 2'	MAS
DEPTH	0' - 2'	SVOC

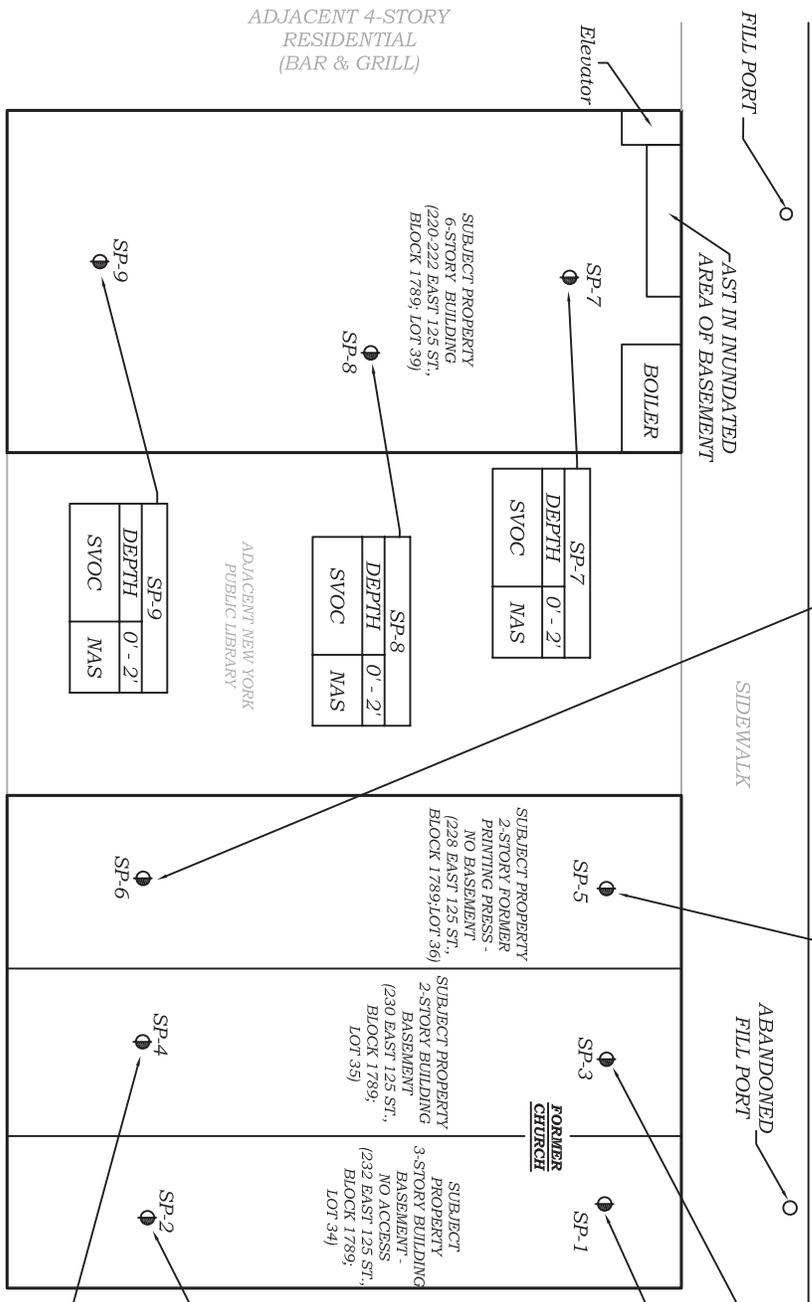
SP-1	0' - 2'	MAS
DEPTH	0' - 2'	SVOC

**LEGEND:**

- SOIL PROBE LOCATION (SP)
- SEMI VOLATILE ORGANIC COMPOUND MICROGRAMS PER KILOGRAM
- UNRESTRICTED USE OF SOIL CLEANUP OBJECTIVES
- SHADED VALUES EXCEED UUSCO
- NONE ABOVE STANDARDS

SP-2	0' - 2'	MAS
DEPTH	0' - 2'	SVOC

SP-4	0' - 2'	MAS
DEPTH	0' - 2'	SVOC



SUBJECT PROPERTY  
6-STORY BUILDING  
(220-222 EAST 125 ST.,  
BLOCK 1789; LOT 39)

SP-7	0' - 2'	MAS
DEPTH	0' - 2'	SVOC

SP-8	0' - 2'	MAS
DEPTH	0' - 2'	SVOC

SUBJECT PROPERTY  
2-STORY FORMER  
PRINTING PRESS -  
NO BASEMENT  
(228 EAST 125 ST.,  
BLOCK 1789; LOT 36)

SP-5	0' - 2'	MAS
DEPTH	0' - 2'	SVOC

SUBJECT PROPERTY  
2-STORY BUILDING  
BASEMENT  
(230 EAST 125 ST.,  
BLOCK 1789;  
LOT 35)

**FORMER CHURCH**

SUBJECT PROPERTY  
3-STORY BUILDING  
BASEMENT -  
NO ACCESS  
(232 EAST 125 ST.,  
BLOCK 1789;  
LOT 34)

SP-1	0' - 2'	MAS
DEPTH	0' - 2'	SVOC

SUBJECT PROPERTY  
2-STORY BUILDING  
BASEMENT  
(230 EAST 125 ST.,  
BLOCK 1789;  
LOT 35)

SUBJECT PROPERTY  
3-STORY BUILDING  
BASEMENT -  
NO ACCESS  
(232 EAST 125 ST.,  
BLOCK 1789;  
LOT 34)



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 Reviewed By: MR  
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 Date: 11/09/10  
 Scale: AS NOTED

TITLE: **FIGURE 7: EXCEEDENCE OF TRACK 1 SOIL CLEANUP OBJECTIVES**

ADJACENT 2-STORY  
COMMERCIAL  
(HARLEM TIMES & AUTO REPAIR)

ADJACENT 4-STORY  
ABANDONED BUILDING

ADJACENT TRUCK  
PARKING LOT

ADJACENT BP  
GASOLINE STATION

**EAST 125th STREET**

MW-4	
METALS	µg/L
Aluminum	2,850
Iron	2,070
	NYSDEC GQS
	2,000
	600

MW-1	
METALS	NAS

FILL PORT

SIDEWALK

ABANDONED  
FILL PORT

AST IN INUNDATED  
AREA OF BASEMENT

Elevator

BOILER

ADJACENT 4-STORY  
RESIDENTIAL  
(BAR & GRILL)

SUBJECT PROPERTY  
6-STORY BUILDING  
(220-222 EAST 125 ST.,  
BLOCK 1789; LOT 39)

ADJACENT NEW YORK  
PUBLIC LIBRARY

SUBJECT PROPERTY  
2-STORY FORMER  
PRINTING PRESS -  
NO BASEMENT  
(228 EAST 125 ST.,  
BLOCK 1789; LOT 30)

SUBJECT PROPERTY  
2-STORY BUILDING  
BASEMENT  
(230 EAST 125 ST.,  
BLOCK 1789;  
LOT 39)

SUBJECT  
PROPERTY  
3-STORY BUILDING  
BASEMENT -  
NO ACCESS  
(232 EAST 125 ST.,  
BLOCK 1789;  
LOT 34)

