

**220 -232 EAST 125 STREET  
MANHATTAN, NEW YORK**

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# **Remedial Investigation Report**

**NYC BCP Site Number:**

**11CBCP004M**

**and**

**11CBCP005M**

**Prepared for:**

Church of Scientology Religious Trust  
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November 2010

## CERTIFICATION

I, Mark E. Robbins, am a Qualified Environmental Professional, as defined in proposed RCNY § 43-1402(ar). I have primary direct responsibility for implementation of the Remedial Investigation for the 220, 222, 228, 230, 232 East 125 Street Site, NYC BCP Site No. 11CBCP004M and 11CBCP005M. I am responsible for the content of this Remedial Investigation Report (RIR), have reviewed its contents and certify that this RIR is accurate to the best of my knowledge and contain all available environmental information and data regarding the property.

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Qualified Environmental Professional

Date

Signature

# REMEDIAL INVESTIGATION REPORT

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## LIST OF ACRONYMS

Acronym	Definition
AOC	Area of Concern
CAMP	Community Air Monitoring Plan
COC	Contaminant of Concern
CPP	Citizen Participation Plan
CSM	Conceptual Site Model
DER-10	NYSDEC Division of Environmental Remediation Technical Guidance Document
FID	Flame Ionization Detector
GPS	Global Positioning System
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
IRM	Interim Remedial Measure
NAPL	Nonaqueous Phase Liquid
NYC BCP	New York City Brownfield Cleanup Program
NYC DOHMH	New York City Department of Health and Mental Hygiene
NYC OER	New York City Office of Environmental Remediation
NYS DOH ELAP	New York State Department of Health Environmental Laboratory Accreditation Program
OSHA	Occupational Safety and Health Administration
PID	Photoionization Detector
QEP	Qualified Environmental Professional
RI	Remedial Investigation
RIR	Remedial Investigation Report
SCO	Soil Cleanup Objective
SPEED	Searchable Property Environmental Electronic Database

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## EXECUTIVE SUMMARY

The Remedial Investigation Report (RIR) provides sufficient information for establishment of remedial action objectives, evaluation of remedial action alternatives, and selection of a remedy pursuant to RCNY§ 43-1407(f). The remedial investigation (RI) described in this document is consistent with applicable guidance.

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

The Site is identified as 220-222, 228, 230 and 232 East 125<sup>th</sup> Street, New York, New York, and is further described as Block 1789, Lots 39, 36, 35 and 34, 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 site is associated with Brownfield Cleanup Program ID number.

The site consists of two separate 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, 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.

220-222 E 125<sup>th</sup> Street, or Lot 39, 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. 228 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. 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.

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

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

### **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 and three soil borings in Lot 39, 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. Installed three groundwater monitoring wells in Lots 34, 35, 36 and two groundwater monitoring wells in Lot 39 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

3. Installed nine soil vapor probes around Site perimeter in Lots 34, 35 and 36 and six soil vapor probes around Site perimeter in Lot 39 and collected fifteen samples for chemical analysis.
4. One indoor air sample was collected in Lots 34, 35 and 36 and one indoor air sample was collected in Lot 39 for chemical analysis. One outdoor air sample was collected for chemical analysis.

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

1. Elevation of the property ranges from 14 to 31 feet.
2. Depth to groundwater is approximately 12 feet at the Site.
3. Groundwater flow is generally from west to east beneath the Site.
4. 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.
5. The stratigraphy, from 0 to 8 feet consists of fill material. The fill is underlain by glacial alluvium.

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

1. **Lot 39- Soil:** Materials beneath the foundation slab on this 1/9 acre property were sampled at three locations and showed no evidence of SVOCs except bis-2-ethylhexyl phthalate at relatively low concentrations. No SVOCs exceeded Track 2 standards. No VOCs were identified in soil samples except methylene chloride, which was identified at comparably low levels in all samples. VOCs did not exceed Track 2 standards. Extremely low levels of metals were identified in soil samples (for instance, lead was between 6-10 ppm and arsenic between 1-3 ppm in four samples). Metals did not exceed Track 2 SCOs.
2. **Lot 39- Groundwater:** Groundwater is identified at 10 feet depth below street grade. Groundwater contained very low levels of dissolved metals in samples (for instance lead and arsenic were not detected). SVOCs, PCBs and Pesticides were not detected. Only one VOC, methylene chloride, was detected and was below the

- groundwater standard of 5 ug/l. Unfiltered metals showed evidence of soil turbidity. No saline intrusion was evident.
3. **Lot 39- 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 ug/m<sup>3</sup> in either sample. No onsite source of BTEX or chlorinated VOC was detected and soil vapor findings are attributed to off-site activities and is not related to an on-site source.
  4. **Lots 34, 35 & 36- Soil:** Soil/fill samples confirmed the presence of moderate concentrations of semi volatile organic compounds (SVOCs) 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, Benzo (a) Anthracene (ranges from 1,360 to 4,540 µg/kg) and Chrysene (ranges from 1,330 to 4,660 µg/kg). PAHs are not detected in deeper soil samples on any of the three lots. Bis (2-Ethyl Hexyl) Phthalate was the only SVOC detected in the deep soil samples and due to its occurrence in virtually all samples at consistent concentrations is believed to be a lab artifact. No other SVOCs were detected in the deep soil samples. No VOCs were detected in any soil sample on the three lots with the exception of methylene chloride which was detected in every sample at a comparable concentration below the Track 1 SCO. Methylene chloride in these samples is believed to be a lab artifact. Metals were identified in soil from zero to 2 feet in northern and southern portions of Lots 34, 35 & 36. Lead is generally below 700 ppm but is found in historic fill as high as 3,050 mg/kg in one sample on Lot 36. Concentrations are generally lowest on Lots 34 and 35. Arsenic marginally exceeds Track 1 SCOs in two fill samples on Lot 36 (13.6 and 14.2 mg/kg compared to an SCO of 13). Elevated levels of metals were not detected in any of the deep soil samples.
  5. **Lots 34, 35 & 36- Groundwater:** Groundwater is identified at 10 feet depth below grade. Groundwater contained very low levels of dissolved metals in samples (for instance lead was not detected). SVOCs, PCBs and Pesticides were not detected. Methylene chloride was detected in all groundwater samples and was below the

groundwater standard of 5 ug/l. Similar to soil, methylene chloride was identified in all groundwater samples collected at both Church of Scientology (COS) sites and is believed to be a lab artifact. Unfiltered metals showed evidence of soil turbidity. No saline intrusion was evident. Perchloroethylene were identified at low levels in monitor wells on Lot 34 and 35 and trichlorethylene was identified at low levels in a monitor well on Lot 35. Neither was identified on Lot 36. Concentrations of perchloroethylene were 2.1 and 2.7 ug/l on Lot 34 and 35, respectively. Trichlorethylene was 0.9 ug/l on lot 35.