MW-3	
METALS	NAS

MW-5	
METALS	NAS

MW-2	
METALS	NAS

MW-2	
METALS	NAS

LEGEND:  
 MONITORING WELL LOCATON (MW)  
 µg/L MICROGRAMS PER LITER  
 GQS GROUNDWATER QUALITY STANDARDS  
 NAS NONE ABOVE STANDARDS  
 SHADED VALUES EXCEEDED GQS



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Drawn By:	CQ
Reviewed By:	MR
Approved By:	MS
Date:	11/09/10
Scale:	AS NOTED

TITLE:  
**FIGURE 8: EXCEEDENCE OF NEW YORK STATE GROUNDWATER STANDARDS**



EAST 125th STREET

SV-14	CHLORINATED COMPOUNDS	µg/m <sup>3</sup>
	TLE	9.76
	PERC	0.460

SV-13	CHLORINATED COMPOUNDS	µg/m <sup>3</sup>
	TLE	13.0
	PERC	15.9

SV-12	CHLORINATED COMPOUNDS	µg/m <sup>3</sup>
	TLE	349
	PERC	14.4



SV-6	CHLORINATED COMPOUNDS	ND
------	-----------------------	----

SV-5	CHLORINATED COMPOUNDS	µg/m <sup>3</sup>
	TLE	0.560
	PERC	0.540

SV-4	CHLORINATED COMPOUNDS	ND
------	-----------------------	----

SV-3	CHLORINATED COMPOUNDS	µg/m <sup>3</sup>
	TLE	0.400
	PERC	0.620

SV-15	CHLORINATED COMPOUNDS	µg/m <sup>3</sup>
	TLE	10.1
	PERC	1.17

SV-11	CHLORINATED COMPOUNDS	µg/m <sup>3</sup>
	TLE	90.8
	PERC	7.16

SV-10	CHLORINATED COMPOUNDS	µg/m <sup>3</sup>
	TLE	12.2
	PERC	8.46

SV-2	CHLORINATED COMPOUNDS	ND
------	-----------------------	----

SV-14	CHLORINATED COMPOUNDS	µg/m <sup>3</sup>
	TLE	10.1
	PERC	1.17

SV-8	CHLORINATED COMPOUNDS	µg/m <sup>3</sup>
	TLE	2.54
	PERC	0.820

SV-7	CHLORINATED COMPOUNDS	µg/m <sup>3</sup>
	TLE	49.6
	PERC	5.80

SV-9	CHLORINATED COMPOUNDS	µg/m <sup>3</sup>
	TLE	18.4
	PERC	4.62

LEGEND:  
 ▼ SOIL VAPOR IMPLANT LOCATION (SV)  
 TLE TRICHLOROETHENE  
 PERC TETRACHLOROETHENE  
 µg/m<sup>3</sup> MICROGRAMS PER CUBIC METER  
 ND NONE DETECTED



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220-222-228-230-232  
 East 125th Street  
 New York, NY.

Drawn By:	CQ
Reviewed By:	MR
Approved By:	MS
Date:	11/09/10
Scale:	AS NOTED

TITLE:

FIGURE 9. CHLORINATED COMPOUNDS IN SOIL VAPOR

EAST 125th STREET



SV-1

GASOLINE COMPOUNDS	µg/ m <sup>3</sup>
B	0.750
T	4.95
E	0.360
X	1.84

SV-14

GASOLINE COMPOUNDS	µg/ m <sup>3</sup>
B	0.780
T	55.2
E	8.77
X	52.4

SV-13

GASOLINE COMPOUNDS	µg/ m <sup>3</sup>
B	0.610
T	38.6
E	3.92
X	14.64

SV-12

GASOLINE COMPOUNDS	µg/ m <sup>3</sup>
B	ND
T	19.5
E	2.05
X	13.40

AST IN UNDATED AREA OF BASEMENT

FILL PORT

SIDEWALK

ABANDONED FILL PORT

SV-6

GASOLINE COMPOUNDS	µg/ m <sup>3</sup>
B	ND
T	45.5
E	ND
X	2.01

SUBJECT PROPERTY  
6 STORY BUILDING  
(220-222 EAST 125 ST.,  
BLOCK 1789, LOT 39)

ADJACENT NEW YORK  
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SV-5

GASOLINE COMPOUNDS	µg/ m <sup>3</sup>
B	4.98
T	41.1
E	18.8
X	87.6

SV-3

GASOLINE COMPOUNDS	µg/ m <sup>3</sup>
B	0.670
T	26.2
E	0.790
X	3.33

SV-2

GASOLINE COMPOUNDS	µg/ m <sup>3</sup>
B	0.690
T	4.36
E	0.260
X	0.780

SV-15

GASOLINE COMPOUNDS	µg/ m <sup>3</sup>
B	0.590
T	5.23
E	2.34
X	15.71

SV-11

GASOLINE COMPOUNDS	µg/ m <sup>3</sup>
B	0.510
T	3.38
E	1.39
X	8.97

SV-10

GASOLINE COMPOUNDS	µg/ m <sup>3</sup>
B	1.81
T	25.9
E	6.46
X	36.6

SV-9

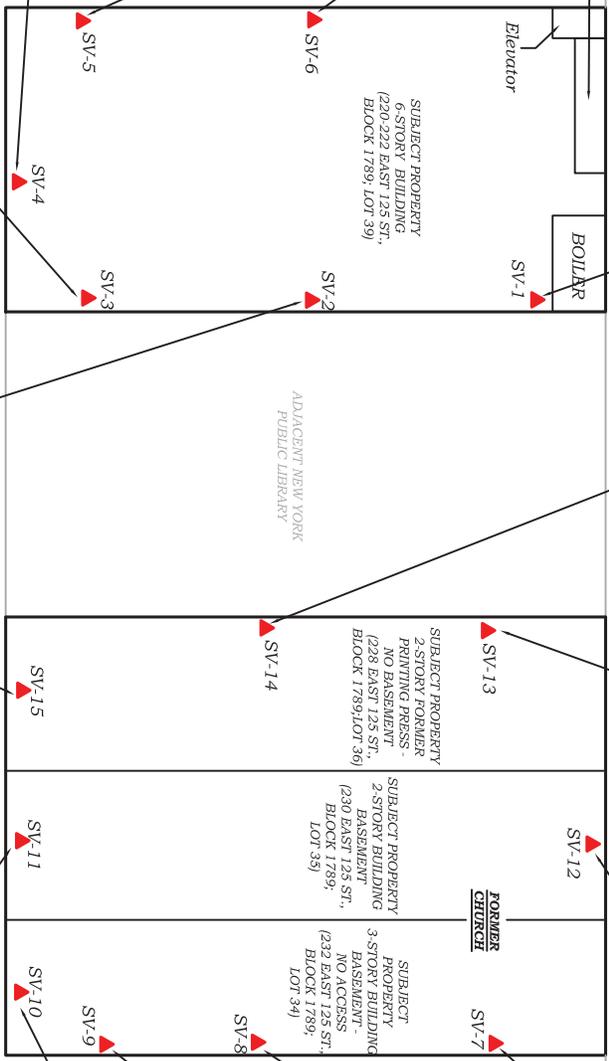
GASOLINE COMPOUNDS	µg/ m <sup>3</sup>
B	0.880
T	22.1
E	4.14
X	22.74