- 6. Lots 34, 35 & 36- 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 trichlorethylene. Total VOC compounds in soil vapor ranged from 0.250 ug/m<sup>3</sup> to 750 ug/m<sup>3</sup> beneath Lots 34, 35 and 36. TCE ranges from 2.54 ug/m<sup>3</sup> to 349 ug/m<sup>3</sup> and levels of PERC ranges from 0.460 ug/m<sup>3</sup> to 15.9 ug/m<sup>3</sup>. The site contaminants observed in sub-slab soil vapor appear to be related to a gasoline-associated and a chlorinated solvent source. Highest concentrations of TCE are found on the north side and south side of the former church on Lot 35. Highest concentrations of PCE are found on the north side of both Lot 35 and 36. BTEX concentrations occur in all nine of the soil vapor probes on the property, with concentrations below 60 ug/m<sup>3</sup> 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 the second COS property where no contamination was observed and BTEX was identified in soil vapor, this suggests their origin from an off-site 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 this lot 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 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

# REMEDIAL INVESTIGATION REPORT

## 1.0 INTRODUCTION AND PROJECT OBJECTIVES

### 1.1 PROJECT BACKGROUND

Church of Scientology Religious Trust has enrolled in the New York City Brownfield Cleanup Program (NYC BCP) to investigate and remediate a 0.29-acre site located at 220, 222, 228, 230 and 232 East 125 Street in Manhattan, New York City. Commercial use is proposed for the property. This RIR summarizes the nature and extent of contamination. The RI work was performed between October 19<sup>th</sup>, 2010 and October 21<sup>st</sup>, 2010. The goal of this RIR is to provide sufficient information for establishment of remedial action objectives, evaluation of remedial action alternatives, and selection of a remedy that is protective of human health and the environment pursuant to RCNY§ 43-1407(f).

### 1.2 SITE LOCATION AND DESCRIPTION

The Site is located in Manhattan, New York City and is identified as Block 1789 and Lot 34, 35, 36 and 39 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 Site is 0.29-acres and is bounded by East 125<sup>th</sup> Street to the north, residential, commercial and East 124<sup>th</sup> Street to the south, New York Public Library, 4-story residential and Bar/Grill to the east, and 2-story commercial to the west. A map of the site boundary is shown in Figure 2. 220-222 E 125<sup>th</sup> Street, or Lot 39, 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, New York City Department of Parks and Recreation Dream Street Park to the South, New York Public Library to the East, and a 3-story manufacturing building to the west.

228 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. 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. Currently, the Site is unoccupied. 228 to 232 East 125<sup>th</sup> Street is bounded by 125<sup>th</sup> Street to the North, New York City Department of Parks and Recreation Dream Street Park and a 12 story mixed use commercial/residential building to the South, a New York City Public Library to the west and a mixed use residential/commercial building to the west.

### **1.3 CONTEMPLATED REDEVELOPMENT PLAN**

This RI was performed to compile and evaluate data and information necessary to develop a remedial action work plan in a manner that will render the Site protective of human health and the environment consistent with the contemplated future use. The contemplated future use of the Site is a community space, specifically a church and administrative office for the church. 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 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. Excavation will take place for stairways and the elevator pit. No landscaped areas are proposed at either portion of the site. Vault area under sidewalk will be rebuilt and structured. 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.

### **1.4 DESCRIPTION OF SURROUNDING PROPERTY**

The Site is 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 Site. New York Public Library and a 4-story

residential and Bar/Grill are located to the east of the Site. A 2-story commercial business is located to the west of the Site.

Within 400 feet radius of the Site, there is 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 within the center portion of the property. The Library is a sensitive receptor for the property.

Within 320 feet radius, there is one day care center (ABC Rosie & Harry's Place) located to the southwest and crossgradient of the Site. Based on the distance and location of this identified sensitive receptor, the Site 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 receptors indicated.

## **2.0 SITE HISTORY**

### **2.1 PAST USES AND OWNERSHIP**

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

### **2.2 PREVIOUS INVESTIGATIONS**

Hydro Tech Environmental, Corp. performed a Phase I Report in October 2010 for the Church of Scientology Religious Trust. The purpose of the Phase I was to characterize the environmental quality of the Site through the determination of the presence of Recognized Environmental Conditions (RECs). The Phase I determined the presence of ASTs, petroleum staining, E and Manifest designations and historical uses for printing/manufacturing/industrial purposes as RECs.

### **2.3 SIGNIFICANT HISTORICAL ENVIRONMENTAL SITE FEATURES**

A Site inspection was performed on September 22, 2010 and September 27, 2010 to identify features of environmental significance that define Areas of Concern (AOC). Areas of Concern generally include areas where existing or former activities are known or suspected to have resulted in generation, manufacture, refinement, transport, storage, handling, treatment, discharge, release and/or disposal. Sanborn fire insurance maps available for this Site were reviewed to identify historical features of environmental significance. Fire insurance maps are presented in Appendix A. A composite map of AOCs has been developed from Site inspection(s), inspection of fire insurance maps and other sources, and is presented in Figure 4.

The AOCs identified for this site include:

1. AST in northern portion of Lot 34-35.
2. Historical utilization of Lot 36 for printing operations and Lot 39 for factory/industrial/manufacturing purposes.

#### **2.4 INTERIM REMEDIAL MEASURES**

No IRMs have been performed at the Site.

### **3.0 PROJECT ORGANIZATION AND MANAGEMENT**

#### **3.1 PROJECT ORGANIZATION**

The Qualified Environmental Profession (QEP) responsible for preparation of this RIR is Mr. Mark E. Robbins. The Site Safety Officer is Mr. Mike Fiscina.

#### **3.2 HEALTH AND SAFETY**

All work described in this RIR was performed in full compliance with applicable laws and regulations, including Site and OSHA worker safety requirements and HAZWOPER requirements. The Health and Safety Plan (HASP) is included in Appendix B.

#### **3.4 INVESTIGATION DERIVED WASTE**

Hazardous waste, concentrated solid or semi-solid substances, soils with free product or NAPL and/or grossly contaminated media were not generated during the investigation. All other material removed from the site during the RI was managed in accordance with applicable laws and regulations.

#### **4.0 REMEDIAL INVESTIGATION ACTIVITIES AND OBSERVATIONS**

The Church of Scientology Religious Trust undertook the following scope of work:

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 and three soil borings in Lot 39, 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. Six soil borings installed;
3. Installed three groundwater monitoring wells in Lots 34, 35, 36 and two groundwater monitoring wells in Lot 39 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 Lots 34, 35 and 36 and six soil vapor probes around Site perimeter in Lot 39 and collected fifteen samples for chemical analysis.
5. One indoor air sample was collected in Lots 34, 35 and 36 and one indoor air sample was collected in Lot 39 for chemical analysis. One outdoor air sample was collected for chemical analysis.

#### **4.1 GEOPHYSICAL INVESTIGATION**

No geophysical study was performed.

#### **4.2 BORINGS AND MONITORING WELLS**

##### **Drilling and Soil Logging**

Boring logs were prepared by a geologist for all soil samples to document subsurface conditions. Boring logs include a description of the following: soil types and non-soil materials; soil screening results from field instrument measurements (i.e. photoionization detector); depth to groundwater; presence of odor, vapors, soil discoloration; and presence of free and/or residual

product. Boring logs with this information are attached in Appendix C. A map showing the location of soil borings and monitor wells is shown in Figure 5.

The RIR included a boring to the first confining bed with continuous soil sampling, geologic description, and PID screening.

### **Groundwater Monitoring Well Construction**

Five groundwater monitoring wells were installed and establish the groundwater flow direction. Of these, three groundwater monitor wells were installed in Lots 34, 35 and 36 and two groundwater monitoring wells were installed in Lot 39.

### **Surveying**

Land survey was used to identify the location of all soil borings and monitor wells.

### **Water Level Measurement**

One round(s) of static water levels were obtained to determine groundwater elevation and the groundwater flow direction; this data is included in Table 1.