SV-8

GASOLINE COMPOUNDS	µg/ m <sup>3</sup>
B	2.48
T	13.5
E	2.06
X	11.52

SV-7

GASOLINE COMPOUNDS	µg/ m <sup>3</sup>
B	ND
T	77.2
E	8.30
X	53.8



LEGEND:  
SOIL VAPOR IMPLANT LOCATION (SV)

- ▲ SOIL VAPOR IMPLANT LOCATION (SV)
- B BENZENE
- T TOLUENE
- E ETHYLBENZENE
- X TOTAL XYLENES
- µg/ m<sup>3</sup> MICROGRAMS PER CUBIC METER
- ND NONE DETECTED



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Scale:	AS NOTED

FIGURE 10: GASOLINE COMPOUNDS IN SOIL VAPOR



A-1	
VOC	µg/ m <sup>3</sup>
Ethanol	7.73
Acetone	4.75
Propene	2.19
Chloromethane	0.530
Dichlorodifluoromethane	0.500
Hexane	0.390
Methylene chloride	2.93
Isopropyl alcohol	1.18

FILL PORT

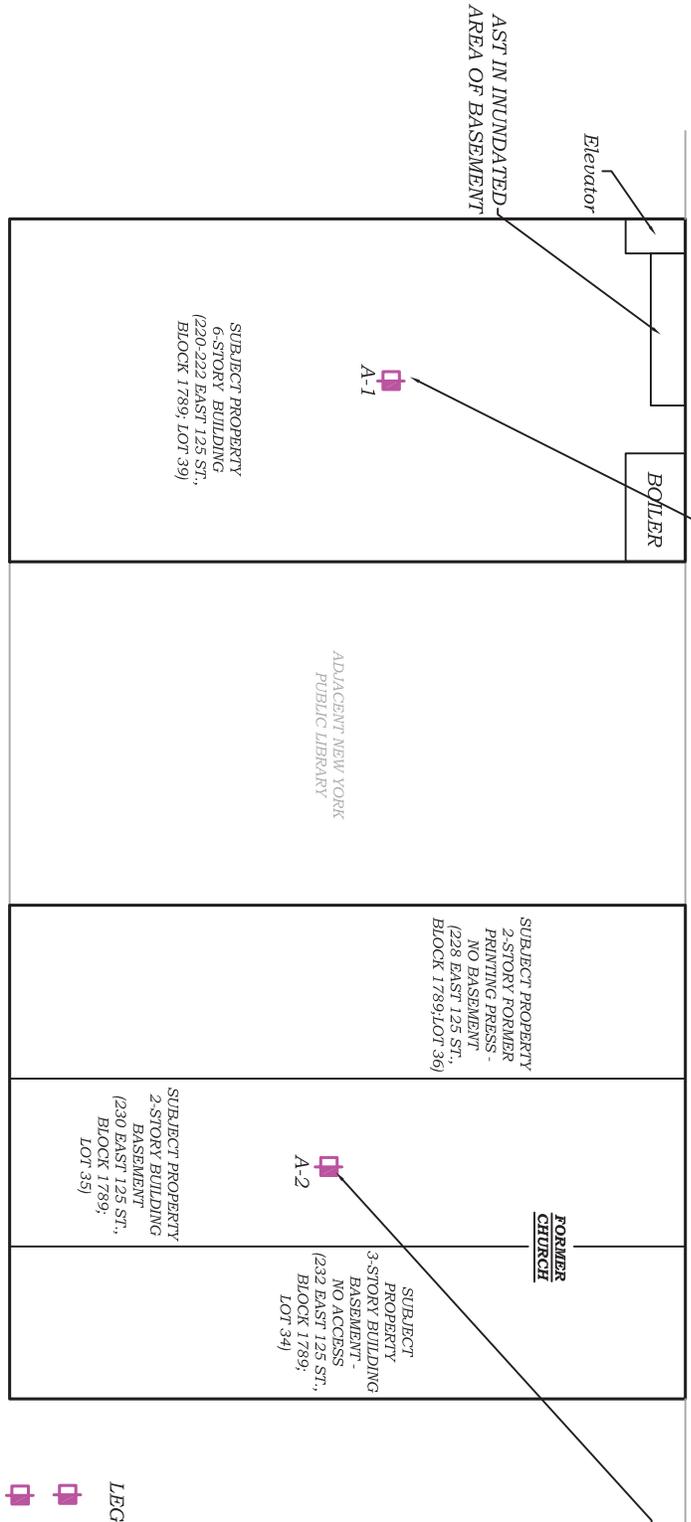
SIDEWALK

ABANDONED FILL PORT

EAST 125th STREET

A-3	
VOC	µg/ m <sup>3</sup>
Ethanol	12.4
Acetone	52.6
2-Butanone	0.440
Dichlorodifluoromethane	0.560
Benzene	1.12
Toluene	2.116
Tetrachloroethene	0.520
Hexane	15.7
n-Heptane	0.300
m + p-Xylene	0.400
Methylene chloride	0.510
Cyclohexane	0.300
Isopropyl alcohol	1.83

A-2	
VOC	µg/ m <sup>3</sup>
Ethanol	12.0
Propene	9.94
Dichlorodifluoromethane	0.550
Benzene	3.80
Toluene	2.15
Tetrachloroethene	0.360
Hexane	5.86
Methylene chloride	0.530
Cyclohexane	0.320
Isopropyl alcohol	1.06



**LEGEND:**

- OUTDOOR AIR SAMPLE LOCATION (A3)
- INDOOR AIR SAMPLE LOCATION (A1, A2)
- VOC
- VOLATILE ORGANIC COMPOUND
- µg/ m<sup>3</sup> MICROGRAMS PER CUBIC METER



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 New York, NY.

Drawn By:	CQ
Reviewed By:	MR
Approved By:	MS
Date:	11/09/10
Scale:	AS NOTED

TITLE: **FIGURE 11: VOLATILE ORGANIC COMPOUNDS IN AIR**

# **TABLE 1**

## **Groundwater Level Data**

**Table 1**  
**Groundwater Level Data - October 2010**  
**220-232 East 125th Street, New York, NY**

Monitoring Well (MW)	Oct-10			
	Casing Elevation(ft)	Depth to Water (ft)	Groundwater Elevation (ft)	Depth to Product (ft)
MW-1	17.35	4.96	12.39	ND
MW-2	17.39	4.98	12.41	ND
MW-3	14.02	1.85	12.17	ND
MW-4	14.28	1.68	12.60	ND
MW-5	26.64	14.29	12.35	ND

*ND...None Detected*

*N/A...Not Applicable*

## **TABLE 2**

**Sample Collection Data for all media**

matrix	number of samples	Sample Container Used	Dates of Collection
Soil	17	4 oz glass jar, 2 oz glass jar	10/19/2010
Groundwater	5	40 ml vials, 1,000 ml Amber jars, 250 ml plastic with preservative, 250 ml plastic without preservative	10/21/2010
Soil vapor	15	Summa Canister	10/21/2010
Air	3	Summa Canister	10/21/2010

## **TABLE 3**

### **Analytical Methods Summary Table**

matrix	number of samples	analytical parameters measured	analytical methods used	number of duplicate samples	number of trip blank samples	number of field blank samples
Soil	17	VOCs, SVOCs, Pesticides, PCBs, Metals, Chromium Hexavalent, Chromium Trivalent	EPA Method 8260 EPA Method 8270 EPA Method 8081 EPA Method 8082 EPA Method 6010	0	0	0
Groundwater	5	VOCs, SVOCs, Pesticides, PCBs, Metals (filtered and unfiltered)	EPA Method 8260 EPA Method 8270 EPA Method 8081 EPA Method 8082 EPA Method 6010	0	0	0
Soil vapor	15	VOCs	EPA Method TO 15	0	0	0
Air	3	VOCs	EPA Method TO 15	0	0	0

## **TABLE 4**

### **Soil Analytical Data Summary**

(showing exceedence of Track 1 SCOs)

**Table 4A**  
**Shallow Soil Samples Organic Analytical Results**  
**220-232 East 125 Street, NY, NY**

Sample Identification	SP-1*	SP-2*	SP-3*	SP-4*	SP-5	SP-6	SP-7*	SP-9*	Unrestricted Use Soil Cleanup Objectives (6 NYC RR Pt.375-6.8)
Sample Depth	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	
Sample Date	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	
Sample Matrix	Soil								
Units	ug/kg								
Volatile Organic Compounds									
Dichlorodifluoromethane	ND	NS							
Chloromethane	ND	NS							
Vinyl chloride	ND	20							
Bromomethane	ND	NS							
Chloroethane	ND	NS							
Trichlorofluoromethane	ND	NS							
1,1-Dichloroethene	ND	270							
trans-1,2-Dichloroethene	ND	190							
1,1-Dichloroethane	ND	330							
2,2-Dichloropropane	ND	NS							
cis-1,2-Dichloroethene	ND	250							
Bromochloromethane	ND	NS							
Chloroform	ND	370							
1,1,1-Trichloroethane	ND	680							
Carbon tetrachloride	ND	760							
1,1-Dichloropropene	ND	NS							
Acetone	ND	50							
Benzene	ND	60							
1,2-Dichloroethane	ND	200							
Trichloroethene	ND	470							
1,2-Dichloropropane	ND	NS							
Dibromomethane	ND	NS							
Bromodichloromethane	ND	NS							
cis-1,3-Dichloropropene	ND	NS							
Toluene	ND	700							
trans-1,3-Dichloropropene	ND	NS							
1,1,2-Trichloroethane	ND	NS							
Tetrachloroethene	ND	1,300							
1,3-Dichloropropane	ND	NS							
Dibromochloromethane	ND	NS							
1,2-Dibromoethane	ND	NS							
Chlorobenzene	ND	1.1							
1,1,1,2-Tetrachloroethane	ND	NS							
Ethylbenzene	ND	1.0							
Xylene (Total)	ND	260							

NS...No Standard , ND...Not Detected, \*...installed in basement  
Shaded values represent concentration exceeding the USCO

Sample Identification	SP-1*	SP-2*	SP-3*	SP-4*	SP-5	SP-6	SP-7*	SP-9*	Unrestricted Use Soil Cleanup Objectives (6 NYC RR Pt.375-6.8)
Sample Depth	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	
Sample Date	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	
Sample Matrix	Soil								
Units	ug/kg								
<b>Volatile Organic Compounds</b>									
1,1,2,2-Tetrachloroethane	ND	NS							
1,2,3-Trichloropropane	ND	NS							
n-Propylbenzene	ND	3,900							
2-Chlorotoluene	ND	NS							
4-Chlorotoluene	ND	NS							
1,3,5-Trimethylbenzene	ND	8,400							
tert-Butylbenzene	ND	5,900							
1,2,4-Trimethylbenzene	ND	3,600							
sec-Butylbenzene	ND	11,000							
1,3-Dichlorobenzene	ND	2,400							
4-Isopropyltoluene	ND	NS							
1,4-Dichlorobenzene	ND	1,800							
1,4-Dioxane	ND	100							
1,2-Dichlorobenzene	ND	1,100							
n-Butylbenzene	ND	12,000							
1,2-Dibromo-3-chloropropane	ND	NS							
1,2,4-Trichlorobenzene	ND	NS							
Hexachlorobutadiene	ND	NS							
Hexachlorobenzene	ND	330							
Naphthalene	ND	NS							
1,2,3-Trichlorobenzene	ND	NS							
1,2,4 - Trimethylbenzene	ND	NS							
Methyl-Tert-Butyl-Ether	ND	930							
Methyl ethyl ketone	ND	120							
Total VOCs	ND	NS							

NS...No Standard , ND...Not Detected, \*...installed in basement  
Shaded values represent concentration exceeding the USCO

Sample Identification	SP-1*	SP-2*	SP-3*	SP-4*	SP-5	SP-6	SP-7*	SP-9*	Unrestricted Use Soil Cleanup Objectives (6 NYC RR Pt.375-6.8)
Sample Depth	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	
Sample Date	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	
Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
<b>Semi Volatile Organic Compounds</b>									
n-Nitrosodi-n-propylamine	ND	ND	ND	ND	ND	ND	ND	ND	NS
Hexachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NS
Nitrobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NS
Isophorone	ND	ND	ND	ND	ND	ND	ND	ND	NS
bis (2-Chloroethoxy) Methane	ND	ND	ND	ND	ND	ND	ND	ND	NS
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NS
Naphthalene	130	ND	ND	ND	797	ND	ND	ND	12,000
4-Chloroaniline	ND	ND	ND	ND	ND	ND	ND	ND	NS
Hexachlorobudadiene	ND	ND	ND	ND	ND	ND	ND	ND	NS
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	NS
Hexachlorocyclopentadiene	ND	ND	ND	ND	ND	ND	ND	ND	NS
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	NS
2-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	NS
Dimethyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND	NS
Acenaphthylene	ND	ND	ND	ND	ND	153	ND	ND	100,000
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND	NS
3-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	NS
Acenaphthene	ND	ND	ND	ND	1,260	127	ND	ND	20,000
Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	NS
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND	NS
Diethyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND	NS
4-Chlorophenyl Phenyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	NS
Fluorene	ND	ND	ND	ND	1,030	109	ND	ND	30,000
4-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	NS
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	ND	ND	ND	NS
4-Bromophenyl Phenyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	NS
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NS
Phenol	ND	ND	ND	ND	ND	ND	ND	ND	330
Phenanthrene	83.5	ND	ND	ND	8,450	1,150	ND	ND	100,000
Anthracene	ND	ND	ND	ND	1,660	325	ND	ND	100,000
Di-n-Butyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND	NS
Fluoranthene	163	125	ND	ND	7,120	1,540	ND	ND	100,000
Pyrene	175	145	ND	ND	6,380	1,680	ND	ND	100,000
Benzyl Butyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND	NS
3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND	ND	ND	ND	NS
Benzo (a) Anthracene	107	111	ND	ND	<b>4,540</b>	<b>1,360</b>	ND	ND	1,000
Chrysene	140	133	ND	ND	<b>4,660</b>	<b>1,330</b>	ND	ND	1,000