## **4.3 GEOLOGICAL AND HYDROGEOLOGICAL CONDITIONS**

### **Stratigraphy**

TEC building consultants performed a Geotechnical Investigation at the property 228-232 East 125<sup>th</sup> Street during February 2010. The investigation consisted of the installation of three borings. One boring (B-1) was installed in the northern portion of the Site to a depth of 100 feet below grade, the second boring (B-2W) was installed in the southern portion of the site to a depth of 42 feet below grade and the third boring (B-3) was installed to a depth of 37 feet below grade. The geotechnical investigation determined urban fill material is present in all three borings from the street level to 8 feet below grade. The fill consisted of coarse to fine grained sand with varying percentages of silt, gravel and construction debris. The fill was loose to medium compact in terms of relative density, and was classified as an uncontrolled fill, Class 7, in accordance with the NYCBC.

Glacial alluvium deposited during the Wisconsin glacial epoch was encountered underlying the fill. The alluvium was a stratified deposit, consisting of both poorly and well-graded sand with varying percentages of silt and gravel. The alluvium was classified as SP, SW and SM, Classes 3b, and 3a, in accordance with the USCS and the NYCBC.

Groundwater was measured at a depth of 12'4" below the existing groundwater surface in the observation well installed in boring B-2W.

Appendix C includes a copy of the geotechnical investigation report.

### **Bedrock Depth**

Bedrock was not encountered during the installation of the geotechnical or soil borings. As previously discussed the greatest depth of the borings was 100 feet below grade.

### **Hydrogeology**

A table of water level data for all monitor wells is included in Table 1. A map of groundwater level elevations with groundwater contours and inferred flow lines is shown in Figure 6. The average depth to groundwater is approximately 12' below grade.

## **4.4 SAMPLE COLLECTION AND CHEMICAL ANALYSIS**

Sampling performed as part of the field investigation was conducted for all AOCs identified in this RIR and considered other means for bias of sampling based on professional judgment, area history, discolored soil, stressed vegetation, drainage patterns, field instrument measurements, odor, or other field indicators. All media including soil, groundwater and soil vapor have been sampled and evaluated in the RIR. Discrete samples have been used for final delineation of the nature and extent of contamination and to determine the impact of contaminants on public health and the environment. The sampling performed and presented in this RIR provides sufficient basis for evaluation of remedial action alternatives, establishment of a qualitative human health exposure assessment, and selection of a final remedy.

## **Soil Sampling**

Data on soil sample collection for chemical analyses, including dates of collection and sample depths, is reported in Table 2. Figure 5 shows the location of samples collected in this investigation.

Sampling equipment was decontaminated by the following.

- Wipe clean and wash with Alconox<sup>®</sup>
- Potable water rinse
- Methanol rinse
- Deionized water rinse
- Air dry

All decontamination procedures were performed in an area segregated from any sampling areas. Any rinsate from the decontamination area was contained and removed from the Site.

Soil samples collected during all invasive investigation were screened by visual and olfactory means and using a calibrated PID. Results of soil screening are recorded on the soil boring logs.

## **Groundwater Sampling**

Groundwater sampling of monitor wells was performed using a low flow pump fitted with dedicated polyethylene tubing. Groundwater sample collection data including dates of collection is reported in Table 2. Well sampling logs with information on purging and sampling of groundwater monitor wells is included in Appendix D. Figure 5 shows the location of samples collected in this investigation.

Sampling equipment was decontaminated by the following.

- Wipe clean and wash with Alconox<sup>®</sup>
- Potable water rinse
- Methanol rinse
- Deionized water rinse
- Air dry

All decontamination procedures were performed in an area segregated from any sampling areas. Any rinsate from the decontamination area was contained and removed from the Site.

### **Soil Vapor and Air Sampling**

Soil vapor and air sampling was performed using a summa canister. Soil vapor and air sample collection data including dates of collection is reported in Table 2. Soil vapor sampling logs are included in Appendix E. Figure 5 shows the location of samples collected in this investigation.

Sampling equipment was decontaminated by purging.

### **Chemical Analysis**

Chemical analytical work presented in this RIR includes the following:

<b>Factor</b>	<b>Description</b>
The project's scope and Project goals	To provide a remedial action that is protective of public health and the environment for the intended use of the property.
Project Direction	This project is directed by Mr. Mark E. Robbins
Quality Assurance Officer	The chemical analytical quality assurance is directed by Mr. Paul Matli
Site maps showing sample locations	A Site map showing the location of samples collected in this program are included in Figure 5
Chemical Analytical Laboratory	Chemical analytical laboratory(s) used in the RI are NYS DOH ELAP certified and were York Analytical Laboratories, Inc. and Spectrum Analytical Inc.
Chemical Analytical Methods	Chemical Analytical Methods for all environmental sampling performed under this RI are

	<p>for soil samples and groundwater samples:</p> <ul style="list-style-type: none"> <li>• TAL Metals by EPA Method 6010C (rev. 2007);</li> <li>• VOCs by EPA Method 8260C (rev. 2006);</li> <li>• SVOCs by EPA Method 8270D (rev. 2007);</li> <li>• Pesticides by EPA Method 8081B (rev. 2000);</li> <li>• PCBs by EPA Method 8082A (rev. 2000);</li> </ul> <p>for soil vapor and air samples:</p> <ul style="list-style-type: none"> <li>• VOCs by TO-15 VOC parameters.</li> </ul> <p>Table 3 includes the media type (soil, groundwater, soil vapor, air) and the following data for each media:</p> <ul style="list-style-type: none"> <li>• number or frequency of samples collected;</li> <li>• analytical methods used;</li> <li>• the number and type of duplicate samples collected.</li> </ul> <p>Methodologies used for soil vapor, indoor and ambient air quality assessment conform to the <i>NYS DOH Final Guidance on Soil Vapor Intrusion dated October 2006</i>.</p>
Standards, Criterion and Guidance	Soil samples were compared to Track 1 (for Track 1 cleanups) Soil Cleanup Objectives. Groundwater samples were compared to New York State groundwater standards. Soil vapor and Air results were evaluated using the protocol established by New York State Department of Health.

**Results of Chemical Analyses**

Laboratory data for soil, groundwater, soil vapor and air are summarized in Table 4, 5, 6 and 7. Laboratory data deliverables for all samples evaluated in this RIR are provided in digital form in Appendix F, G and H.

## 4.5 ENVIRONMENTAL EVALUATION

### 4.5.1 SOIL/FILL

Data collected during the RI is sufficient to delineate the vertical and horizontal distribution of contaminants in soil/fill at the Site. A summary table of data for chemical analyses performed on soil samples is included in Table 4.

**Lot 39- Soil:** Materials beneath the foundation slab on this 1/9 acre property were sampled at three locations and showed no evidence of SVOCs except bis-2-ethylhexyl phthalate at relatively low concentrations. No SVOCs exceeded Track 2 standards. No VOCs were identified in soil samples except methylene chloride, which was identified at comparably low levels in all samples. VOCs did not exceed Track 2 standards. Extremely low levels of metals were identified in soil samples (for instance, lead was between 6-10 ppm and arsenic between 1-3 ppm in four samples). Metals did not exceed Track 2 SCOs.

**Lots 34, 35 & 36- Soil:** Soil/fill samples confirmed the presence of moderate concentrations of semi volatile organic compounds (SVOCs) 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, Benzo (a) Anthracene (ranges from 1,360 to 4,540  $\mu\text{g}/\text{kg}$ ) and Chrysene (ranges from 1,330 to 4,660  $\mu\text{g}/\text{kg}$ ). PAHs are not detected in deeper soil samples on any of the three lots. Bis (2-Ethyl Hexyl) Phthalate was the only SVOC detected in the deep soil samples and due to its occurrence in virtually all samples at consistent concentrations is believed to be a lab artifact. No other SVOCs were detected in the deep soil samples. No VOCs were detected in any soil sample on the three lots with the exception of methylene chloride which was detected in every sample at a comparable concentration below the Track 1 SCO. Methylene chloride in these samples is believed to be a lab artifact. Metals were identified in soil from zero to 2 feet in northern and southern portions of Lots 34, 35 & 36. Lead is generally below 700 ppm but is found in historic fill as high as 3,050 mg/kg in one sample on Lot 36. Concentrations are generally lowest on Lots 34 and 35. Arsenic marginally exceeds Track 1 SCOs in two fill samples on Lot 36 (13.9 and 14.2 mg/kg compared to an SCO of 13). Elevated levels of metals were not detected in any of the deep soil samples.

#### 4.5.1.1 COMPARISON OF SOIL/FILL WITH SCGS

Figure 7 shows the location and posts the values for soil/fill that exceed the 6NYCRR Part 375-6.8 for planned Track 1 remedies, comparison made to the unrestricted Track 1 SCOs for proposed land use.

#### 4.5.2 GROUNDWATER

A summary table of data for chemical analyses performed on groundwater samples is included in Table 5. 6NYCRR Part 703.5 Class GA groundwater standards are shown.

**Lot 39- Groundwater:** Groundwater is identified at 10 feet depth below street grade. Groundwater contained very low levels of dissolved metals in samples (for instance lead and arsenic were not detected). SVOCs, PCBs and Pesticides were not detected. Only one VOC, methylene chloride, was detected and was below the groundwater standard of 5 ug/l. Unfiltered metals showed evidence of soil turbidity. No saline intrusion was evident.

**Lots 34, 35 & 36- Groundwater:** Groundwater is identified at 10 feet depth below grade. Groundwater contained very low levels of dissolved metals in samples (for instance lead was not detected). SVOCs, PCBs and Pesticides were not detected. Methylene chloride was detected in all groundwater samples and was below the groundwater standard of 5 ug/l. Similar to soil, methylene chloride was identified in all groundwater samples collected at both Church of Scientology (COS) sites and is believed to be a lab artifact. Unfiltered metals showed evidence of soil turbidity. No saline intrusion was evident. Perchloroethylene were identified at low levels in monitor wells on Lot 34 and 35 and trichlorethylene was identified at low levels in a monitor well on Lot 35. Neither was identified on Lot 36. Concentrations of perchloroethylene were 2.1 and 2.7 ug/l on Lot 34 and 35, respectively. Trichlorethylene was 0.9 ug/l on lot 35.

##### 4.5.2.1 COMPARISON OF GROUNDWATER WITH SCGS

Table 5 shows exceedances in monitoring wells from 6NYCRR Part 703.5 Class GA groundwater standards in bold. Figure 8 shows the location and posts the values for groundwater that exceed the New York State 6NYCRR Part 703.5 Class GA groundwater standards.

### 4.5.3 SOIL VAPOR AND AIR

A summary table of data for chemical analyses performed on soil vapor samples is included in Table 6. A summary table of data for chemical analyses performed on air samples is included in Table 7. Guidance values from NYS DOH Final Guidance on Soil Vapor Intrusion (October 2006) are shown.

**Lot 39- 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 6 to 151 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 ug/m<sup>3</sup> in either sample. No onsite source of BTEX or chlorinated VOC was detected and soil vapor findings are attributed to off-site activities and is not related to an on-site source.

**Lots 34, 35 & 36- 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 trichlorethylene. Total VOC compounds in soil vapor ranged from 0.250 ug/m<sup>3</sup> to 750 ug/m<sup>3</sup> beneath Lots 34, 35 and 36. TCE ranges from 2.54 ug/m<sup>3</sup> to 349 ug/m<sup>3</sup> and levels of PERC ranges from 0.460 ug/m<sup>3</sup> to 15.9 ug/m<sup>3</sup>. The site contaminants observed in sub-slab soil vapor appear to be related to a gasoline-associated and a chlorinated solvent source. Highest concentrations of TCE are found on the north side and south side of the former church on Lot 35. Highest concentrations of PCE are found on the north side of both Lot 35 and 36. BTEX concentrations occur in all nine of the soil vapor probes on the property, with concentrations below 60 ug/m<sup>3</sup> 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 the second COS property where no contamination was observed and BTEX was identified in soil vapor, this suggests their origin from an off-site 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 this lot 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 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.

#### **4.5.3.1 COMPARISON OF SOIL VAPOR AND AIR**

Table 5 shows soil vapor results obtained at the Site. Figure 9 shows the location and posts the values for soil vapor samples with elevated concentrations of chlorinated compounds. Figure 10 shows the location and posts the values for soil vapor samples with elevated concentrations of gasoline compounds.

Table 6 shows indoor and outdoor air results obtained at the Site. Figure 11 shows the location and posts the values for air samples with elevated concentrations of volatile organic compounds.

#### **4.6 OTHER REPORTING**

Photographs were taken during RI activities and are included in digital (pdf as well as JPEG) format in Appendix I and include identified contaminant source areas and remedial investigation activities. Representative photographs of the Site prior to field work are included.

#### **4.7 PRIOR ACTIVITY**

Based on an evaluation of the data and information from the RIR, the presence of significant amounts of inactive hazardous waste disposal as defined in 6 NYCRR Part 375 is not suspected at this site.

#### **4.8 IMPEDIMENTS TO REMEDIAL ACTION**

There are no known impediments to remedial action at this property.



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

FAST IN INUNDATED  
AREA OF BASEMENT

SIDEWALK

ABANDONED  
FILL PORT

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

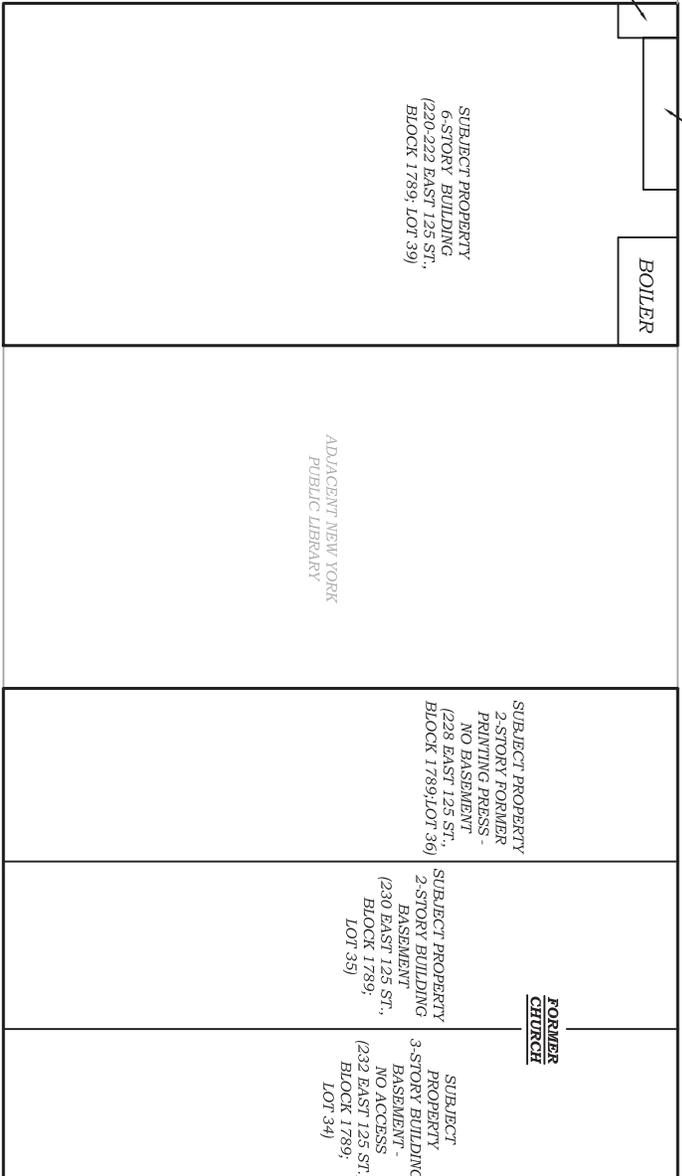
SUBJECT PROPERTY  
2-STORY FORMER  
PRINTING PRESS -  
NO BASEMENT -  
(228 EAST 125 ST.,  
BLOCK 1789; LOT 36)