NS...No Standard , ND...Not Detected, \*...installed in basement  
Shaded values represent concentration exceeding the USCO

Sample Identification	SP-1*	SP-2*	SP-3*	SP-4*	SP-5	SP-6	SP-7*	SP-9*	Unrestricted Use Soil Cleanup Objectives (6 NYC RR Pt.375-6.8)
Sample Depth	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	
Sample Date	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	
Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
<b>Semi Volatile Organic Compounds</b>									
D-n-n-octyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND	NS
Benzo (b) Fluoranthene	85.3	135	ND	ND	<b>3,680</b>	<b>1,240</b>	ND	ND	1,000
Benzo (k) Fluoranthene	111	91.5	ND	ND	<b>3,640</b>	<b>1,270</b>	ND	ND	800
Benzo (a) Pyrene	120	117	ND	ND	<b>3,890</b>	<b>1,320</b>	ND	ND	1,000
Indeno (1,2,3-cd) Pyrene	ND	ND	ND	ND	<b>1,820</b>	<b>841</b>	ND	ND	500
Dibenzo (a,h) Anthracene	ND	ND	ND	ND	ND	103	ND	ND	330
Benzo (g,h,i) Perylene	68.8	ND	ND	ND	1,690	785	ND	ND	100,000
Total SVOCs	41,653.60	41,327.50	0	0	91,087	53,803	0	0	NS
<b>Pesticides</b>									
Lindane	ND	ND	ND	ND	ND	ND	ND	ND	100
Polychlorinated biphenyls	ND	ND	ND	ND	ND	ND	ND	ND	100
Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	7,000
2,4,5-TP Acid (Silvex)	ND	ND	ND	ND	ND	ND	ND	ND	3,800
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	42
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	5
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	NS
p,p-DDE	ND	ND	ND	ND	ND	ND	ND	ND	3.3
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	5
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	14
p,p-DDD	ND	ND	ND	ND	ND	ND	ND	ND	3.3
p,p-DDT	ND	ND	ND	ND	ND	ND	ND	ND	3.3
Chlordane (alpha)	ND	ND	ND	ND	ND	ND	ND	ND	94
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND	NS
Endrin Aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	NS
a BHC	ND	ND	ND	ND	ND	ND	ND	ND	20
b BHC	ND	ND	ND	ND	ND	ND	ND	ND	36
d BHC g	ND	ND	ND	ND	ND	ND	ND	ND	40
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	2,400
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	2,400
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	2,400
<b>PCBs</b>									
Aroclor 1016	ND	ND	ND	ND	ND	ND	ND	ND	NS
Aroclor 1221	ND	ND	ND	ND	ND	ND	ND	ND	NS
Aroclor 1232	ND	ND	ND	ND	ND	ND	ND	ND	NS
Aroclor 1242	ND	ND	ND	ND	ND	ND	ND	ND	NS
Aroclor 1248	ND	ND	ND	ND	ND	ND	ND	ND	NS
Aroclor 1254	ND	ND	ND	ND	ND	ND	ND	ND	NS
Aroclor 1260	ND	ND	ND	ND	ND	ND	ND	ND	NS

NS...No Standard , ND...Not Detected, \*...installed in basement  
Shaded values represent concentration exceeding the USCO

**Table 4B**  
**Shallow Soil Samples Inorganic Analytical Results**  
**220-232 East 125th Street, NY, NY**

Sample Identification	SP-1	SP-2	SP-3	SP-4	SP-5	SP-6	SP-7	SP-9	Unrestricted Use Soil Cleanup Objectives (6 NYC RR Pt.375-6.8)
Sample Depth	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	0'-2'	
Sample Date	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	
Sample Matrix	Soil Metals	Soil Metals	Soil Metals	Soil Metals	Soil Metals	Soil Metals	Soil Metals	Soil Metals	
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/Kg
Aluminum	5,650	10,100	6,550	4,160	7,550	9,470	9,630	11,100	NS
Antimony	0.945	ND	ND	5.42	3.18	3.05	ND	ND	NS
Arsenic	5.47	3.30	4.94	3.75	<b>13.9</b>	<b>14.2</b>	3.07	1.25	13
Barium	98.1	65.7	<b>368</b>	168	<b>674</b>	208	43.7	44.4	350
Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	7.2
Cadmium	ND	ND	ND	ND	<b>6.82</b>	0.611	ND	ND	2.5
Calcium	3,000	3,190	10,500	3,710	9,750	11,600	1,110	1,870	NS
Chromium Hexavalent	ND	ND	ND	ND	ND	ND	ND	ND	1
Chromium Trivalent	14.1	15.5	17.8	8.53	28.4	19.1	17.0	14.0	30
Cobalt	6.20	6.94	12.1	5.13	7.86	5.73	7.49	3.77	NS
Copper	44.1	18.0	39.2	47.9	<b>124</b>	<b>90.3</b>	13.7	8.13	50
Cyanide	ND	ND	ND	ND	ND	ND	ND	ND	27
Iron	15,700	15,800	15,500	8,000	41,800	24,700	17,900	8,890	NS
Lead	<b>440</b>	15.2	<b>128</b>	<b>895</b>	<b>3,050</b>	<b>624</b>	6.78	6.45	63
Magnesium	2,340	2,930	2,790	1,730	2,060	2,980	3,150	2,290	NS
Manganese	422	411	3750	1420	759	342	811	107	1600
Mercury	ND	ND	ND	<b>0.949</b>	ND	ND	ND	ND	0.18
Nickel	18.2	17.6	27.7	13.9	24.5	21.7	19.1	13.1	30
Potassium	855	847	1,070	579	841	778	975	876	NS
Selenium	1.97	1.26	2.66	1.21	3.53	2	1.42	0.939	3.9
Silver	ND	ND	ND	ND	ND	ND	ND	ND	2
Sodium	178	120	305	162	207	215	129	115	NS
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	NS
Vanadium	16.9	20.8	20.1	10.8	17.3	20.5	19.3	12.2	NS
Zinc	<b>166</b>	36.5	74.1	<b>138</b>	<b>3060</b>	<b>599</b>	35.9	35.1	109

ND...not detected

mg/kg...milligrams per kilogram

Shaded values represent concentration exceeding USCO

NS...no standard

**Table 4C**  
**Deep Soil Samples Organic Analytical Results**  
**220-232 East 125 Street, NY, NY**

Sample Identification	SP-1*	SP-2*	SP-3*	SP-4*	SP-5	SP-6	SP-7*	SP-8*	SP-9*	Unrestricted Use Soil Cleanup Objectives (6 NYC RR Pt.375-6.8)
Sample Depth	3'-5'	3'-5'	3'-5'	3'-5'	10'-12'	10'-12'	2'-4'	2'-4'	2'-4'	
Sample Date	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	
Sample Matrix	Soil									
Units	ug/kg									
<b>Volatile Organic Compounds (ug/kg)</b>										
Dichlorodifluoromethane	ND	NS								
Chloromethane	ND	NS								
Vinyl chloride	ND	20								
Bromomethane	ND	NS								
Chloroethane	ND	NS								
Trichlorofluoromethane	ND	NS								
1,1-Dichloroethene	ND	270								
trans-1,2-Dichloroethene	ND	190								
1,1-Dichloroethane	ND	330								
2,2-Dichloropropane	ND	NS								
cis-1,2-Dichloroethene	ND	250								
Bromochloromethane	ND	NS								
Chloroform	ND	370								
1,1,1-Trichloroethane	ND	680								
Carbon tetrachloride	ND	760								
1,1-Dichloropropene	ND	NS								
Acetone	ND	50								
Benzene	ND	60								
1,2-Dichloroethane	ND	200								
Trichloroethene	ND	470								
1,2-Dichloropropane	ND	NS								
Dibromomethane	ND	NS								
Bromodichloromethane	ND	NS								
cis-1,3-Dichloropropene	ND	NS								
Toluene	ND	700								
trans-1,3-Dichloropropene	ND	NS								
1,1,2-Trichloroethane	ND	NS								
Tetrachloroethene	ND	1,300								
1,3-Dichloropropane	ND	NS								
Dibromochloromethane	ND	NS								
1,2-Dibromoethane	ND	NS								
Chlorobenzene	ND	1.1								
1,1,1,2-Tetrachloroethane	ND	NS								
Ethylbenzene	ND	1.0								
Xylene (Total)	ND	260								
o-Xylene	ND	NS								
m + p-Xylene	ND	NS								
Styrene	ND	NS								
Bromoform	ND	NS								
Isopropylbenzene	ND	NS								
Bromobenzene	ND	NS								
1,1,2,2-Tetrachloroethane	ND	NS								
1,2,3-Trichloropropane	ND	NS								
n-Propylbenzene	ND	3,900								
2-Chlorotoluene	ND	NS								

NS...No Standard, ND...Not Detected, \*...installed in basement, Shaded values represent concentrations exceeding the USCO

Sample Identification	SP-1*	SP-2*	SP-3*	SP-4*	SP-5	SP-6	SP-7*	SP-8*	SP-9*	Unrestricted Use Soil Cleanup Objectives (6 NYC RR Pt.375-6.8)
Sample Depth	3'-5'	3'-5'	3'-5'	3'-5'	10'-12'	10'-12'	2'-4'	2'-4'	2'-4'	
Sample Date	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	
Sample Matrix	Soil									
Units	ug/kg									
<b>Volatile Organic Compounds (µg/kg)</b>										
4-Isopropyltoluene	ND	NS								
1,4-Dichlorobenzene	ND	1,800								
1,4-Dioxane	ND	100								
1,2-Dichlorobenzene	ND	1,100								
n-Butylbenzene	ND	12,000								
1,2-Dibromo-3-chloropropane	ND	NS								
1,2,4-Trichlorobenzene	ND	NS								
Hexachlorobutadiene	ND	NS								
Hexachlorobenzene	ND	330								
Naphthalene	ND	NS								
1,2,3-Trichlorobenzene	ND	NS								
1,2,4 - Trimethylbenzene	ND	NS								
Methyl-Tert-Butyl-Ether	ND	930								
Methyl ethyl ketone	ND	120								
Total VOCs	ND	NS								
<b>Semi-Volatile Organic Compounds (µg/kg)</b>										
bis (2-Chloroethyl) Ether	ND	NS								
1,3-Dichlorobenzene	ND	NS								
1,4-Dichlorobenzene	ND	NS								
Carbazole	ND	NS								
1,2-Dichlorobenzene	ND	NS								
bis (2-Chloroisopropyl) Ether	ND	NS								
n-Nitrosodi-n-propylamine	ND	NS								
Hexachloroethane	ND	NS								
Nitrobenzene	ND	NS								
Isophorone	ND	NS								
bis (2-Chloroethoxy) Methane	ND	NS								
1,2,4-Trichlorobenzene	ND	NS								
Naphthalene	ND	12,000								
4-Chloroaniline	ND	NS								
Hexachlorobudadiene	ND	NS								
2-Methylnaphthalene	ND	NS								
Hexachlorocyclopentadiene	ND	NS								
2-Chloronaphthalene	ND	NS								
2-Nitroaniline	ND	NS								
Dimethyl Phthalate	ND	NS								
Acenaphthylene	ND	100,000								
2,6-Dinitrotoluene	ND	NS								
3-Nitroaniline	ND	NS								
Acenaphthene	ND	20,000								
Dibenzofuran	ND	NS								
2,4-Dinitrotoluene	ND	NS								
Diethyl Phthalate	ND	NS								
4-Chlorophenyl Phenyl Ether	ND	NS								
Fluorene	ND	30,000								
4-Nitroaniline	ND	NS								
N-Nitrosodiphenylamine	ND	NS								
4-Bromophenyl Phenyl Ether	ND	NS								

Sample Identification	SP-1*	SP-2*	SP-3*	SP-4*	SP-5	SP-6	SP-7*	SP-8*	SP-9*	Unrestricted Use Soil Cleanup Objectives (6 NYC RR Pt.375-6.8)
Sample Depth	3'-5'	3'-5'	3'-5'	3'-5'	10'-12'	10'-12'	2'-4'	2'-4'	2'-4'	
Sample Date	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	
Sample Matrix	Soil									
Units	ug/kg									
<b>Semi Volatile Organic Compounds (µg/kg)</b>										
Pyrene	ND	100,000								
Benzyl Butyl Phthalate	ND	NS								
3,3'-Dichlorobenzidine	ND	NS								
Benzo (a) Anthracene	ND	1,000								
Chrysene	ND	1,000								
p-Cresol	ND	330								
o-Cresol	ND	330								
m-Cresol	ND	330								
Pentachlorophenol	ND	800								
bis (2-Ethyl Hexyl) Phthalate	193	136	68.2	129	137	390	780	261	375	NS
D-n-n-octyl Phthalate	ND	NS								
Benzo (b) Fluoranthene	ND	1,000								
Benzo (k) Fluoranthene	ND	800								
Benzo (a) Pyrene	ND	1,000								
Indeno (1,2,3-cd) Pyrene	ND	500								
Dibenzo (a,h) Anthracene	ND	330								
Benzo (g,h,i) Perylene	ND	100,000								
Total SVOCs	193	136	68.2	129	137	390	780	261	375	NS
<b>Pesticides</b>										
Lindane	ND	100								
Polychlorinated biphenyls	ND	100								
Dibenzofuran	ND	7,000								
2,4,5-TP Acid (Silvex)	ND	3,800								
Heptachlor	ND	42								
Aldrin	ND	5								
Heptachlor Epoxide	ND	NS								
p,p-DDE	ND	3.3								
Dieldrin	ND	5								
Endrin	ND	14								
p,p-DDD	ND	3.3								
p,p-DDT	ND	3.3								
Chlordane (alpha)	ND	94								
Toxaphene	ND	NS								
Endrin Aldehyde	ND	NS								
a BHC	ND	20								
b BHC	ND	36								
d BHC g	ND	40								
Endosulfan I	ND	2,400								
Endosulfan II	ND	2,400								
Endosulfan Sulfate	ND	2,400								
<b>PCBs</b>										
Aroclor 1016	ND	NS								
Aroclor 1221	ND	NS								
Aroclor 1232	ND	NS								
Aroclor 1242	ND	NS								
Aroclor 1248	ND	NS								
Aroclor 1254	ND	NS								
Aroclor 1260	ND	NS								