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)

ADJACENT 2-STORY  
COMMERCIAL  
(UPHOLSTERY REPAIR)



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BROOKLIN, NEW YORK 11225  
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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 1: SITE LOCATION MAP

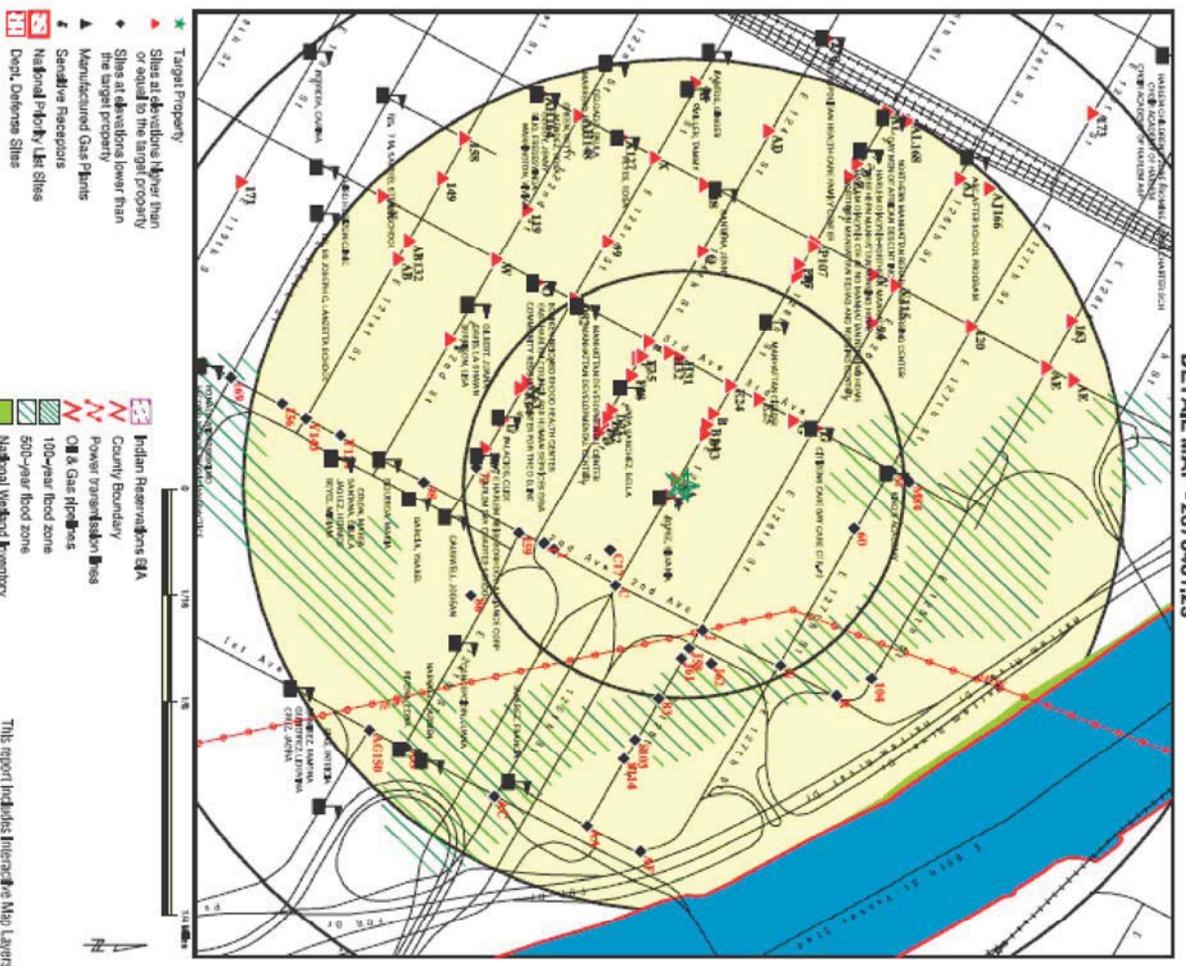


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 New York, NY.

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 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



This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

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

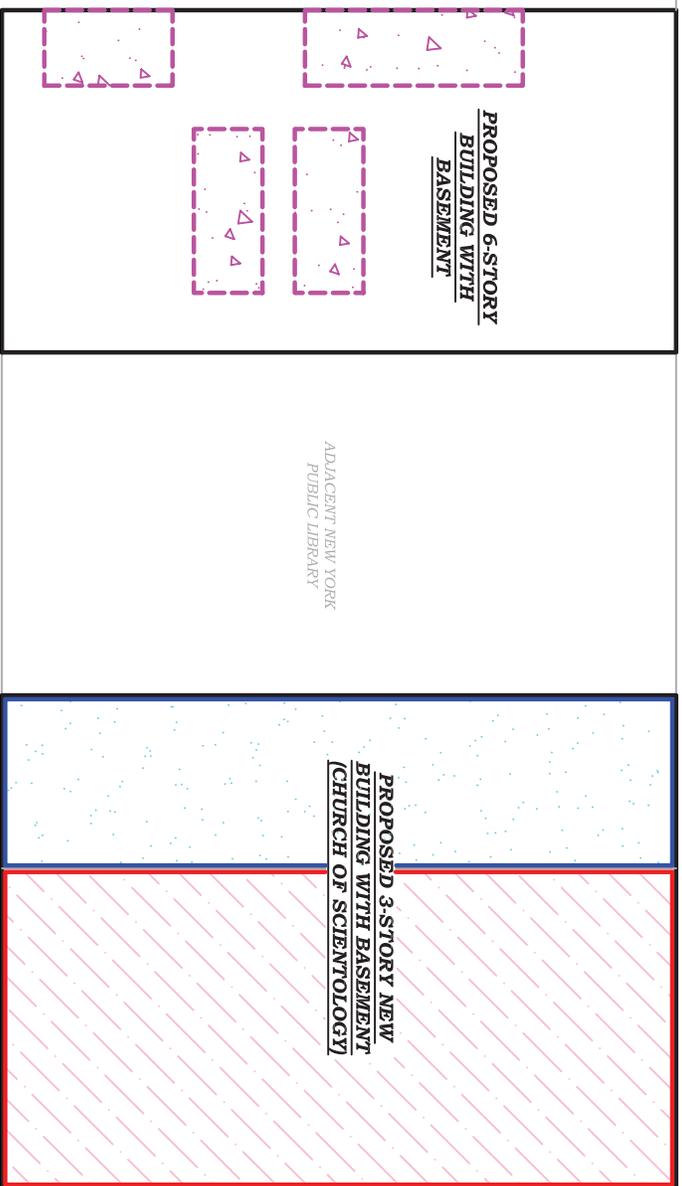
ADJACENT 4-STORY  
ABANDONED BUILDING

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.