**Table 4D**  
**Deep Soil Samples Inorganic Analytical Results**  
**220-232 East 125th Street, NY, NY**

Sample Identification	SP-1	SP-2	SP-3	SP-4	SP-5	SP-6	SP-7	SP-8	SP-9	Unrestricted Use Soil Cleanup Objectives (6 NYC RR Pt.375- 6.8)
Sample Depth	3'-5'	3'-5'	3'-5'	3'-5'	10'-12'	10'-12'	2'-4'	2'-4'	2'-4'	
Sample Date	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	10/19/2010	
Sample Matrix	Soil Metals									
Units	mg/kg									
Aluminum	2,240	2,350	2,300	3,760	10,100	10,700	11,600	11,100	13,800	NS
Antimony	ND	ND	ND	1.62	ND	ND	ND	ND	ND	NS
Arsenic	1.12	1.68	8.19	1.46	1.05	2.46	2.64	1.23	2.47	13
Barium	17.2	111	9.99	21.1	19.5	35.6	143	25.1	26.9	350
Beryllium	ND	7.2								
Cadmium	ND	2.5								
Calcium	649	571	428	375	1,220	928	6,450	1,690	1,090	NS
Chromium Hexavalent	ND	1								
Chromium Trivalent	5.55	7.28	7.56	7.95	12.7	14.0	11.7	13.3	19.6	30
Cobalt	3.32	2.10	1.68	2.29	7.56	6.71	3.72	5.29	9.8	NS
Copper	6.92	10.4	4.61	9.90	19.3	12.0	15.8	16.5	13.4	50
Cyanide	ND	27								
Iron	5,750	5,980	15,700	12,900	12,400	14,000	12,300	13,000	11,900	NS
Lead	3.22	2.14	1.66	2.31	6.72	6.07	10.5	7.71	7.11	63
Magnesium	984	903	740	978	3,620	3,580	1,810	3,500	2,920	NS
Manganese	241	988	221	368	113	162	603	149	120	1600
Mercury	ND	0.18								
Nickel	5.70	6.54	7.85	8.26	21.7	16.2	11.0	19.6	19.3	30
Potassium	522	575	544	603	1,310	770	738	1,150	1,160	NS
Selenium	0.685	0.968	1.14	1.49	0.640	0.782	2.42	ND	0.601	3.9
Silver	ND	2								
Sodium	124	91.3	88.1	114	271	83.0	634	124	135	NS
Thallium	ND	NS								
Vanadium	6.68	6.25	7.87	13.4	13.3	17.5	12.5	15.1	37.7	NS
Zinc	8.58	10.4	7.58	10.9	84.5	47.2	36.1	46.6	40.3	109

ND...not detected

mg/kg...milligrams per kilogram

Shaded values represent concentration exceeding USCO

NS...no standard

## **TABLE 5**

### **Groundwater Analytical Data Summary**

(showing exceedence of New York State Groundwater Standards)

**Table 5A**  
**Water Samples Organic Analytical Results**  
**220 - 232 125th St, New York, NY**

Sample Identification	1	2	3	4	5	NYSDEC TOGS 1.1.1 Groundwater Quality Standard
Boring Number	MW-1	MW-2	MW-3	MW-4	MW-5	
Sample Date	10/21/2010	10/21/2010	10/21/2010	10/21/2010	10/21/2010	
Sample Matrix	Water	Water	Water	Water	Water	
Units	ug/L	ug/L	ug/L	ug/L	ug/L	
Volatile Organic Compounds						
Tetrahaloroethylene	2.1	2.7	ND	ND	ND	5
Trichloroethylene	ND	0.90	ND	ND	ND	5
Semivolatile Organic Compounds						
ND						
Pesticides						
ND						
PCBs						
ND						

*NS...No Standard*

*ug/L...micrograms per Liter*

*ND...not detected*

*Shaded values represent concentration exceeding the GQS*

*This Table Lists Only Compounds Detected At Concentrations Exceeding Their Respective Method Detection Limit.*

**Table 5B**  
**Water Samples Inorganic Analytical Results Filtered and Unfiltered**  
**220 - 232 125th Street, New York, NY**

Sample Identification	1	2	3	4	5	6	7	8	9	10	NYSDEC TOGS 1.1.1 Groundwater Quality Standard
Boring Number	MW-1	MW-1	MW-2	MW-2	MW-3	MW-3	MW-4	MW-4	MW-5	MW-5	
Sample Date	10/21/2010	10/21/2010	10/21/2010	10/21/2010	10/21/2010	10/21/2010	10/21/2010	10/21/2010	10/21/2010	10/21/2010	
Sample Matrix	Water Metals(Filterd)	Water Metals(Unfiltered)									
Units	mg/L	mg/L									
Aluminum	ND	33.9	ND	26.8	0.067	62.1	4.95	<b>2,850</b>	0.106	193	2,000
Arsenic	0.028	0.028	ND	0.041	ND	0.027	ND	0.245	ND	0.046	50
Barium	0.017	1.22	0.036	0.872	ND	0.307	0.231	19.0	0.029	1.14	2,000
Beryllium	ND	0.001	ND	0.003	ND	ND	ND	ND	ND	0.005	3
Calcium	64.2	82.4	69.3	77.1	125	151	46.7	568	146	224	NS
Chromium	ND	0.146	ND	0.119	ND	0.105	ND	3.64	ND	0.501	100
Cobalt	ND	0.061	ND	0.073	0.005	0.046	ND	1.01	ND	0.244	NS
Copper	ND	0.447	ND	0.201	ND	0.181	ND	4.06	ND	0.763	NS
Iron	0.047	114	0.308	231	4.20	55.3	1.56	<b>2,070</b>	0.080	217	600
Lead	ND	0.455	ND	0.088	ND	0.295	ND	3.17	ND	0.231	35,000
Magnesium	12.7	27.2	15.8	21.6	11.6	27.0	15.5	685	13.4	32.2	35,000
Manganese	0.008	14.6	0.007	11.9	3.96	4.81	1.24	25.8	0.034	7.82	NS
Mercury	ND	0.0003	ND	ND	ND	0.0004	ND	ND	ND	ND	1.4
Nickel	ND	0.173	ND	0.104	ND	0.090	ND	3.32	ND	0.328	200
Potassium	4.19	9.55	6.42	8.61	14.1	19.1	29.3	211	14.2	24.1	NS
Selenium	ND	0.011	ND	0.018	ND	ND	ND	ND	0.013	0.018	20
Sodium	30.4	31.7	36.4	36.7	160	165	77.9	78.3	18.4	19.7	SB
Vanadium	ND	0.144	ND	0.186	ND	0.105	ND	3.35	ND	0.480	NS
Zinc	ND	0.572	ND	0.132	ND	0.611	ND	11.1	ND	0.41	5,000

NS...No Standard

ug/L...micrograms per Liter

ND...not detected

Shaded values represent concentration exceeding the GQS

This Table Lists Only Compounds Detected At Concentrations Exceeding Their Respective Method Detection Limit.