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

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



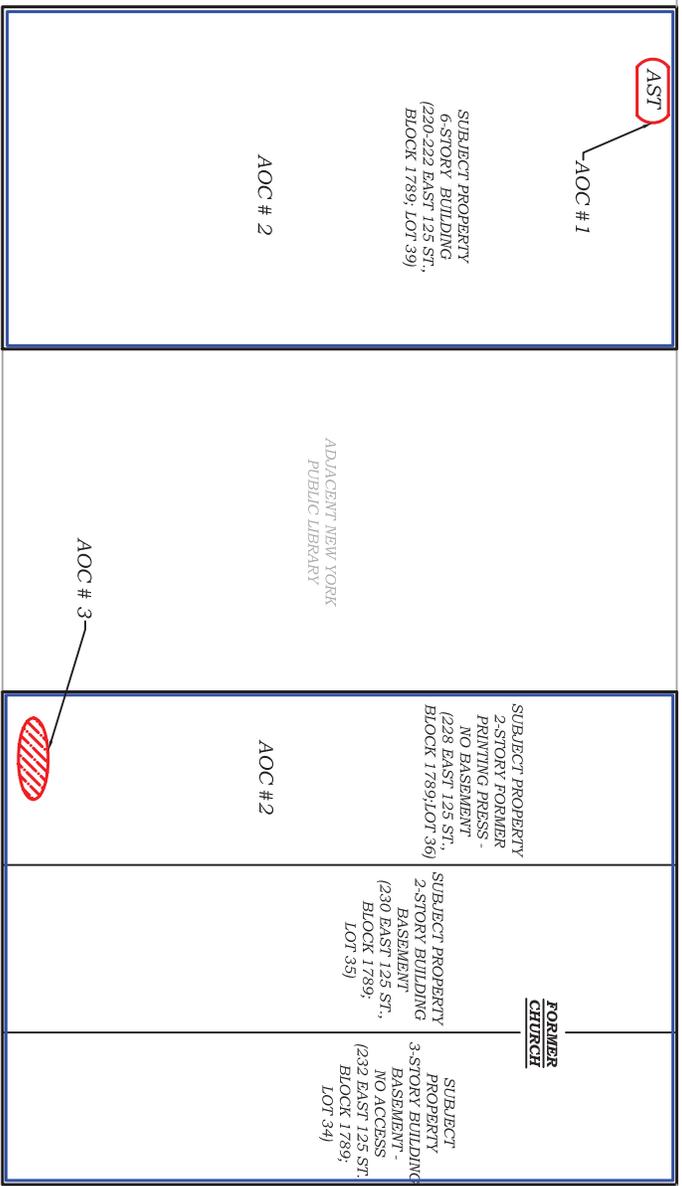
EAST 125th STREET

FILL PORT

SIDEWALK

ABANDONED  
FILL PORT

ADJACENT 4-STORY  
RESIDENTIAL  
(BAR & GRILL)



- 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
  - AST 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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East 125th Street  
New York, NY.

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

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

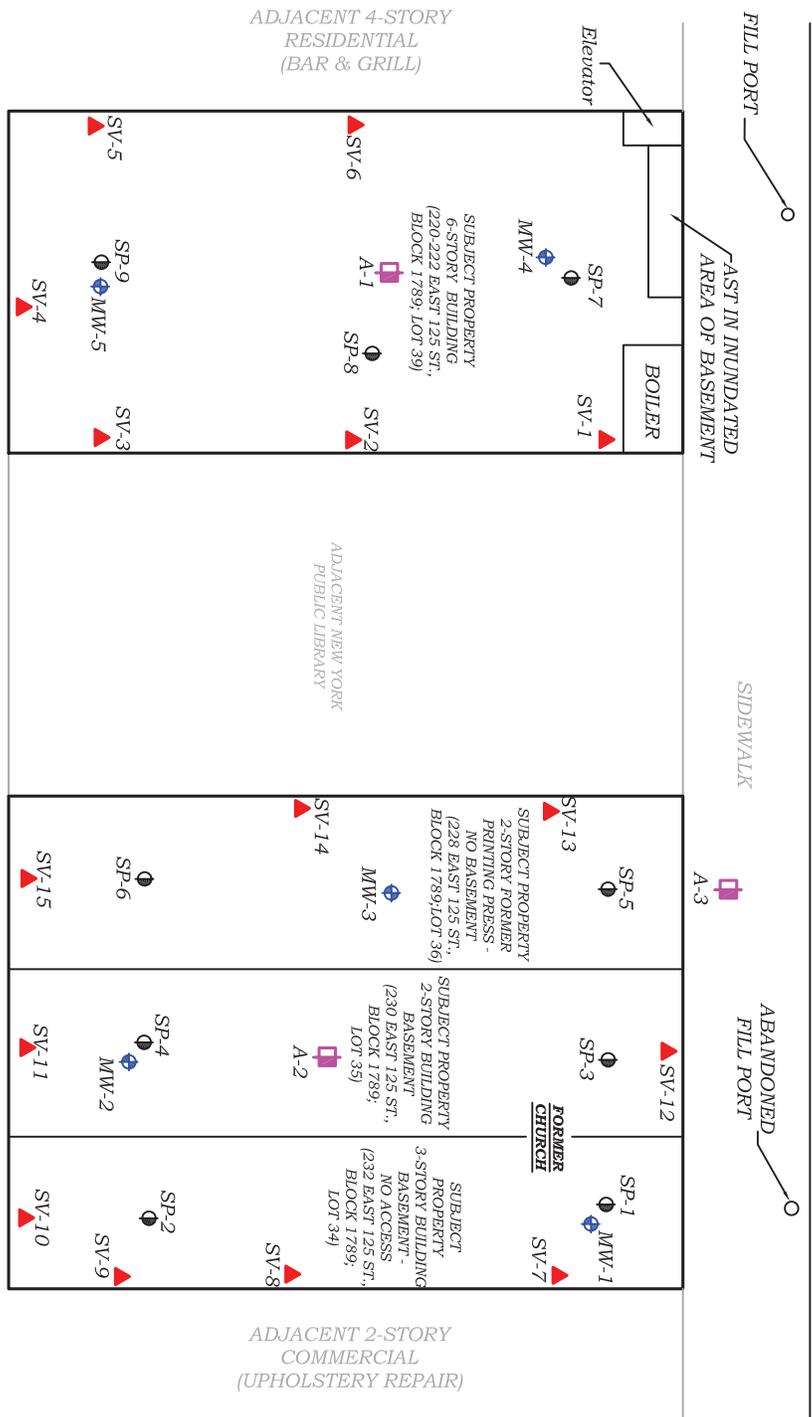
ADJACENT 2-STORY COMMERCIAL (HARLEM TIMES & AUTO REPAIR)

ADJACENT 4-STORY ABANDONED BUILDING

ADJACENT TRUCK PARKING LOT

ADJACENT BP GASOLINE STATION

EAST 125th STREET



- 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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East 125th Street  
New York, NY.

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

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

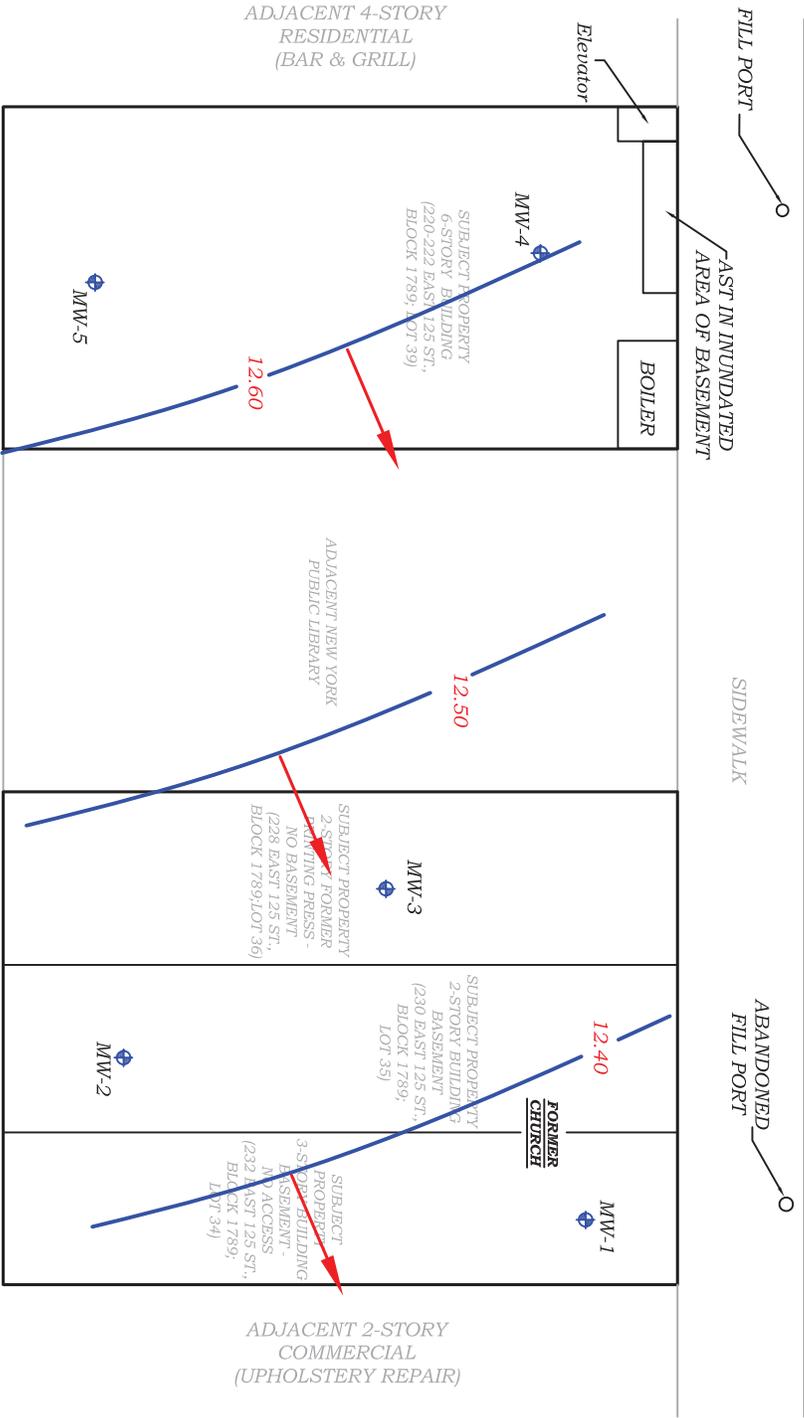
ADJACENT 2-STORY  
COMMERCIAL  
(HARLEM TIMES & AUTO REPAIR)

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 PRESS -  
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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Drawn By:	CQ
Reviewed By:	MR
Approved By:	MS
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

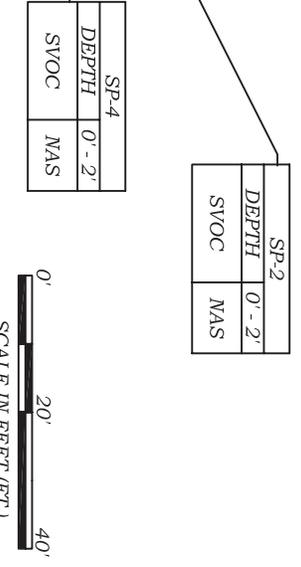
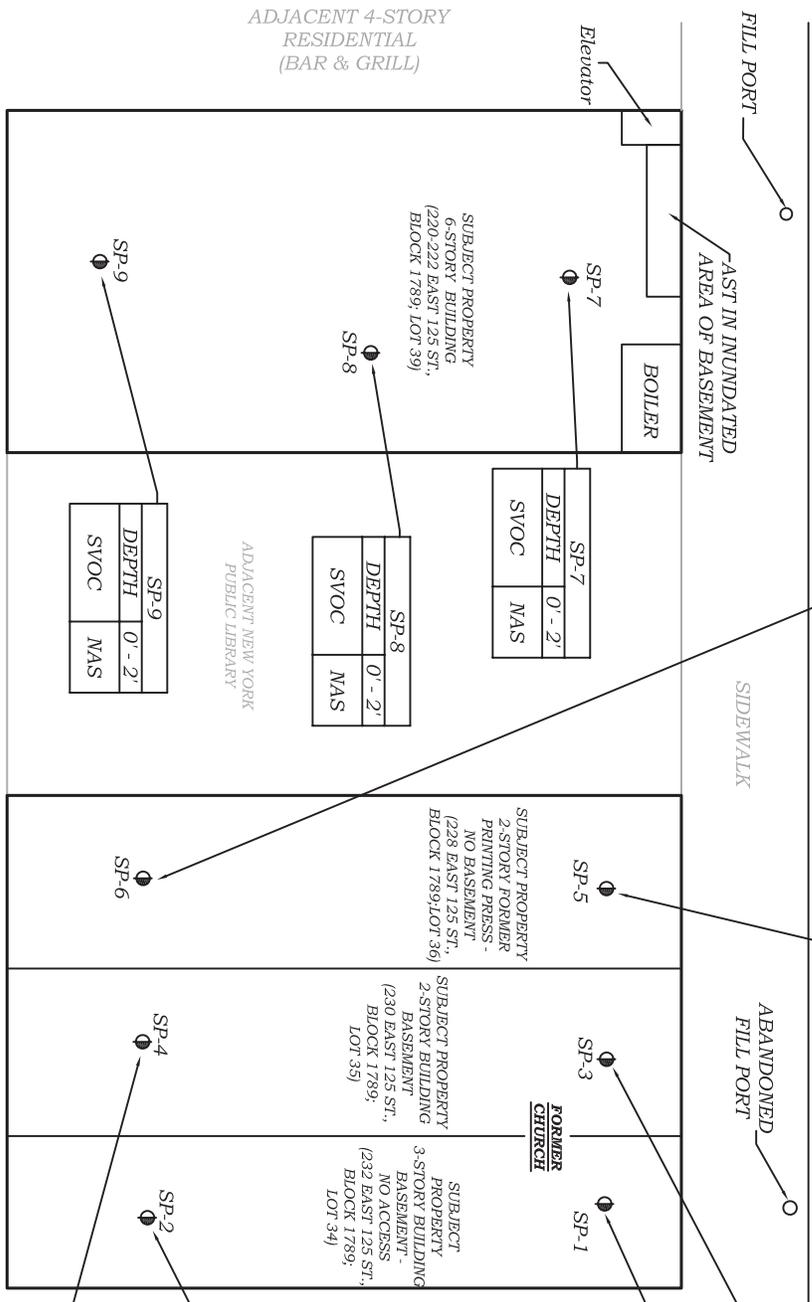
DEPTH	0' - 2'	UUSCO
SVOC	µg/Kg	UUSCO
Benzo (a) Anthracene	1,360	1,000
Chrysene	1,330	1,000
Benzo (b) Fluoranthene	1,240	1,000
Benzo (k) Fluoranthene	1,270	800
Benzo (a) Pyrene	1,320	1,000
Indeno (1,2,3-cd) Pyrene	841	500
Total SVOCs	13,629	NS

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

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

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

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



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 Reviewed By: MR  
 Approved By: MS  
 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

MW-2	
METALS	NAS

MW-5

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



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 East 125th Street  
 New York, NY.