## **TABLE 6**

### **Soil Vapor Analytical Data Summary**

(showing exceedence of NYS DOH Soil Vapor Intrusion Guidance)

**Table 6**  
**Summary of Soil Vapor Analytical Data**  
**220-232 East 125th Street, New York, NY**

Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Sample Identification	SV-1	SV-2	SV-3	SV-4	SV-5	SV-6	SV-7	SV-8	SV-9	SV-10	SV-11	SV-12	SV-13	SV-14	SV-15
Sample Date	10/21/20100	10/21/20100	10/21/20100	10/21/20100	10/21/20100	10/21/20100	10/21/20100	10/21/20100	10/21/20100	10/21/20100	10/21/20100	10/21/20100	10/21/20100	10/21/20100	10/21/20100
Sample Matrix	Soil vapor														
Units	ug/m <sup>3</sup>														
<b>Volatiles TO-15 List</b>															
4-Ethyltoluene	ND	ND	ND	ND	2.38	ND	5.10	0.670	1.24	2.18	1.01	1.35	0.930	6.34	1.85
sec-Butylbenzene	ND	0.410	ND												
Ethanol	5.01	5.66	4.42	6.33	16.2	17.6	750	13.9	246	2.27	2.42	ND	26.2	24.8	2.20
Acetone	ND	11.9	5.78	4.67	126	14.3	29.2	48.8	19.2	ND	ND	3.45	16.6	11.1	11.5
Propene	2.32	ND	1.69	ND	ND	ND	ND	4.89	ND	3.67	3.25	ND	ND	ND	ND
Chloromethane	ND	9.01	ND												
Chloroform	ND	ND	0.710	0.330	0.540	ND	11.4	1.80	3.64	4.41	15.7	23.0	0.360	2.18	1.88
2-Butanone	ND	ND	ND	0.820	11.5	ND	16.5	12.0	10.8	ND	0.270	ND	2.72	1.32	ND
Carbon Disulfide	ND	ND	ND	ND	4.18	ND	ND	0.890	ND	ND	ND	ND	0.380	0.250	0.550
Dichlorodifluoromethane	0.530	0.550	0.510	0.500	0.560	2.92	ND	0.480	ND	1.12	0.520	ND	0.470	0.550	3.35
Benzene	0.750	0.690	0.670	0.920	4.98	ND	ND	2.48	0.880	1.81	0.510	ND	0.610	0.780	0.590
Toluene	4.95	4.36	26.2	36.2	41.1	45.5	77.2	13.5	22.1	25.9	3.38	19.5	38.6	55.2	5.23
Tertahydrofuran	ND	0.520	ND	0.930	1.28	ND									
Trichloroethene	ND	ND	0.400	ND	0.560	ND	49.6	2.54	18.4	12.2	90.8	349	13.0	9.76	10.1
Tetrachloroethene	ND	ND	0.620	ND	0.540	ND	5.80	0.820	4.62	8.46	7.16	14.4	15.9	0.460	1.17
Trichlorofluoromethane	ND	9.31	0.380	ND	ND	ND	1.95								
2-Hexanone	ND	ND	ND	ND	0.660	ND	ND	0.280	ND						
Hexane	1.17	1.11	1.57	2.41	3.12	5.17	4.00	5.78	2.62	1.65	2.87	1.30	5.60	6.08	1.07
n-Heptane	4.32	2.08	31.9	41.5	20.0	53.4	100	18.8	16.4	12.1	0.290	28.0	81.3	90.7	0.800
Ethyl acetate	ND	1.38	1.20	ND											
Ethylbenzene	0.360	0.260	0.790	0.830	18.8	ND	8.30	2.06	4.14	6.46	1.39	2.05	3.92	8.77	2.34
o-Xylene	0.460	ND	0.870	0.940	26.1	ND	18.8	3.96	8.04	12.8	3.02	4.80	4.44	19.2	5.83
m + p-Xylene	1.38	0.780	2.46	2.89	61.5	2.01	35.0	7.56	14.7	23.8	5.95	8.60	10.2	33.2	9.88
Methylene chloride	2.39	10.7	5.81	8.04	4.36	9.48	ND	0.300	ND	ND	ND	6.90	1.26	ND	2.81
Cyclohexane	ND	ND	0.400	0.520	0.700	ND	ND	0.580	ND	0.380	ND	ND	1.28	1.65	ND
4-Methyl-2-Pentanone	ND	ND	ND	1.29	ND	ND	ND	ND	1.92	ND	ND	ND	ND	ND	ND
4-Isopropyltoluene	0.500	ND	0.460	1.44	0.780	ND	ND	ND	0.640	1.38	ND	ND	ND	ND	ND
Isopropylbenzene	ND	ND	ND	ND	2.24	ND	ND	0.260	0.540	0.880	ND	ND	0.410	1.40	0.740
Isopropyl alcohol	0.560	0.890	1.99	0.720	1.66	ND	ND	1.02	0.720	4.42	0.540	ND	0.440	0.680	1.32
1,3-Butadiene	ND	0.690	ND	ND	ND	ND	ND								
1,2-Dichloropropane	ND	0.690	ND												
cis-1,2-Dichloroethene	ND	0.520	ND	ND											
1,1-Dichloroethane	ND	2.85	0.410	ND	ND										
1,1,1-Trichloroethane	ND	0.490	2.02	96.1	0.580	1.15	1.75								
1,3,5-Trimethylbenzene	ND	ND	ND	ND	2.12	ND	4.80	0.830	1.16	2.51	1.01	1.90	0.770	8.08	2.53
1,2,4-Trimethylbenzene	0.540	ND	0.670	0.920	5.74	ND	15.2	2.67	2.68	7.23	4.20	6.65	1.57	30.5	5.80

ND...Not Detected

All values listed in this table, represent concentrations exceeding their respective laboratory method detection limits

## **TABLE 7**

### **Air Analytical Data Summary**

(showing exceedence of NYS DOH Air Guidance)

**Table 7**  
**Summary of Air Analytical Data**  
**220- 232 East 125th St, New York, NY**

Number	1	2	3
Sample Identification	A-1	A-2	A-3
Sample Date	10/21/2010	10/21/2010	10/21/2010
Sample Matrix	Indoor Air	Indoor Air	Outdoor Air
Units	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>
<b>Volatiles TO-15 List</b>			
Ethanol	7.73	12.0	12.4
Acetone	4.75	ND	52.6
Propene	2.19	9.94	ND
Chloromethane	0.530	ND	ND
2-Butanone	ND	ND	0.440
Dichlorodifluoromethane	0.500	0.550	0.560
Benzene	ND	3.80	1.12
Toluene	ND	2.15	2.16
Tetrachloroethene	ND	0.360	0.520
Hexane	0.390	5.86	15.7
n-Heptane	ND	ND	0.300
m + p-Xylene	ND	ND	0.400
Methylene chloride	2.93	0.530	0.510
Cyclohexane	ND	0.320	0.300
Isopropyl alcohol	1.18	1.06	1.83