Drawn By:	CQ
Reviewed By: <td>MR</td>	MR
Approved By: <td>MS</td>	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

FILL PORT  
AREA OF BASEMENT  
Elevator

SIDEWALK

ABANDONED FILL PORT

SV-6	
CHLORINATED COMPOUNDS	ND

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

SV-1	
CHLORINATED COMPOUNDS	ND

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

SV-2	
CHLORINATED COMPOUNDS	ND

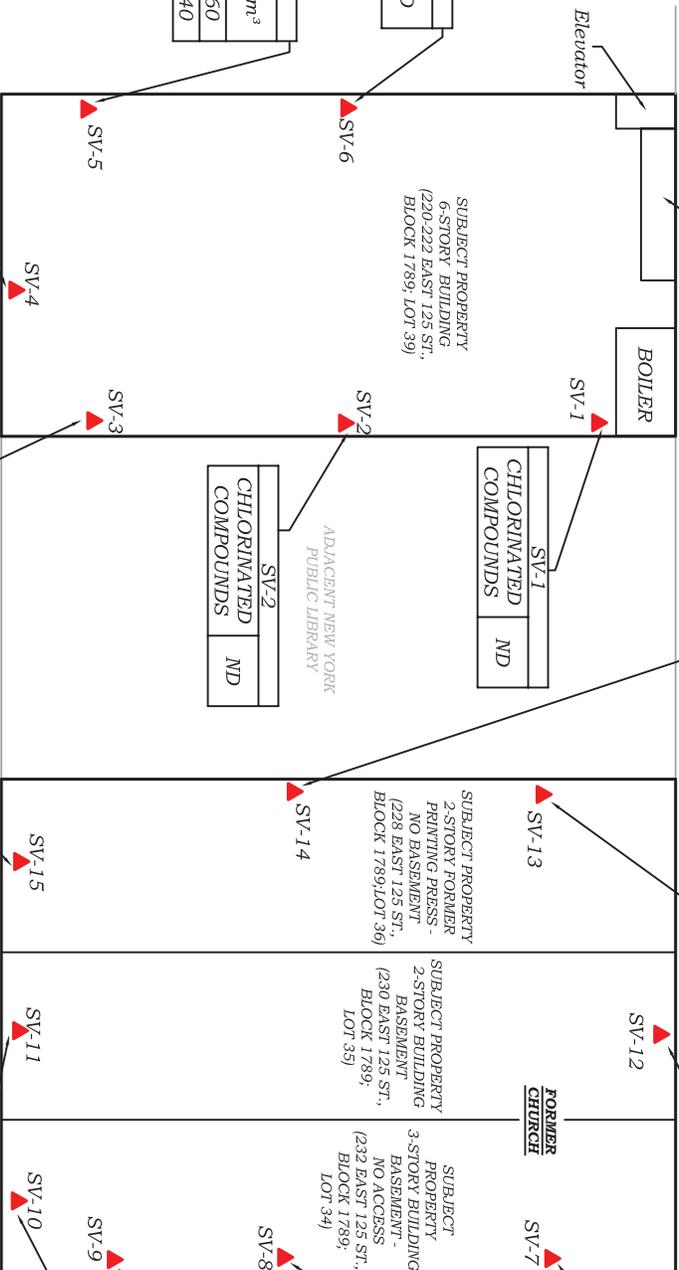
SUBJECT PROPERTY  
2-STORY FORMER  
PRINTING PRESS -  
NO BASEMENT  
(228 EAST 125 ST.,  
BLOCK 1789, LOT 36)

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)

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

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



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

LEGEND:

SOIL VAPOR IMPLANT LOCATION (SV)

TLE

PERC

µg/m<sup>3</sup>

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-7

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

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)

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SV-8

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

SV-5

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

SV-14

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

SV-8

SV-9

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

SV-10

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

SV-4

GASOLINE COMPOUNDS	µg/ m <sup>3</sup>
B	0.920
T	36.2
E	0.830
X	3.83

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

LEGEND:

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

TITLE:

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

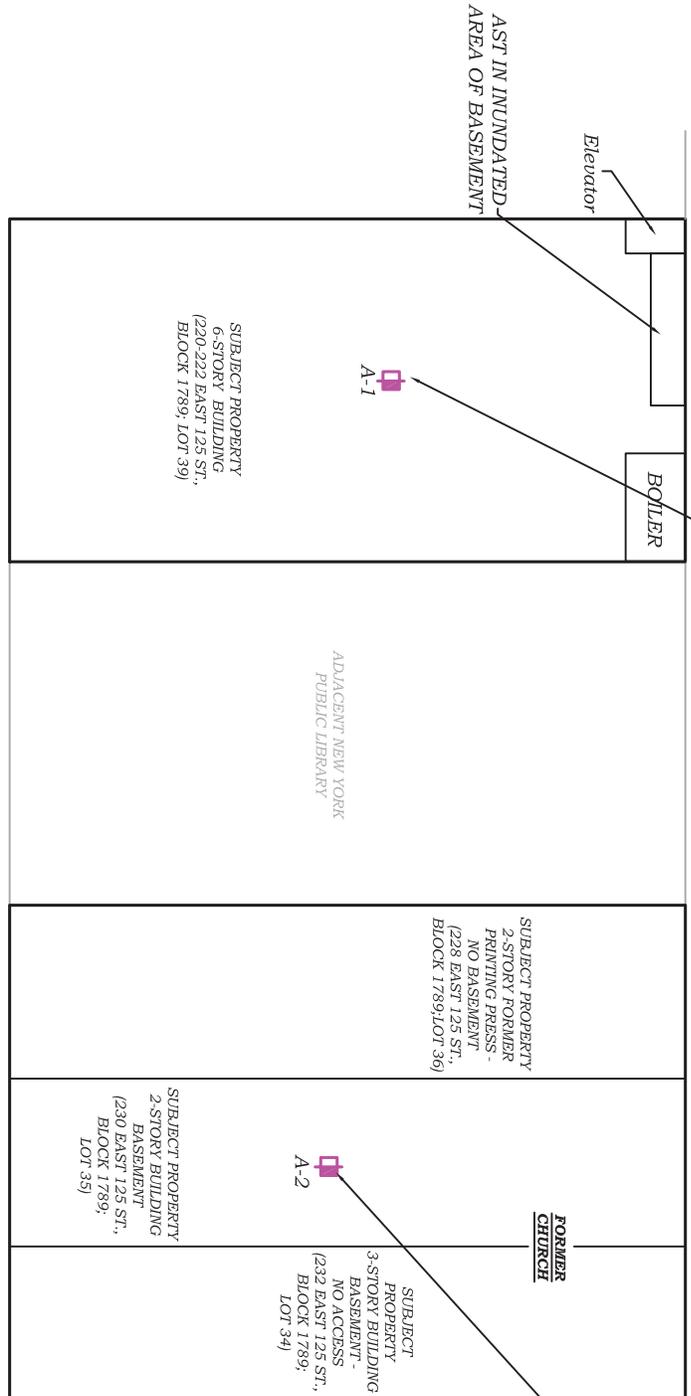
SIDEWALK

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)
  - VOOC VOLATILE ORGANIC COMPOUND
  - µg/ m<sup>3</sup> MICROGRAMS PER CUBIC METER



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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
Semi Volatile Organic Compounds									
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